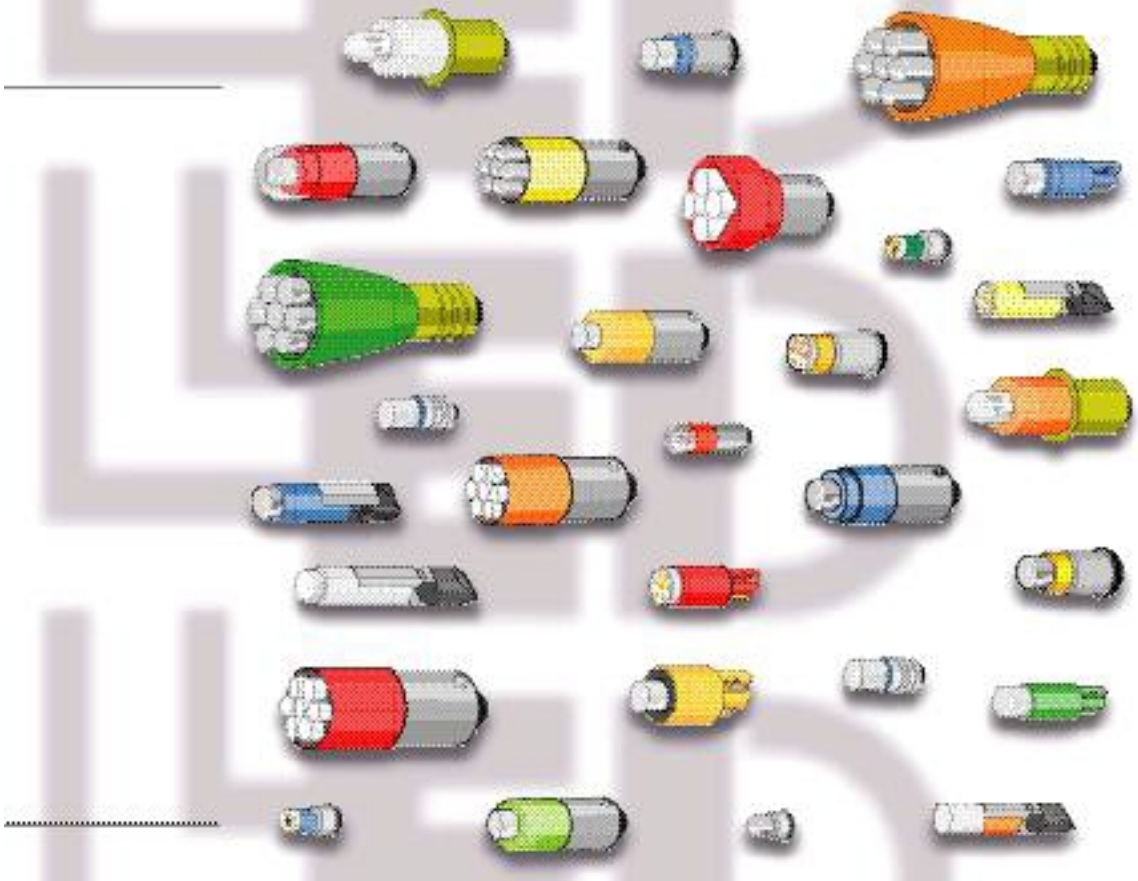
# miniature based

## Miniature Based LED Lamps




LEDTRONICS, INC.
THE FUTURE OF LIGHT

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Once limited to simple status indicators, Light Emitting Diodes (LEDs) now play prominent roles in back lighting, panel indication, decorative illumination, emergency lighting, animated signage, etc.... The emergence of LEDs as a viable alternative to incandescent lighting can be attributed to new manufacturing technologies, packaging innovations and an increasing number of colors. These factors along with the growing awareness of the advantages of LEDs (e.g., a life span measured in years not hours, vivid sunlight-visible colors and low power requirements) have engineers, product designers, purchasing agents and component vendors viewing LEDs in a whole new light.

For many applications LED lamps are superior to incandescent lighting. So why is it that in tens of millions of switches, indicators, control panels, signs, annunciators, displays, decor lights and dozens of other applications, design engineers still specify incandescent technology? It might be that they're just a few years behind what's really happening in LED illumination.

Although advances made in LED technology in the past few years have dramatically broadened the applications for these rugged little light sources, it wasn't that long ago that red was the only "daylight-visible" colored LED. And that wasn't the only thing limiting their use!

Unlike incandescent bulbs that give off the full spectrum of light in a spherical pattern, LEDs emit a focused beam of a single wavelength (color) in only one direction, in a variety of angles. For many applications, such as indicators or switch illuminators, this is not a problem, but it took the development of multi-chip arrays and high-flux LED chips to begin to achieve the effect of an incandescent filament.

Major advancements in LED technology have taken place in recent years such as development of new "doping" technologies that increase LED light output by as much as 20 times over earlier generations, and allow the production of daylight-visible LEDs in virtually any color of the spectrum. In addition to red, yellow, and amber/orange, LEDs are now available in many colors from leaf green to ultra blue. Even white light, long thought to be an impossibility, is now available in three different shades as a light-emitting diode.

The efficiency of LEDs is most apparent in applications requiring color. Light from a typical incandescent bulb must be filtered so that only light from a particular part of the spectrum (e.g., red, amber or green, etc...) for example—is visible. While LEDs deliver 100 percent of their energy as colored light, incandescent bulbs waste 90 percent or more of their energy in light blocked by the colored lens or filter. Incandescent bulbs also waste 80 percent to 90 percent of their energy on heat generation to reach the temperature for which (Kelvin scale) they are designed.

The point is that what was once a fairly marginal light source isn't marginal any more. In many applications, LEDs exceed the energy available from incandescent bulbs and offer significant additional benefits making LED clusters and lamps as friendly to the environment as they are to the operating budget.

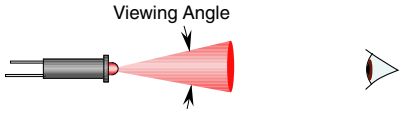
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# Application Notes

| | |
|---|---|
| Will the Panel LED replace another manufacturers parts? | Dialight, Data Display Products, Industrial Devices Inc., etc... If so, what is the part number? |
| Mounting Type? | Snap-in, Snap-in with mount clip, Bolt-on, Relampable, etc... |
| Mounting Diameter & Panel Thickness? | What is the hole diameter into which the lamp assembly must fit? How thick is the wall of the panel? |
| Operating Voltage and Polarity? | Actual open line voltage? AC or DC? Does it fluctuate? Indicate the Minimum/Maximum values? |
| Terminal Type? | Are solid wire (0.02 sq.), pigtail flexible wire lead (24AWG), quick disconnect (3/16 rectangular), solder lug, turret, or screw-on type terminals preferred? |
| Viewing Distance? | How far is the operator / technician when the indicator must be visible? 5 to 10 feet, 20 to 50 feet, 100 to 200 feet, 500 to 1000 feet? |
| Viewing Angle? | 0 to 12 degrees – Narrow Beam<br>30 to 60 degrees – Medium Beam<br>100 to 160 degrees – Wide Beam   |
| LED Color? | Ultra Red, Hi-Efficiency Red, Standard Red, Orange, Yellow, Cool white, Ultra Green, Aqua Green, Blue |
| Lens Type? | Diffused lenses are used in applications where direct viewing or indication is needed. Clear lenses are used in application where illumination is needed. Is the lens fluted? |
| Ambient Lighting? | Standard office lighting. High ceiling factory lighting. Indirect sunlight. Direct sunlight |
| Potential Quality and Target Price? | How many pieces are required within a given time frame? How much budgetary funding is allowed for this item or project? |


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# Based LED Questionnaire

Date_____

## About you

The following information assists LEDtronics in determining the most appropriate FREE LED product SAMPLE. Fax to (310) 534-1424 for fast response.

Name: _____ Phone: (  ) _____

Company: _____ Fax: (  ) _____

Address: _____ M/S: _____

City: _____ State: _____ Zip: _____

E-Mail: _____

## About your company

What does your company manufacture _____

Is your company ☐ Govt/Military ☐ Govt Contractor ☐ OEM ☐ Distributor ☐ Utility ☐ MRO

Requirement is for ☐ R&D ☐ Replacement ☐ New Application ☐ Other _____

Total annual quantity _____

Target price _____ Time frame ☐ Immediate ☐ 3 months ☐ 6 months

For internal use only

SIC code: _____

Originator: _____

Rep: _____

Current Customer ☐ Yes ☐ No

## About your application



Incandescent/LED No. _____ mAmps _____ Design Volts _____ MSCD_____



Base size ☐ T1 ☐ T2 ☐ T1¾ ☐ T3¼ ☐ S6 ☐ 15mm ☐ Other_____

Base type ☐ Flange ☐ Bayonet ☐ Wedge ☐ Bi-pin ☐ Screw ☐ Groove ☐ Other_____

Operating voltage (max) ☐ 5V ☐ 12V ☐ 24V ☐ 28V ☐ 120VAC ☐ Other_____




Voltage (type) ☐ AC ☐ DC ☐ Bipolar Polarity of center contact ☐ + ☐ –



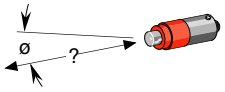
Lens color ☐ Red ☐ Orange ☐ Amber ☐ Yellow ☐ White ☐ Green ☐ Blue ☐ Other_____




Lens type ☐ Clear ☐ Diffused Lens size ☐ 16mm ☐ 22mm ☐ 30mm ☐ Other_____

Lens shape ☐ Circular ☐ Square ☐ Rectangular

☐ Jelly-jar ☐ Other_____



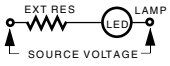

Ambient lighting conditions ☐ Indirect sunlight ☐ Direct sun ☐ Office ☐ Lowlight ☐ Darkroom

Maximum viewing distance desired ☐ 1 ft ☐ 5 ft ☐ 10 ft ☐ 20 ft ☐ 50 ft ☐ Other_____




Maximum viewing angle desired ☐ Straight on ☐ 30¡ ☐ 60¡ ☐ 90¡ ☐ Other_____

Distance between top of lamp and lens/filter ☐ 1/8" ☐ 1/4" ☐ 1/2" ☐ Other _____




Is an external resistor in series with the lamp ☐ Yes ☐ No If yes, Ohms _____ Watts_____

What is the source voltage if higher than the operating voltage of the lamp _____

Would like updated literature ☐ Yes ☐ No More info on: ☐ Based ☐ Panel ☐ PCB ☐ Discrete ☐ Other_____

Applicable statutory and regulatory requirements ☐ Yes ☐ No Doc. No. _____

## Additional Notes/Sketches

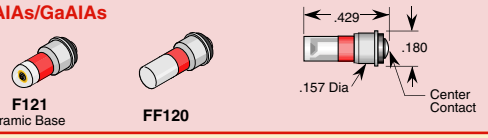

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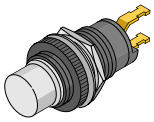
# T1(3mm) Sub-Midget Based LEDs

| Subminiature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAlAs** | 682,685,714,718 | FF120-0UR-005P | 5V | 20 | 100 | 120º | Center Contact Polarity P = Positive N = Negative<br>Replace FF120 With F120 Standard (65º) Beam Intensity 180 mcd/30 Ft.Cd |
| | 7241 | FF120-0UR-018P | 18V | 15 | 50 | | |
| | 6839 | FF120-0UR-024P | 24V | 12 | 33 | | |
| | 6839 | FF120-0UR-028P | 28V | 12 | 33 | | |
| **612nm Super Orange InGaAlP** | 682,685,714,718 | FF120-0UO-005P | 5V | 20 | 85 | 120º | Center Contact Polarity P = Positive N = Negative<br>Replace FF120 With F120 Medium (50º) Beam Intensity 350 mcd |
| | 7241 | FF120-0UO-018P | 18V | 15 | 64 | | |
| | 6839 | FF120-0UO-024P | 24V | 12 | 51 | | |
| | 6839 | FF120-0UO-028P | 28V | 12 | 51 | | |
| **595nm Super Yellow InGaAlP** | 682,685,714,718 | FF120-0UY-005P | 5V | 20 | 32 | 120º | Center Contact Polarity P = Positive N = Negative<br>Replace FF120 With F120 Medium (50º) Beam Intensity 1K mcd |
| | 7241 | FF120-0UY-018P | 18V | 15 | 21 | | |
| | 6839 | FF120-0UY-024P | 24V | 12 | 15 | | |
| | 6839 | FF120-0UY-028P | 28V | 12 | 15 | | |
| **8000K Cool White SiC/GaN** | 682,685,714,718 | FF120-0CW-005P | 5V | 15 | 150 | 120º | Center Contact Polarity P = Positive N = Negative<br>Replace FF120 With F120 Std. (50º) Beam Intensity 650 mcd/75 Ft. cd |
| | 7241 | FF120-0CW-018P | 18V | 15 | 150 | | |
| | 6839 | FF120-0CW-024P | 24V | 10 | 100 | | |
| | 6839 | FF120-0CW-028P | 28V | 10 | 100 | | |
| **570nm Lime Green InGaAlP** | 682,685,714,718 | FF120-0UG-005P | 5V | 20 | 36 | 120º | Center Contact Polarity P = Positive N = Negative<br>Replace FF120 With F120 Medium (50º) Beam Intensity 165 mcd@ 20 mA |
| | 7241 | FF120-0UG-018P | 18V | 15 | 27 | | |
| | 6839 | FF120-0UG-024P | 24V | 12 | 22 | | |
| | 6839 | FF120-0UG-028P | 28V | 12 | 22 | | |
| **525nm Aqua Green SiC/GaN** | 682,685,714,718 | FF120-0AG-005P | 5V | 15 | 200 | 120º | Center Contact Polarity P = Positive N = Negative<br>Replace FF120 With F120 Narrow (15º) Beam Intensity 5K mcd/145 Ft.Cd |
| | 7241 | FF120-0AG-018P | 18V | 15 | 200 | | |
| | 6839 | FF120-0AG-024P | 24V | 10 | 150 | | |
| | 6839 | FF120-0AG-028P | 28V | 10 | 150 | | |
| **470nm Super Blue SiC/GaN** | 682,685,714,718 | FF120-0PB-005P | 5V | 15 | 60 | 120º | Center Contact Polarity P = Positive N = Negative<br>Replace FF120 With F120 Std. (15º) Beam Intensity 1.5K mcd/32 Ft.Cd @15 mA |
| | 7241 | FF120-0PB-018P | 18V | 15 | 60 | | |
| | 6839 | FF120-0PB-024P | 24V | 10 | 45 | | |
| | 6839 | FF120-0PB-028P | 28V | 10 | 45 | | |

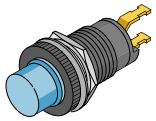



All dimensions in inches. For millimeters multiply by 25.4

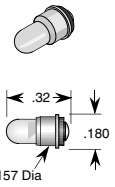
## Options



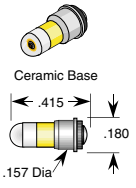
**Series:** HLD310 (Rear Mount)
**PN Example:** HLD310CW900-5V-P



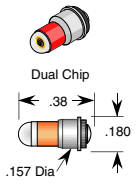
**Series:** HLC310 (Front Mount)
**PN Example:** HLC310CB1K-5V-P



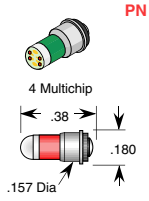

**Series:** F120 (No Resistor)
**PN Example:** F120-0UR-002F



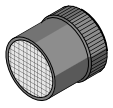

**Series:** F121 (1 Chip, 160º)
**PN Example:** F121-0UY-005P



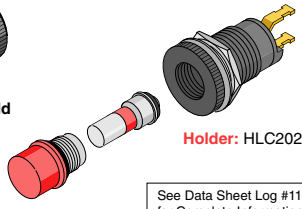

**Series:** F122 (2 Chip, 160º)
**PN Example:** F122-0UO-005P




**Series:** F124 (4 Chip, 160º)
**PN Example:** F124-0UR-028P



**RFI EMI Shield**



**Holder:** HLC2020

**Lens:** HL230

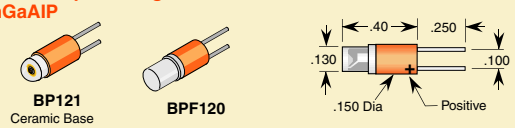
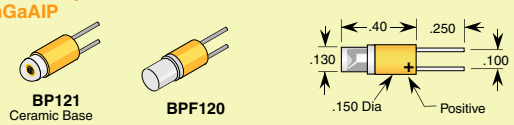
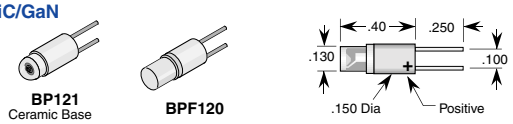
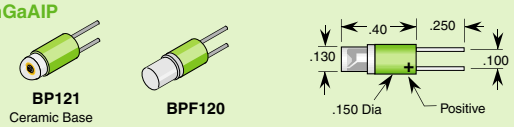
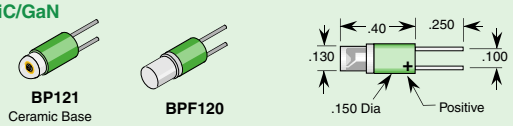
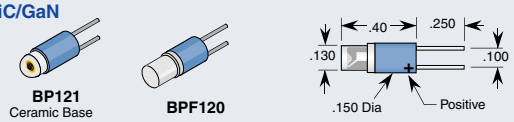
See Data Sheet Log #119 for Complete Information on Panel Mount LEDs

Log # 122A Rev 09-2000


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Website: www.ledtronics.com

# T1(3mm) Sub-Midget Bi-Pin Based LEDs

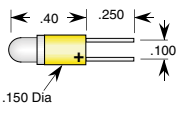
| Subminiature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAlAs**   | 7265,7680,7714 | BPF120-0UR-005V | 5V | 20 | 100 | 120º | Contact Polarity<br>V = DC only<br>Replace BPF120 With BP120 Standard (65º) Beam Intensity 180 mcd/30 Ft.Cd @20 mA |
| | | BPF120-0UR-014V | 12/14V | 15 | 50 | | |
| | 7839 | BPF120-0UR-024V | 24V | 12 | 33 | | |
| | 7839 | BPF120-0UR-028V | 28V | 12 | 33 | | |
| **612nm Super Orange InGaAlP**   | 7265,7680,7714 | BPF120-0UO-005V | 5V | 20 | 85 | 120º | Contact Polarity<br>V = DC only<br>Replace BPF120 With BP120 Medium (50º) Beam Intensity 350 mcd@20 mA |
| | | BPF120-0UO-014V | 12/14V | 15 | 64 | | |
| | 7839 | BPF120-0UO-024V | 24V | 12 | 51 | | |
| | 7839 | BPF120-0UO-028V | 28V | 12 | 51 | | |
| **595nm Super Yellow InGaAlP**   | 7265,7680,7714 | BPF120-0UY-005V | 5V | 20 | 32 | 120º | Contact Polarity<br>V = DC only<br>Replace BPF120 With BP120 Medium (50º) Beam Intensity 1K mcd@20 mA |
| | | BPF120-0UY-014V | 12/14V | 15 | 21 | | |
| | 7839 | BPF120-0UY-024V | 24V | 12 | 15 | | |
| | 7839 | BPF120-0UY-028V | 28V | 12 | 15 | | |
| **8000K Cool White SiC/GaN**   | 7265,7680,7714 | BPF120-0CW-005V | 5V | 15 | 150 | 120º | Contact Polarity<br>V = DC only<br>Replace BPF120 With BP120 Std (50º) Beam Intensity 650 mcd/75 Ft. cd @15 mA |
| | | BPF120-0CW-014V | 12/14V | 15 | 150 | | |
| | 7839 | BPF120-0CW-024V | 24V | 10 | 100 | | |
| | 7839 | BPF120-0CW-028V | 28V | 10 | 100 | | |
| **570nm Lime Green InGaAlP**   | 7265,7680,7714 | BPF120-0UG-005V | 5V | 20 | 36 | 120º | Contact Polarity<br>V = DC only<br>Replace BPF120 With BP120 Medium (50º) Beam Intensity 165 mcd@ 20 mA |
| | | BPF120-0UG-014V | 12/14V | 15 | 27 | | |
| | 7839 | BPF120-0UG-024V | 24V | 12 | 22 | | |
| | 7839 | BPF120-0UG-028V | 28V | 12 | 22 | | |
| **525nm Aqua Green SiC/GaN**   | 7265,7680,7714 | BPF120-0AG-005V | 5V | 15 | 200 | 120º | Contact Polarity<br>V = DC only<br>Replace BPF120 With BP120 Narrow (15º) Beam Intensity 5K mcd/145 Ft.Cd @15 mA |
| | | BPF120-0AG-014V | 12/14V | 15 | 200 | | |
| | 7839 | BPF120-0AG-024V | 24V | 10 | 150 | | |
| | 7839 | BPF120-0AG-028V | 28V | 10 | 150 | | |
| **470nm Super Blue SiC/GaN**   | 7265,7680,7714 | BPF120-0PB-005V | 5V | 15 | 60 | 120º | Contact Polarity<br>V = DC only<br>Replace BPF120 With BP120 Std (15º) Beam Intensity 1.5K mcd/32 Ft.Cd @15 mA |
| | | BPF120-0PB-014V | 12/14V | 15 | 60 | | |
| | 7839 | BPF120-0PB-024V | 24V | 10 | 45 | | |
| | 7839 | BPF120-0PB-028V | 28V | 10 | 45 | | |

All dimensions in inches. For millimeters multiply by 25.4

## Options



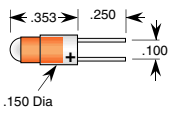
Single Chip




**Series:** BP120 (No Resistor)
**PN Example:** BP120-0UY-005B



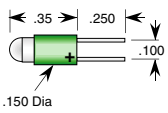
Dual Chip




**Series:** BP122 (2Chip 160º)
**PN Example:** BP122-0CO-005B



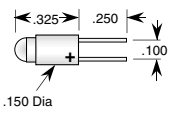
4 Multichip




**Series:** BP124 (4 Chip 160º)
**PN Example:** BP124-0UG-005B



4 Multichip




**Series:** BP124 (4 Chip 160º)
**PN Example:** BP124-0CW-005B

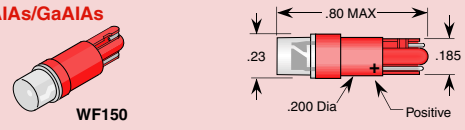
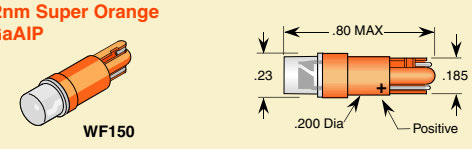
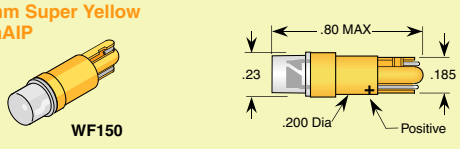
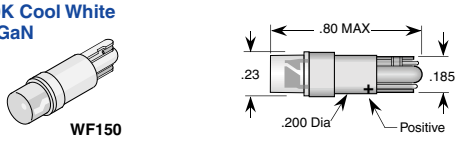
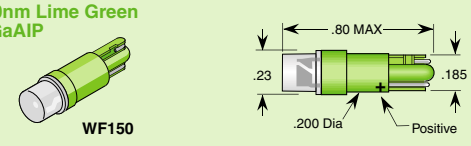
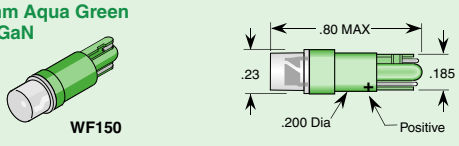
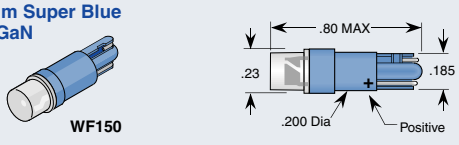
Log # 122B Rev 09-2000


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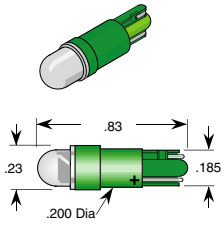
23105 Kashiwa Court, Torrance, CA 90505
Phone: (800) 579-4875 or (310) 534-1505
Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: www.ledtronics.com

# T1-1/2 (4.5mm) Midget Wedge Based LEDs

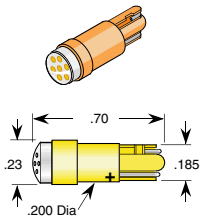
| Subminiature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25¡C) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAlAs**   | 56,79,84,86 | WF150-0UR-005V | 5V | 20 | 115 | 120¡ | Contact Polarity V = DC only Replace WF150 With W150 Narrow Beam (15¡) Intensity 1.6K mcd/52 Ft.Cd @20 mA |
| | 18,37,73,74 | WF150-0UR-014V | 12/14V | 20 | 115 | | |
| | 17, 85 | WF150-0UR-024V | 24V | 15 | 85 | | |
| | 17, 85 | WF150-0UR-028V | 28V | 15 | 85 | | |
| **612nm Super Orange InGaAlP**   | 56,79,84,86 | WF150-0UO-005V | 5V | 20 | 130 | 120¡ | Contact Polarity V = DC only Replace WF150 With W150 Narrow Beam (15¡) Intensity 3.5K mcd@20 mA |
| | 18,37,73,74 | WF150-0UO-014V | 12/14V | 20 | 130 | | |
| | 17, 85 | WF150-0UO-024V | 24V | 15 | 98 | | |
| | 17, 85 | WF150-0UO-028V | 28V | 15 | 98 | | |
| **595nm Super Yellow InGaAlP**   | 56,79,84,86 | WF150-0UY-005V | 5V | 20 | 116 | 120¡ | Contact Polarity V = DC only Replace WF150 With W150 Narrow Beam (15¡) Intensity 3.2K mcd@20 mA |
| | 18,37,73,74 | WF150-0UY-014V | 12/14V | 20 | 116 | | |
| | 17, 85 | WF150-0UY-024V | 24V | 15 | 75 | | |
| | 17, 85 | WF150-0UY-028V | 28V | 15 | 75 | | |
| **8000K Cool White SiC/GaN**   | 56,79,84,86 | WF150-0CW-005V | 5V | 15 | 160 | 120¡ | Contact Polarity V = DC only Replace WF150 With W150 Std. Beam (50¡) Intensity 750 mcd/75 Ft. cd @15 mA |
| | 18,37,73,74 | WF150-0CW-014V | 12/14V | 15 | 160 | | |
| | 17, 85 | WF150-0CW-024V | 24V | 15 | 160 | | |
| | 17, 85 | WF150-0CW-028V | 28V | 15 | 160 | | |
| **570nm Lime Green InGaAlP**   | 56,79,84,86 | WF150-0UG-005V | 5V | 20 | 58 | 120¡ | Contact Polarity V = DC only Replace WF150 With W150 Narrow Beam (12-15¡) Intensity 1K mcd@ 20 mA |
| | 18,37,73,74 | WF150-0UG-014V | 12/14V | 20 | 58 | | |
| | 17, 85 | WF150-0UG-024V | 24V | 15 | 44 | | |
| | 17, 85 | WF150-0UG-028V | 28V | 15 | 44 | | |
| **525nm Aqua Green SiC/GaN**   | 56,79,84,86 | WF150-0AG-005V | 5V | 15 | 400 | 120¡ | Contact Polarity V = DC only Replace WF150 With W150 Narrow Beam (15¡) Intensity 7K mcd/250 Ft.Cd @15 mA |
| | 18,37,73,74 | WF150-0AG-014V | 12/14V | 15 | 400 | | |
| | 17, 85 | WF150-0AG-024V | 24V | 15 | 400 | | |
| | 17, 85 | WF150-0AG-028V | 28V | 15 | 400 | | |
| **470nm Super Blue SiC/GaN**   | 56,79,84,86 | WF150-0PB-005V | 5V | 15 | 125 | 120¡ | Contact Polarity V = DC only Replace WF150 With W150 Std. Beam (15¡) Intensity 2K mcd/60 Ft.Cd @15 mA |
| | 18,37,73,74 | WF150-0PB-014V | 12/14V | 15 | 125 | | |
| | 17, 85 | WF150-0PB-024V | 24V | 15 | 125 | | |
| | 17, 85 | WF150-0PB-028V | 28V | 15 | 125 | | |

All dimensions in inches. For millimeters multiply by 25.4

## Options




**Series:** W150
**PN Example:** W150-0AG-005B



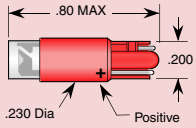
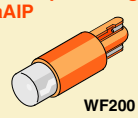
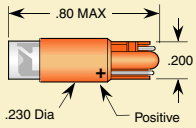
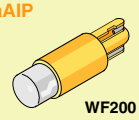
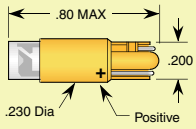
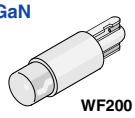
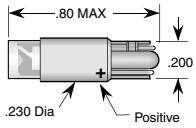
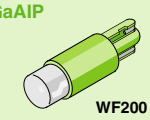
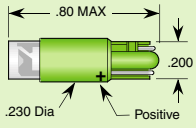
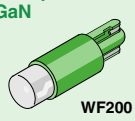
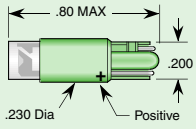
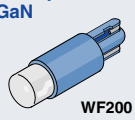
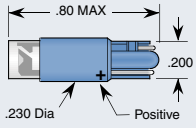

**Series:** W156
**PN Example:** W156-0UY-005B

Log # 122C Rev 09-2000


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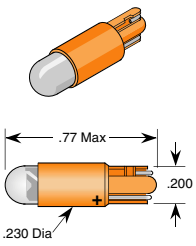
23105 Kashiwa Court, Torrance, CA 90505
Phone: (800) 579-4875 or (310) 534-1505
Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: www.ledtronics.com

# T1-3/4 (5mm) Midget Wedge Based LEDs

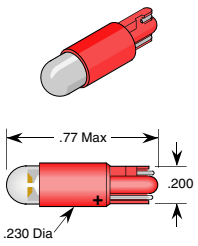
| Subminiature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAlAs**     | 56,79,84,86 | WF200-0UR-005V | 5V | 20 | 115 | 120º | Contact Polarity<br>V = DC only<br>Replace WF200 With W200 Narrow Beam (15º) Intensity 1.6K mcd/52 Ft.Cd @20 mA |
| | 18,37,73,74 | WF200-0UR-014V | 12/14V | 20 | 115 | | |
| | 17, 85 | WF200-0UR-024V | 24V | 15 | 85 | | |
| | 17, 85 | WF200-0UR-028V | 28V | 15 | 85 | | |
| **612nm Super Orange InGaAlP**     | 56,79,84,86 | WF200-0UO-005V | 5V | 20 | 130 | 120º | Contact Polarity<br>V = DC only<br>Replace WF200 With W200 Narrow Beam (15º) Intensity 3.5K mcd@ 20 mA |
| | 18,37,73,74 | WF200-0UO-014V | 12/14V | 20 | 130 | | |
| | 17, 85 | WF200-0UO-024V | 24V | 15 | 98 | | |
| | 17, 85 | WF200-0UO-028V | 28V | 15 | 98 | | |
| **595nm Super Yellow InGaAlP**     | 56,79,84,86 | WF200-0UY-005V | 5V | 20 | 116 | 120º | Contact Polarity<br>V = DC only<br>Replace WF200 With W200 Narrow Beam (15º) Intensity 3.2K mcd@ 20 mA |
| | 18,37,73,74 | WF200-0UY-014V | 12/14V | 20 | 116 | | |
| | 17, 85 | WF200-0UY-024V | 24V | 15 | 75 | | |
| | 17, 85 | WF200-0UY-028V | 28V | 15 | 75 | | |
| **8000K Cool White SiC/GaN**     | 56,79,84,86 | WF200-0CW-005V | 5V | 15 | 160 | 120º | Contact Polarity<br>V = DC only<br>Replace WF200 With W200 Std. Beam (50º) Intensity 750 mcd/75 Ft. cd @15 mA |
| | 18,37,73,74 | WF200-0CW-014V | 12/14V | 15 | 160 | | |
| | 17, 85 | WF200-0CW-024V | 24V | 15 | 160 | | |
| | 17, 85 | WF200-0CW-028V | 28V | 15 | 160 | | |
| **570nm Lime Green InGaAlP**     | 56,79,84,86 | WF200-0UG-005V | 5V | 20 | 58 | 120º | Contact Polarity<br>V = DC only<br>Replace WF200 With W200 Narrow Beam (12-15º) Intensity 1K mcd@ 20 mA |
| | 18,37,73,74 | WF200-0UG-014V | 12/14V | 20 | 58 | | |
| | 17, 85 | WF200-0UG-024V | 24V | 15 | 44 | | |
| | 17, 85 | WF200-0UG-028V | 28V | 15 | 44 | | |
| **525nm Aqua Green SiC/GaN**     | 56,79,84,86 | WF200-0AG-005V | 5V | 15 | 400 | 120º | Contact Polarity<br>V = DC only<br>Replace WF200 With W200 Narrow Beam (15º) Intensity 7K mcd/250 Ft.Cd @15 mA |
| | 18,37,73,74 | WF200-0AG-014V | 12/14V | 15 | 400 | | |
| | 17, 85 | WF200-0AG-024V | 24V | 15 | 400 | | |
| | 17, 85 | WF200-0AG-028V | 28V | 15 | 400 | | |
| **470nm Super Blue SiC/GaN**     | 56,79,84,86 | WF200-0PB-005V | 5V | 15 | 125 | 120º | Contact Polarity<br>V = DC only<br>Replace WF200 With W200 Std. Beam (15º) Intensity 2K mcd/60 Ft.Cd @15 mA |
| | 18,37,73,74 | WF200-0PB-014V | 12/14V | 15 | 125 | | |
| | 17, 85 | WF200-0PB-024V | 24V | 15 | 125 | | |
| | 17, 85 | WF200-0PB-028V | 28V | 15 | 125 | | |

All dimensions in inches. For millimeters multiply by 25.4

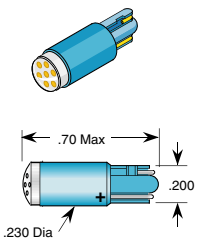
## Options




**Series:** W200
**PN Example:** W200-0UO-005B




**Series:** W202
**PN Example:** W202-0UR-005B




**Series:** W206
**PN Example:** W206-0PB-005B

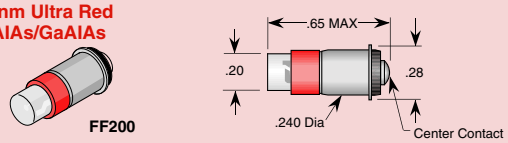
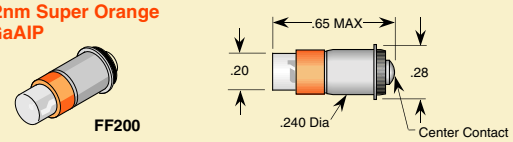
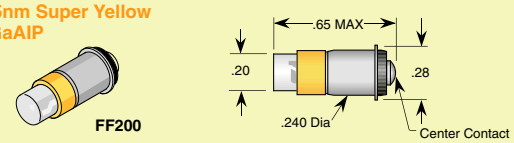
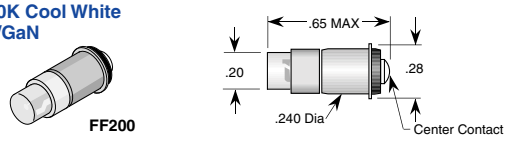
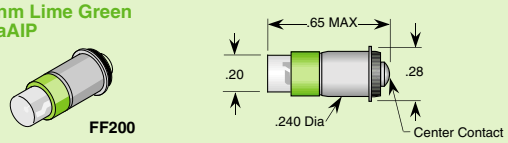
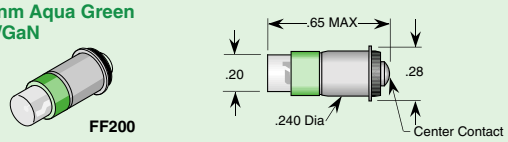
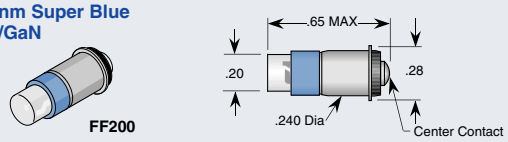
Log # 122D Rev 08-2000


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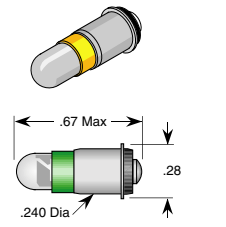
23105 Kashiwa Court, Torrance, CA 90505
Phone: (800) 579-4875 or (310) 534-1505
Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: www.ledtronics.com

# T1-3/4 (5mm) Midget Flange Based LEDs

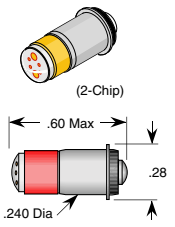
| Subminiature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAlAs**   | 328,345,350 | FF200-0UR-006B | 5/6V | 20 | 115 | 120º | Center Contact Polarity B = BiPolar AC/DC<br>Replace FF200 With F200 Narrow Beam (15º) Intensity 1.6K mcd/52 Ft.Cd @20 mA |
| | 330,382,394 | FF200-0UR-014B | 12/14V | 20 | 115 | | |
| | 327,376,387 | FF200-0UR-024B | 24V | 15 | 85 | | |
| | 327,376,387 | FF200-0UR-028B | 28V | 15 | 85 | | |
| **612nm Super Orange InGaAlP**   | 328,345,350 | FF200-0UO-006B | 5/6V | 20 | 130 | 120º | Center Contact Polarity B = BiPolar AC/DC<br>Replace FF200 With F200 Narrow (15º) Beam Intensity 3.5K mcd@20 mA |
| | 330,382,394 | FF200-0UO-014B | 12/14V | 20 | 130 | | |
| | 327,376,387 | FF200-0UO-024B | 24V | 15 | 98 | | |
| | 327,376,387 | FF200-0UO-028B | 28V | 15 | 98 | | |
| **595nm Super Yellow InGaAlP**   | 328,345,350 | FF200-0UY-006B | 5/6V | 20 | 116 | 120º | Center Contact Polarity B = BiPolar AC/DC<br>Replace FF200 With F200 Narrow (15º) Beam Intensity 3.2K mcd@20 mA |
| | 330,382,394 | FF200-0UY-014B | 12/14V | 20 | 116 | | |
| | 327,376,387 | FF200-0UY-024B | 24V | 15 | 75 | | |
| | 327,376,387 | FF200-0UY-028B | 28V | 15 | 75 | | |
| **8000K Cool White SiC/GaN**   | 328,345,350 | FF200-0CW-006B | 5V | 15 | 160 | 120º | Center Contact Polarity B = BiPolar AC/DC<br>Replace FF200 With F200 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd |
| | 330,382,394 | FF200-0CW-014B | 12/14V | 15 | 160 | | |
| | 327,376,387 | FF200-0CW-024B | 24V | 15 | 160 | | |
| | 327,376,387 | FF200-0CW-028B | 28V | 15 | 160 | | |
| **570nm Lime Green InGaAlP**   | 328,345,350 | FF200-0UG-006B | 5/6V | 20 | 58 | 120º | Center Contact Polarity B = BiPolar AC/DC<br>Replace FF200 With F200 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA |
| | 330,382,394 | FF200-0UG-014B | 12/14V | 20 | 58 | | |
| | 327,376,387 | FF200-0UG-024B | 24V | 15 | 44 | | |
| | 327,376,387 | FF200-0UG-028B | 28V | 15 | 44 | | |
| **525nm Aqua Green SiC/GaN**   | 328,345,350 | FF200-0AG-006B | 5/6V | 15 | 400 | 120º | Center Contact Polarity B = BiPolar AC/DC<br>Replace FF200 With F200 Narrow (15º) Beam Intensity 7K mcd/250 Ft.Cd |
| | 330,382,394 | FF200-0AG-014B | 12/14V | 15 | 400 | | |
| | 327,376,387 | FF200-0AG-024B | 24V | 15 | 400 | | |
| | 327,376,387 | FF200-0AG-028B | 28V | 15 | 400 | | |
| **470nm Super Blue SiC/GaN**   | 328,345,350 | FF200-0PB-006B | 5/6V | 15 | 125 | 120º | Center Contact Polarity B = BiPolar AC/DC<br>Replace FF200 With F200 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd |
| | 330,382,394 | FF200-0PB-014B | 12/14V | 15 | 125 | | |
| | 327,376,387 | FF200-0PB-024B | 24V | 15 | 125 | | |
| | 327,376,387 | FF200-0PB-028B | 28V | 15 | 125 | | |

All dimensions in inches. For millimeters multiply by 25.4

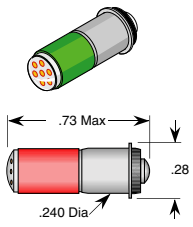
## Options



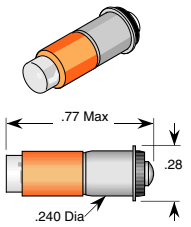

**Series:** F200
**PN Example:** F200-0AG-006B




**Series:** F206
**PN Example:** F206-0UR-006B




**Series:** FL206
**PN Example:** FL206-0UR-006B




**Series:** FFL200
**PN Example:** FFL200-0UO-006B



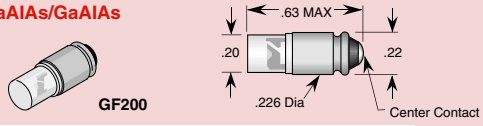
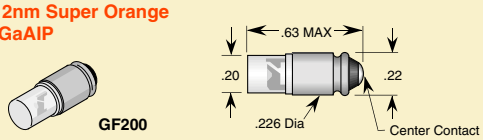
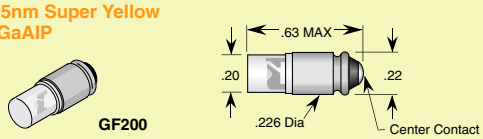
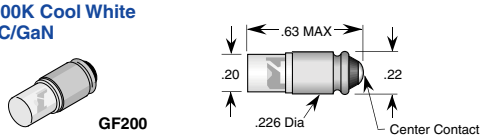
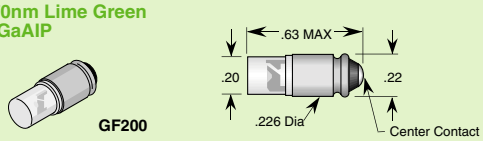
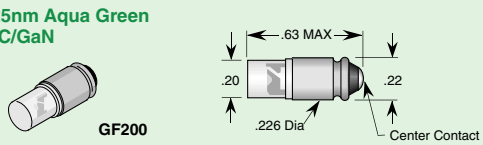
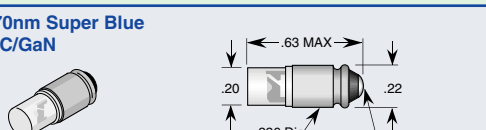
Log # 122Dd Rev 09-2000


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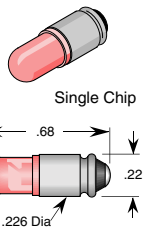
23105 Kashiwa Court, Torrance, CA 90505
Phone: (800) 579-4875 or (310) 534-1505
Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: www.ledtronics.com

# T1-3/4 (5mm) Midget Groove Based LEDs

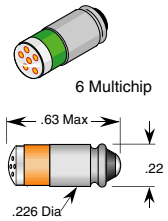
| Subminiature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAlAs**   | 337,379,398 | GF200-0UR-006B | 5/6V | 20 | 115 | 120º | Center Contact Polarity B = BiPolar AC/DC<br>Replace GF200 With G200 Narrow (15º) Beam Intensity 1.6K mcd/52 Ft.Cd @20 mA |
| | 386 | GF200-0UR-014B | 12/14V | 20 | 115 | | |
| | 334,388 | GF200-0UR-024B | 24V | 15 | 85 | | |
| | 334,388 | GF200-0UR-028B | 28V | 15 | 85 | | |
| **612nm Super Orange InGaAlP**   | 337,379,398 | GF200-0UO-006B | 5/6V | 20 | 130 | 120º | Center Contact Polarity B = BiPolar AC/DC<br>Replace GF200 With G200 Narrow (15º) Beam Intensity 3.5K mcd@20 mA |
| | 386 | GF200-0UO-014B | 12/14V | 20 | 130 | | |
| | 334,388 | GF200-0UO-024B | 24V | 15 | 98 | | |
| | 334,388 | GF200-0UO-028B | 28V | 15 | 98 | | |
| **595nm Super Yellow InGaAlP**   | 337,379,398 | GF200-0UY-006B | 5/6V | 20 | 116 | 120º | Center Contact Polarity B = BiPolar AC/DC<br>Replace GF200 With G200 Narrow (15º) Beam Intensity 3.2K mcd@20 mA |
| | 386 | GF200-0UY-014B | 12/14V | 20 | 116 | | |
| | 334,388 | GF200-0UY-024B | 24V | 15 | 75 | | |
| | 334,388 | GF200-0UY-028B | 28V | 15 | 75 | | |
| **8000K Cool White SiC/GaN**   | 337,379,398 | GF200-0CW-006B | 5/6V | 15 | 160 | 120º | Center Contact Polarity B = BiPolar AC/DC<br>Replace GF200 With G200 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd |
| | 386 | GF200-0CW-014B | 12/14V | 15 | 160 | | |
| | 334,388 | GF200-0CW-024B | 24V | 15 | 160 | | |
| | 334,388 | GF200-0CW-028B | 28V | 15 | 160 | | |
| **570nm Lime Green InGaAlP**   | 337,379,398 | GF200-0UG-006B | 5/6V | 20 | 58 | 120º | Center Contact Polarity B = BiPolar AC/DC<br>Replace GF200 With G200 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA |
| | 386 | GF200-0UG-014B | 12/14V | 20 | 58 | | |
| | 334,388 | GF200-0UG-024B | 24V | 15 | 44 | | |
| | 334,388 | GF200-0UG-028B | 28V | 15 | 44 | | |
| **525nm Aqua Green SiC/GaN**   | 337,379,398 | GF200-0AG-006B | 5/6V | 15 | 400 | 120º | Center Contact Polarity B = BiPolar AC/DC<br>Replace GF200 With G200 Narrow (15º) Beam Intensity 7Kmcd/250 Ft.Cd |
| | 386 | GF200-0AG-014B | 12/14V | 15 | 400 | | |
| | 334,388 | GF200-0AG-024B | 24V | 15 | 400 | | |
| | 334,388 | GF200-0AG-028B | 28V | 15 | 400 | | |
| **470nm Super Blue SiC/GaN**   | 337,379,398 | GF200-0PB-006B | 5/6V | 15 | 125 | 120º | Center Contact Polarity B = BiPolar AC/DC<br>Replace GF200 With G200 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd |
| | 386 | GF200-0PB-014B | 12/14V | 15 | 125 | | |
| | 334,388 | GF200-0PB-024B | 24V | 15 | 125 | | |
| | 334,388 | GF200-0PB-028B | 28V | 15 | 125 | | |

All dimensions in inches. For millimeters multiply by 25.4

## Options




**Series:** G200
**PN Example:** G200-0UR-028B



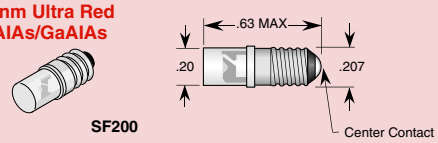
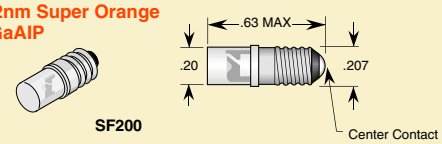
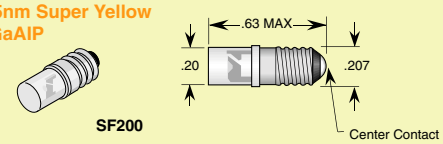
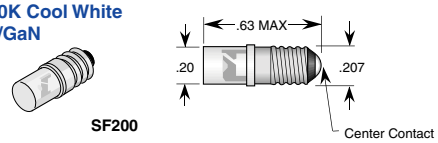
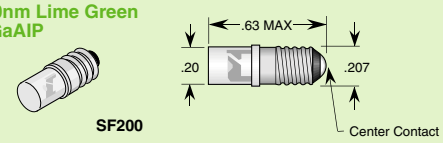
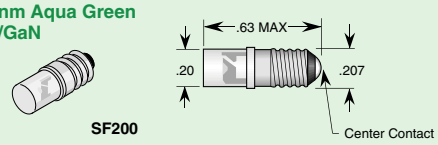
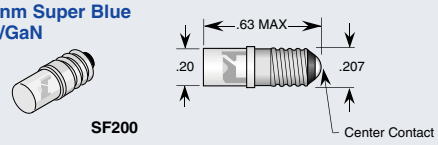

**Series:** G206
**PN Example:** G206-0UO-028B

Log # 122E Rev 09-2000


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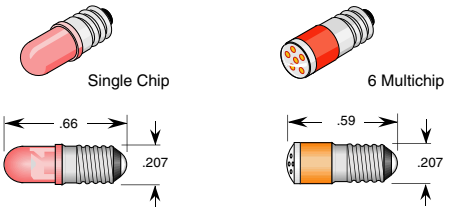
23105 Kashiwa Court, Torrance, CA 90505
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Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: www.ledtronics.com

# T1-3/4 (5mm) Midget Screw Based LEDs

| Subminiature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAlAs**   | 378,1768,1775 | SF200-0UR-005P | 5V | 20 | 115 | 120º | Center Contact Polarity P = Positive N = Negative<br>Replace SF200 With S200 Narrow (15º) Beam Intensity 1.6K mcd/52 Ft.Cd @20 mA |
| | 336,383 | SF200-0UR-014P | 12/14V | 20 | 115 | | |
| | 342 | SF200-0UR-024P | 24V | 15 | 85 | | |
| | 335,342,369,399 | SF200-0UR-028P | 28V | 15 | 85 | | |
| **612nm Super Orange InGaAlP**   | 378,1768,1775 | SF200-0UO-005P | 5V | 20 | 130 | 120º | Center Contact Polarity P = Positive N = Negative<br>Replace SF200 With S200 Narrow (15º) Beam Intensity 3.5K mcd@20 mA |
| | 336,383 | SF200-0UO-014P | 12/14V | 20 | 130 | | |
| | 342 | SF200-0UO-024P | 24V | 15 | 98 | | |
| | 335,342,369,399 | SF200-0UO-028P | 28V | 15 | 98 | | |
| **595nm Super Yellow InGaAlP**   | 378,1768,1775 | SF200-0UY-005P | 5V | 20 | 116 | 120º | Center Contact Polarity P = Positive N = Negative<br>Replace SF200 With S200 Narrow (15º) Beam Intensity 3.2K mcd@20 mA |
| | 336,383 | SF200-0UY-014P | 12/14V | 20 | 116 | | |
| | 342 | SF200-0UY-024P | 24V | 15 | 75 | | |
| | 335,342,369,399 | SF200-0UY-028P | 28V | 15 | 75 | | |
| **8000K Cool White SiC/GaN**   | 378,1768,1775 | SF200-0CW-005P | 5/6V | 15 | 160 | 120º | Center Contact Polarity P = Positive N = Negative<br>Replace SF200 With S200 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd |
| | 336,383 | SF200-0CW-014P | 12/14V | 15 | 160 | | |
| | 342 | SF200-0CW-024P | 24V | 15 | 160 | | |
| | 335,342,369,399 | SF200-0CW-028P | 28V | 15 | 160 | | |
| **570nm Lime Green InGaAlP**   | 378,1768,1775 | SF200-0UG-005P | 5V | 20 | 58 | 120º | Center Contact Polarity P = Positive N = Negative<br>Replace SF200 With S200 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA |
| | 336,383 | SF200-0UG-014P | 12/14V | 20 | 58 | | |
| | 342 | SF200-0UG-024P | 24V | 15 | 44 | | |
| | 335,342,369,399 | SF200-0UG-028P | 28V | 15 | 44 | | |
| **525nm Aqua Green SiC/GaN**   | 378,1768,1775 | SF200-0AG-005P | 5V | 15 | 400 | 120º | Center Contact Polarity P = Positive N = Negative<br>Replace SF200 With S200 Narrow (15º) Beam Intensity 7Kmcd/250 Ft.Cd |
| | 336,383 | SF200-0AG-014P | 12/14V | 15 | 400 | | |
| | 342 | SF200-0AG-024P | 24V | 15 | 400 | | |
| | 335,342,369,399 | SF200-0AG-028P | 28V | 15 | 400 | | |
| **470nm Super Blue SiC/GaN**   | 378,1768,1775 | SF200-0PB-005P | 5V | 15 | 125 | 120º | Center Contact Polarity P = Positive N = Negative<br>Replace SF200 With S200 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd |
| | 336,383 | SF200-0PB-014P | 12/14V | 15 | 125 | | |
| | 342 | SF200-0PB-024P | 24V | 15 | 125 | | |
| | 335,342,369,399 | SF200-0PB-028P | 28V | 15 | 125 | | |

All dimensions in inches. For millimeters multiply by 25.4

## Options




**Series:** S200
**PN Example:** S200-0UR-024P

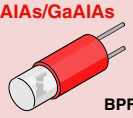
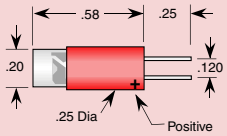
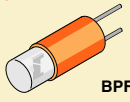
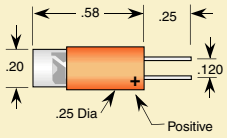
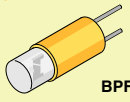
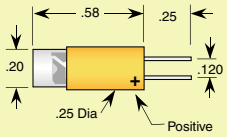
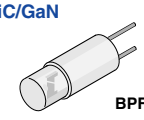
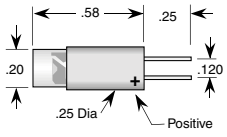
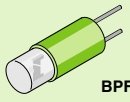
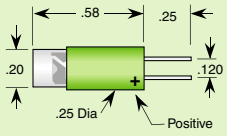
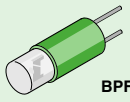
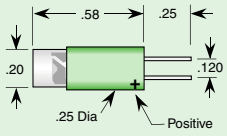
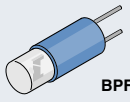
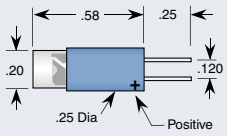
**Series:** S206
**PN Example:** S206-0UY-024B

Log # 122F Rev 09-2000

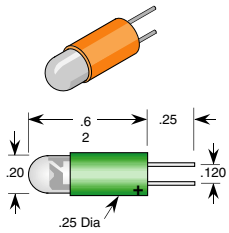

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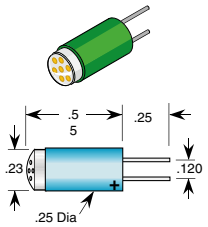
# T1-3/4 (5mm) Midget Bi-Pin Based LEDs

| Subminiature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAlAs**     | 7328 | BPF200-0UR-005V | 5V | 20 | 115 | 120º | Contact Polarity V = DC only Replace BPF200 With BP200 Narrow (15º) Beam Intensity 1.6K mcd/52 Ft.Cd @20 mA |
| | 7371 | BPF200-0UR-012V | 12V | 20 | 115 | | |
| | 7330,7382 | BPF200-0UR-014V | 12/14V | 20 | 115 | | |
| | 7327,7387 | BPF200-0UR-024V | 24V | 15 | 85 | | |
| | 7327,7387 | BPF200-0UR-028V | 28V | 15 | 85 | | |
| **612nm Super Orange InGaAlP**     | 7328 | BPF200-0UO-005V | 5V | 20 | 130 | 120º | Contact Polarity V = DC only Replace BPF200 With BP200 Narrow (15º) Beam Intensity 3.5K mcd@20 mA |
| | 7371 | BPF200-0UO-012V | 12V | 20 | 130 | | |
| | 7330,7382 | BPF200-0UO-014V | 12/14V | 20 | 130 | | |
| | 7327,7387 | BPF200-0UO-024V | 24V | 15 | 98 | | |
| | 7327,7387 | BPF200-0UO-028V | 28V | 15 | 98 | | |
| **595nm Super Yellow InGaAlP**     | 7328 | BPF200-0UY-005V | 5V | 20 | 116 | 120º | Contact Polarity V = DC only Replace BPF200 With BP200 Narrow (15º) Beam Intensity 3.2K mcd@20 mA |
| | 7371 | BPF200-0UY-012V | 12V | 20 | 116 | | |
| | 7330,7382 | BPF200-0UY-014V | 12/14V | 20 | 116 | | |
| | 7327,7387 | BPF200-0UY-024V | 24V | 15 | 75 | | |
| | 7327,7387 | BPF200-0UY-028V | 28V | 15 | 75 | | |
| **8000K Cool White SiC/GaN**     | 7328 | BPF200-0CW-005V | 5V | 15 | 160 | 120º | Contact Polarity V = DC only Replace BPF200 With BP200 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd |
| | 7371 | BPF200-0CW-012V | 12V | 15 | 160 | | |
| | 7330,7382 | BPF200-0CW-014V | 12/14V | 15 | 160 | | |
| | 7327,7387 | BPF200-0CW-024V | 24V | 15 | 160 | | |
| | 7327,7387 | BPF200-0CW-028V | 28V | 15 | 160 | | |
| **570nm Lime Green InGaAlP**     | 7328 | BPF200-0UG-005V | 5V | 20 | 58 | 120º | Contact Polarity V = DC only Replace BPF200 With BP200 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA |
| | 7371 | BPF200-0UG-012V | 12V | 20 | 58 | | |
| | 7330,7382 | BPF200-0UG-014V | 12/14V | 20 | 58 | | |
| | 7327,7387 | BPF200-0UG-024V | 24V | 15 | 44 | | |
| | 7327,7387 | BPF200-0UG-028V | 28V | 15 | 44 | | |
| **525nm Aqua Green SiC/GaN**     | 7328 | BPF200-0AG-005V | 5V | 15 | 400 | 120º | Contact Polarity V = DC only Replace BPF200 With BP200 Narrow (15º) Beam Intensity 7Kmcd/250 Ft.Cd |
| | 7371 | BPF200-0AG-012V | 12V | 15 | 400 | | |
| | 7330,7382 | BPF200-0AG-014V | 12/14V | 15 | 400 | | |
| | 7327,7387 | BPF200-0AG-024V | 24V | 15 | 400 | | |
| | 7327,7387 | BPF200-0AG-028V | 28V | 15 | 400 | | |
| **470nm Super Blue SiC/GaN**     | 7328 | BPF200-0PB-005V | 5V | 15 | 125 | 120º | Contact Polarity V = DC only Replace BPF200 With BP200 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd |
| | 7371 | BPF200-0PB-012V | 12V | 15 | 125 | | |
| | 7330,7382 | BPF200-0PB-014V | 12/14V | 15 | 125 | | |
| | 7327,7387 | BPF200-0PB-024V | 24V | 15 | 125 | | |
| | 7327,7387 | BPF200-0PB-028V | 28V | 15 | 125 | | |

All dimensions in inches. For millimeters multiply by 25.4




**Series:** BP200
**PN Example:** BP200-0AG-014V




**Series:** BP203
**PN Example:** BP203-1UB-014V

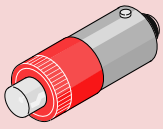
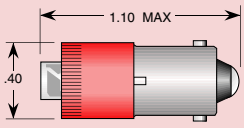
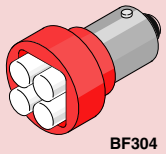
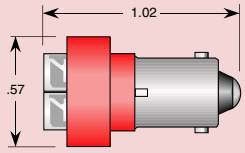
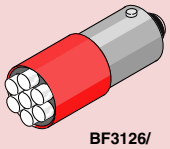
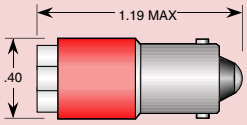
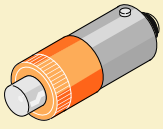
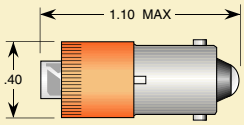
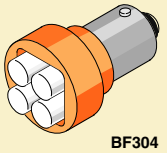
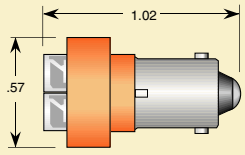
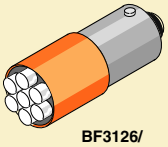
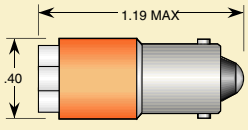
Log # 122G Rev 08-2000


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Website: www.ledtronics.com

# T3-1/4 (9mm) Miniature Based LED Lamps

| Miniature Packages | | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAs**  BF321 | **T3-1/4 (9mm) Miniature Bayonet**   | 6MB, 44, 47, 755 | BF321-0UR-006B | 5/6V | 20 | 115 | 120º | Center Contact Polarity B = Bipolar AC/DC A = AC only |
| | | 12MB, 756 | BF321-0UR-014B | 12/14V | 20 | 115 | | |
| | | 24MB, | BF321-0UR-024B | 24V | 20 | 115 | | |
| | | 313,757,1819,1829 | BF321-0UR-028B | 28V | 20 | 115 | | |
| | | 48MB | BF321-0UR-048B | 48V | 12 | 65 | | |
| | | 60MB,1835 | BF321-0UR-060B | 60V | 12 | 65 | | Replace BF321 With B321 for Narrow Beam (15º) 1.6K mcd/52 Ft.Cd @ 20mA |
| | | 120MB, NE51H | BF321-0UR-120A | 120VAC | 10 | 50 | | |
| | | | BF321-0UR-130B | 130V | 8 | 40 | | |
| **660nm Ultra Red GaAlAs/GaAs**  BF304 | **T3-1/4 (9mm) Miniature Bayonet LED Cluster**   | 6MB, 44, 47, 755 | BF304-0UR-006B | 5/6V | 80 | 460 | 120º | Center Contact Polarity B = Bipolar AC/DC A = AC only |
| | | 12MB, 756 | BF304-0UR-014B | 12/14V | 40 | 460 | | |
| | | 24MB, | BF304-0UR-024B | 24V | 20 | 460 | | |
| | | 313,757,1819,1829 | BF304-0UR-028B | 28V | 20 | 460 | | |
| | | 48MB | BF304-0UR-048B | 48V | 12 | 260 | | |
| | | 60MB,1835 | BF304-0UR-060B | 60V | 12 | 260 | | Replace BF304 With B304 for Narrow Beam (15º) 6.4K mcd/208 Ft.Cd @ 20mA |
| | | 120MB, NE51H | BF304-0UR-120A | 120VAC | 10 | 200 | | |
| | | | BF304-0UR-130B | 130V | 8 | 160 | | |
| **660nm Ultra Red GaAlAs/GaAs**  BF3126/ BF3127 | **T3-1/4 (9mm) Miniature Bayonet LED Cluster**   | 6MB, 44, 47, 755 | BF3126-0UR-006B | 5/6V | 120 | 600 | 120º | Center Contact Polarity B = Bipolar AC/DC A = AC only |
| | | 12MB, 756 | BF3126-0UR-014B | 12/14V | 40 | 600 | | |
| | | 24MB, | BF3127-0UR-024B | 24V | 20 | 700 | | |
| | | 313,757,1819,1829 | BF3127-0UR-028B | 28V | 20 | 700 | | |
| | | 48MB | BF3127-0UR-048B | 48V | 12 | 230 | | |
| | | 60MB,1835 | BF3127-0UR-060B | 60V | 12 | 230 | | Replace BF3126/3127 With B3126/3127 for Narrow Beam (65º) 1.3K mcd/210 Ft.Cd @ 20mA |
| | | 120MB, NE51H | BF3127-0UR-120A | 120VAC | 10 | 160 | | |
| | | | BF3127-0UR-130B | 130V | 8 | 140 | | |
| **612nm Super Orange InGaAlP**  BF321 | **T3-1/4 (9mm) Miniature Bayonet**   | 6MB, 44, 47, 755 | BF321-0UO-006B | 5/6V | 20 | 130 | 120º | Center Contact Polarity B = Bipolar AC/DC A = AC only |
| | | 12MB, 756 | BF321-0UO-014B | 12/14V | 20 | 130 | | |
| | | 24MB, | BF321-0UO-024B | 24V | 20 | 130 | | |
| | | 313,757,1819,1829 | BF321-0UO-028B | 28V | 20 | 130 | | |
| | | 48MB | BF321-0UO-048B | 48V | 12 | 78 | | |
| | | 60MB,1835 | BF321-0UO-060B | 60V | 12 | 78 | | Replace BF321 With B321 for Narrow Beam (15º) 3.5 K mcd@ 20mA |
| | | 120MB, NE51H | BF321-0UO-120A | 120VAC | 10 | 65 | | |
| | | | BF321-0UO-130B | 130V | 8 | 52 | | |
| **612nm Super Orange InGaAlP**  BF304 | **T3-1/4 (9mm) Miniature Bayonet LED Cluster**   | 6MB, 44, 47, 755 | BF304-0UO-006B | 5/6V | 80 | 520 | 120º | Center Contact Polarity B = Bipolar AC/DC A = AC only |
| | | 12MB, 756 | BF304-0UO-014B | 12/14V | 40 | 520 | | |
| | | 24MB, | BF304-0UO-024B | 24V | 20 | 520 | | |
| | | 313,757,1819,1829 | BF304-0UO-028B | 28V | 20 | 520 | | |
| | | 48MB | BF304-0UO-048B | 48V | 12 | 312 | | |
| | | 60MB,1835 | BF304-0UO-060B | 60V | 12 | 312 | | Replace BF304 With B304 for Narrow Beam (15º) 14 K mcd@ 20mA |
| | | 120MB, NE51H | BF304-0UO-120A | 120VAC | 10 | 260 | | |
| | | | BF304-0UO-130B | 130V | 8 | 208 | | |
| **612nm Super Orange InGaAlP**  BF3126/ BF3127 | **T3-1/4 (9mm) Miniature Bayonet LED Cluster**   | 6MB, 44, 47, 755 | BF3126-0UO-006B | 5/6V | 120 | 510 | 120º | Center Contact Polarity B = Bipolar AC/DC A = AC only |
| | | 12MB, 756 | BF3126-0UO-014B | 12/14V | 40 | 510 | | |
| | | 24MB, | BF3127-0UO-024B | 24V | 20 | 595 | | |
| | | 313,757,1819,1829 | BF3127-0UO-028B | 28V | 20 | 595 | | |
| | | 48MB | BF3127-0UO-048B | 48V | 12 | 357 | | |
| | | 60MB,1835 | BF3127-0UO-060B | 60V | 12 | 357 | | Replace BF3126/3127 With B3126/3127 for Medium Beam (50º) 2.45 K mcd @ 20mA |
| | | 120MB, NE51H | BF3127-0UO-120A | 120VAC | 10 | 298 | | |
| | | | BF3127-0UO-130B | 130V | 8 | 238 | | |

All dimensions in inches. For millimeters multiply by 25.4

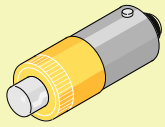
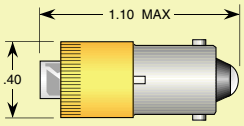
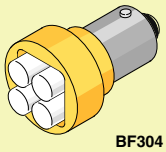
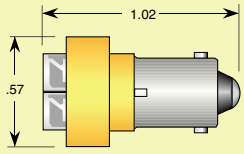
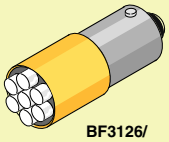
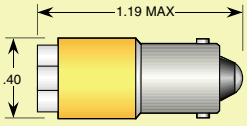
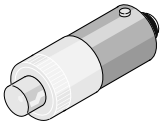
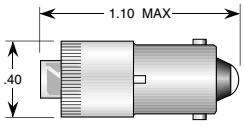
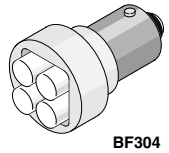
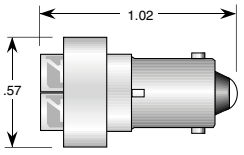
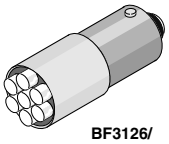
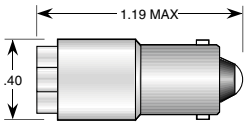
Log # 122H Rev 10-2000


LEDTRONICS, INC.
THE FUTURE OF LIGHT

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# T3-1/4 (9mm) Miniature Based LED Lamps

| Miniature Packages | | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) | | | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|---|
| | | | | Voltage V typ | Current mA typ | Intensity mcd | | |
| 595nm Super Yellow InGaAlP | T3-1/4 (9mm) Miniature Bayonet | 6MB, 44, 47, 755 | BF321-0UY-006B | 5/6V | 20 | 116 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only<br><br>Replace BF321 With B321 for Narrow Beam (15º) 3.2K mcd@ 20mA |
| <br>BF321 |  | 12MB, 756 | BF321-0UY-014B | 12/14V | 20 | 116 | | |
| | | 24MB, | BF321-0UY-024B | 24V | 20 | 116 | | |
| | | 313,757,1819,1829 | BF321-0UY-028B | 28V | 20 | 116 | | |
| | | 48MB | BF321-0UY-048B | 48V | 12 | 54 | | |
| | | 60MB,1835 | BF321-0UY-060B | 60V | 12 | 54 | | |
| | | 120MB, NE51H | BF321-0UY-120A | 120VAC | 10 | 39 | | |
| | | | BF321-0UY-130B | 130V | 8 | 24 | | |
| 595nm Super Yellow InGaAlP | T3-1/4 (9mm) Miniature Bayonet LED Cluster | 6MB, 44, 47, 755 | BF304-0UY-006B | 5/6V | 80 | 464 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only<br><br>Replace BF304 With B304 for Narrow Beam (15º) 12.8K mcd@ 20mA |
| <br>BF304 |  | 12MB, 756 | BF304-0UY-014B | 12/14V | 40 | 464 | | |
| | | 24MB, | BF304-0UY-024B | 24V | 20 | 464 | | |
| | | 313,757,1819,1829 | BF304-0UY-028B | 28V | 20 | 464 | | |
| | | 48MB | BF304-0UY-048B | 48V | 12 | 216 | | |
| | | 60MB,1835 | BF304-0UY-060B | 60V | 12 | 216 | | |
| | | 120MB, NE51H | BF304-0UY-120A | 120VAC | 10 | 156 | | |
| | | | BF304-0UY-130B | 130V | 8 | 96 | | |
| 595nm Super Yellow InGaAlP | T3-1/4 (9mm) Miniature Bayonet LED Cluster | 6MB, 44, 47, 755 | BF3126-0UY-006B | 5/6V | 120 | 192 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only<br><br>Replace BF3126/3127 With B3126/3127 for Medium Beam (50º) 7K mcd @ 20mA |
| <br>BF3126/<br>BF3127 |  | 12MB, 756 | BF3126-0UY-014B | 12/14V | 40 | 192 | | |
| | | 24MB, | BF3127-0UY-024B | 24V | 20 | 224 | | |
| | | 313,757,1819,1829 | BF3127-0UY-028B | 28V | 20 | 224 | | |
| | | 48MB | BF3127-0UY-048B | 48V | 12 | 105 | | |
| | | 60MB,1835 | BF3127-0UY-060B | 60V | 12 | 105 | | |
| | | 120MB, NE51H | BF3127-0UY-120A | 120VAC | 10 | 87 | | |
| | | | BF3127-0UY-130B | 130V | 8 | 70 | | |
| 8000K Cool White SiC/GaN | T3-1/4 (9mm) Miniature Bayonet | 6MB, 44, 47, 755 | BF321-0CW-006B | 5/6V | 15 | 160 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only<br><br>Replace BF321 With B321 for Std. Beam (50º) |
| <br>BF321 |  | 12MB, 756 | BF321-0CW-014B | 12/14V | 15 | 160 | | |
| | | 24MB, | BF321-0CW-024B | 24V | 15 | 160 | | |
| | | 313,757,1819,1829 | BF321-0CW-028B | 28V | 15 | 160 | | |
| | | 48MB | BF321-0CW-048B | 48V | 12 | 128 | | |
| | | 60MB,1835 | BF321-0CW-060B | 60V | 12 | 128 | | |
| | | 120MB, NE51H | BF321-0CW-120A | 120VAC | 10 | 106 | | |
| | | | BF321-0CW-130B | 130V | 8 | 85 | | |
| 8000K Cool White SiC/GaN | T3-1/4 (9mm) Miniature Bayonet LED Cluster | 6MB, 44, 47, 755 | BF304-0CW-006B | 5/6V | 60 | 640 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only<br><br>Replace BF304 With B304 for Std. Beam (50º) |
| <br>BF304 |  | 12MB, 756 | BF304-0CW-014B | 12/14V | 30 | 640 | | |
| | | 24MB, | BF304-0CW-024B | 24V | 15 | 640 | | |
| | | 313,757,1819,1829 | BF304-0CW-028B | 28V | 15 | 640 | | |
| | | 48MB | BF304-0CW-48B | 48V | 12 | 512 | | |
| | | 60MB,1835 | BF304-0CW-60B | 60V | 12 | 512 | | |
| | | 120MB, NE51H | BF304-0CW-120A | 120VAC | 10 | 424 | | |
| | | | BF304-0CW-130B | 130V | 8 | 340 | | |
| 8000K Cool White SiC/GaN | T3-1/4 (9mm) Miniature Bayonet LED Cluster | 6MB, 44, 47, 755 | BF3126-0CW-006B | 5/6V | 90 | 900 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only<br><br>Replace BF3126/3127 With B3126/3127 for Std. Beam (50º) |
| <br>BF3126/<br>BF3127 |  | 12MB, 756 | BF3126-0CW-014B | 12/14V | 30 | 900 | | |
| | | 24MB, | BF3126-0CW-024B | 24V | 15 | 900 | | |
| | | 313,757,1819,1829 | BF3127-0CW-028B | 28V | 15 | 1050 | | |
| | | 48MB | BF3127-0CW-048B | 48V | 12 | 840 | | |
| | | 60MB,1835 | BF3127-0CW-060B | 60V | 12 | 840 | | |
| | | 120MB, NE51H | BF3127-0CW-120A | 120VAC | 10 | 700 | | |
| | | | BF3127-0CW-130B | 130V | 8 | 560 | | |

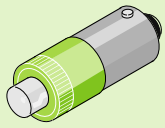
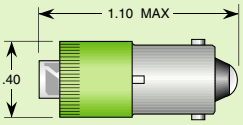
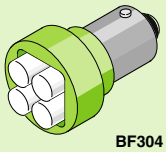
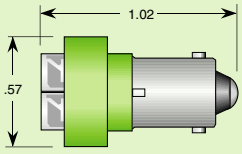
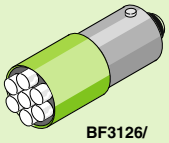
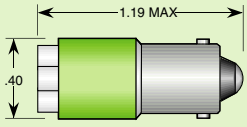
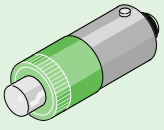
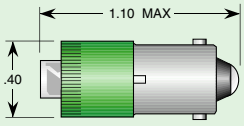
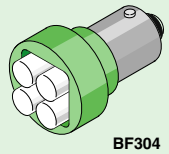
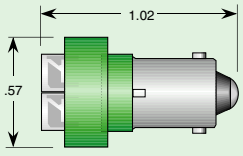
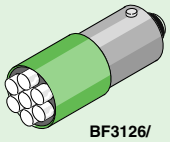
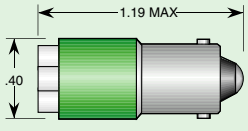
All dimensions in inches. For millimeters multiply by 25.4

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# T3-1/4 (9mm) Miniature Based LED Lamps

| Miniature Packages | | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|---|
| 570nm Lime Green InGaAlP | T3-1/4 (9mm) Miniature Bayonet | 6MB, 44, 47, 755 | BF321-0UG-006B | 5/6V | 20 | 58 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only<br><br>Replace BF321 With B321 for Narrow Beam (12-15º) 1K mcd@ 20mA |
| <br>BF321 |  | 12MB, 756 | BF321-0UG-014B | 12/14V | 20 | 58 | | |
| | | 24MB, 313,757,1819,1829 | BF321-0UG-024B | 24V | 20 | 58 | | |
| | | | BF321-0UG-028B | 28V | 20 | 58 | | |
| | | 48MB | BF321-0UG-048B | 48V | 12 | 35 | | |
| | | 60MB,1835 | BF321-0UG-060B | 60V | 12 | 35 | | |
| | | 120MB, NE51H | BF321-0UG-120A | 120VAC | 10 | 29 | | |
| | | | BF321-0UG-130B | 130V | 8 | 23 | | |
| 570nm Lime Green InGaAlP | T3-1/4 (9mm) Miniature Bayonet LED Cluster | 6MB, 44, 47, 755 | BF304-0UG-006B | 5/6V | 80 | 232 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only<br><br>Replace BF304 With B304 for Narrow Beam (12-15º) 4K mcd@ 20mA |
| <br>BF304 |  | 12MB, 756 | BF304-0UG-014B | 12/14V | 40 | 232 | | |
| | | 24MB, 313,757,1819,1829 | BF304-0UG-024B | 24V | 20 | 232 | | |
| | | | BF304-0UG-028B | 28V | 20 | 232 | | |
| | | 48MB | BF304-0UG-048B | 48V | 12 | 140 | | |
| | | 60MB,1835 | BF304-0UG-060B | 60V | 12 | 140 | | |
| | | 120MB, NE51H | BF304-0UG-120A | 120VAC | 10 | 116 | | |
| | | | BF304-0UG-130B | 130V | 8 | 92 | | |
| 570nm Lime Green InGaAlP | T3-1/4 (9mm) Miniature Bayonet LED Cluster | 6MB, 44, 47, 755 | BF3126-0UG-006B | 5/6V | 120 | 216 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only<br><br>Replace BF3126/3127 With B3126/3127 for Medium Beam (50º) 1.2K mcd @ 20mA |
| <br>BF3126/<br>BF3127 |  | 12MB, 756 | BF3126-0UG-014B | 12/14V | 40 | 216 | | |
| | | 24MB, 313,757,1819,1829 | BF3127-0UG-024B | 24V | 20 | 252 | | |
| | | | BF3127-0UG-028B | 28V | 20 | 252 | | |
| | | 48MB | BF3127-0UG-048B | 48V | 12 | 154 | | |
| | | 60MB,1835 | BF3127-0UG-060B | 60V | 12 | 154 | | |
| | | 120MB, NE51H | BF3127-0UG-120A | 120VAC | 10 | 126 | | |
| | | | BF3127-0UG-130B | 130V | 8 | 100 | | |
| 525nm Aqua Green SiC/GaN | T3-1/4 (9mm) Miniature Bayonet | 6MB, 44, 47, 755 | BF321-0AG-006B | 5/6V | 15 | 400 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only<br><br>Replace BF321 With B321 for Narrow Beam (15º) 7K mcd/250 Ft.Cd @ 15mA |
| <br>BF321 |  | 12MB, 756 | BF321-0AG-014B | 12/14V | 15 | 400 | | |
| | | 24MB, 313,757,1819,1829 | BF321-0AG-024B | 24V | 15 | 400 | | |
| | | | BF321-0AG-028B | 28V | 15 | 400 | | |
| | | 48MB | BF321-0AG-048B | 48V | 12 | 320 | | |
| | | 60MB,1835 | BF321-0AG-060B | 60V | 12 | 320 | | |
| | | 120MB, NE51H | BF321-0AG-120A | 120VAC | 10 | 275 | | |
| | | | BF321-0AG-130B | 130V | 8 | 230 | | |
| 525nm Aqua Green SiC/GaN | T3-1/4 (9mm) Miniature Bayonet LED Cluster | 6MB, 44, 47, 755 | BF304-0AG-006B | 5/6V | 60 | 1600 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only<br><br>Replace BF304 With B304 for Narrow Beam (15º) 28K mcd/1000 Ft.Cd @ 15mA |
| <br>BF304 |  | 12MB, 756 | BF304-0AG-014B | 12/14V | 30 | 1600 | | |
| | | 24MB, 313,757,1819,1829 | BF304-0AG-024B | 24V | 15 | 1600 | | |
| | | | BF304-0AG-028B | 28V | 15 | 1600 | | |
| | | 48MB | BF304-0AG-048B | 48V | 12 | 1280 | | |
| | | 60MB,1835 | BF304-0AG-060B | 60V | 12 | 1280 | | |
| | | 120MB, NE51H | BF304-0AG-120A | 120VAC | 10 | 1100 | | |
| | | | BF304-0AG-130B | 130V | 8 | 920 | | |
| 525nm Aqua Green SiC/GaN | T3-1/4 (9mm) Miniature Bayonet LED Cluster | 6MB, 44, 47, 755 | BF3126-0AG-006B | 5/6V | 90 | 1200 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only<br><br>Replace BF3126/3127 With B3126/3127 for Narrow Beam (15º) 30K mcd/800 Ft.Cd @ 15mA |
| <br>BF3126/<br>BF3127 |  | 12MB, 756 | BF3126-0AG-014B | 12/14V | 30 | 1200 | | |
| | | 24MB, 313,757,1819,1829 | BF3126-0AG-024B | 24V | 15 | 1200 | | |
| | | | BF3127-0AG-028B | 28V | 15 | 1400 | | |
| | | 48MB | BF3127-0AG-048B | 48V | 12 | 1190 | | |
| | | 60MB,1835 | BF3127-0AG-060B | 60V | 12 | 1190 | | |
| | | 120MB, NE51H | BF3127-0AG-120A | 120VAC | 10 | 1050 | | |
| | | | BF3127-0AG-130B | 130V | 8 | 910 | | |

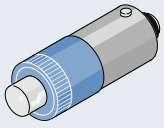
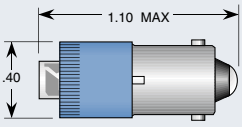
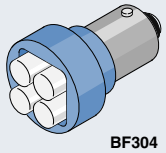
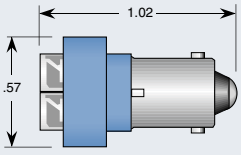
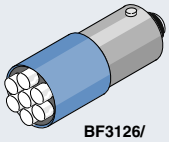
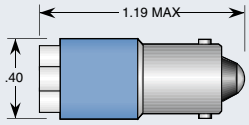
All dimensions in inches. For millimeters multiply by 25.4

Log # 122K Rev 10-2000


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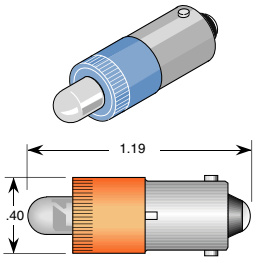
23105 Kashiwa Court, Torrance, CA 90505
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E-mail: webmaster@ledtronics.com
Website: www.ledtronics.com

# T3-1/4 (9mm) Miniature Based LED Lamps

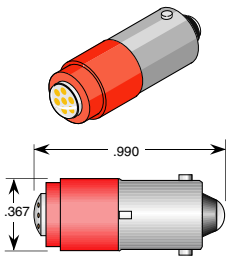
| Miniature Packages | | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) | | | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|---|
| | | | | Voltage V typ | Current mA typ | Intensity mcd | | |
| **470nm Super Blue SiC/GaN** | **T3-1/4 (9mm) Miniature Bayonet** | 6MB, 44, 47, 755 | BF321-0PB-006B | 5/6V | 15 | 116 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only |
|  |  | 12MB, 756 | BF321-0PB-014B | 12/14V | 15 | 116 | | |
| BF321 | | 24MB, | BF321-0PB-024B | 24V | 15 | 116 | | |
| | | 313,757,1819,1829 | BF321-0PB-028B | 28V | 15 | 116 | | |
| | | 48MB | BF321-0PB-048B | 48V | 12 | 84 | | |
| | | 60MB,1835 | BF321-0PB-060B | 60V | 12 | 84 | | Replace BF321 With B321 for Std. Beam (15º) |
| | | 120MB, NE51H | BF321-0PB-120A | 120VAC | 10 | 74 | | |
| | | | BF321-0PB-130B | 130V | 8 | 53 | | |
| **470nm Super Blue SiC/GaN** | **T3-1/4 (9mm) Miniature Bayonet LED Cluster** | 6MB, 44, 47, 755 | BF304-0PB-006B | 5/6V | 60 | 464 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only |
|  |  | 12MB, 756 | BF304-0PB-014B | 12/14V | 30 | 464 | | |
| BF304 | | 24MB, | BF304-0PB-024B | 24V | 15 | 464 | | |
| | | 313,757,1819,1829 | BF304-0PB-028B | 28V | 15 | 464 | | |
| | | 48MB | BF304-0PB-048B | 48V | 12 | 336 | | |
| | | 60MB,1835 | BF304-0PB-060B | 60V | 12 | 336 | | Replace BF304 With B304 for Std. Beam (15º) |
| | | 120MB, NE51H | BF304-0PB-120A | 120VAC | 10 | 296 | | |
| | | | BF304-0PB-130B | 130V | 8 | 212 | | |
| **470nm Super Blue SiC/GaN** | **T3-1/4 (9mm) Miniature Bayonet LED Cluster** | 6MB, 44, 47, 755 | BF3126-0PB-006B | 5/6V | 90 | 360 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only |
|  |  | 12MB, 756 | BF3126-0PB-014B | 12/14V | 30 | 360 | | |
| BF3126/<br>BF3127 | | 24MB, | BF3127-0PB-024B | 24V | 15 | 420 | | |
| | | 313,757,1819,1829 | BF3127-0PB-028B | 28V | 15 | 420 | | |
| | | 48MB | BF3127-0PB-048B | 48V | 12 | 336 | | |
| | | 60MB,1835 | BF3127-0PB-060B | 60V | 12 | 336 | | Replace BF3126/3127 With B3126/3127 for Std. Beam (15º) |
| | | 120MB, NE51H | BF3127-0PB-120A | 120VAC | 10 | 315 | | |
| | | | BF3127-0PB-130B | 130V | 8 | 252 | | |

## Options

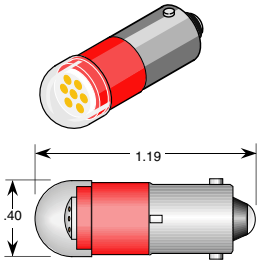
All dimensions in inches. For millimeters multiply by 25.4



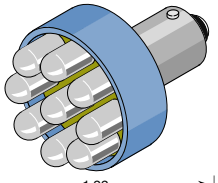

**Series:** B321
**PN Example:** B321-0UO-006B

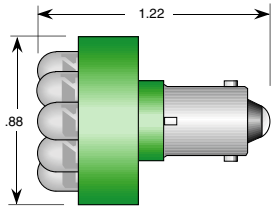



**Series:** BM326
**PN Example:** BM326-0UR-006B

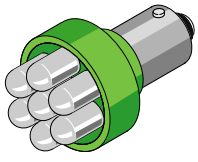


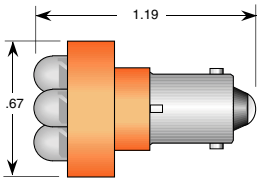

**Series:** B3206
**PN Example:** B3206-0UR-120A



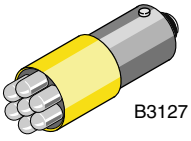



**Series:** BN309
**PN Example:** BN309-0AG-024B

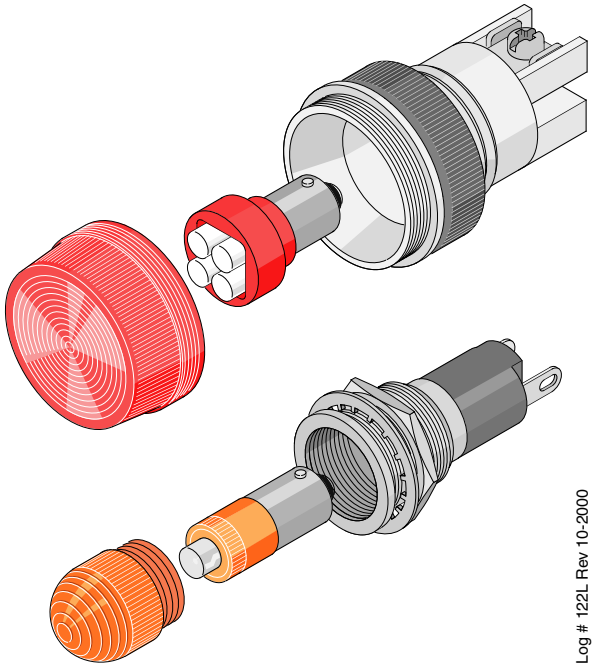





**Series:** BN306/BN307
**PN Example:** BN306-0UO-006B



B3127

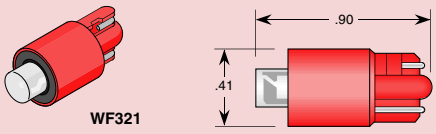
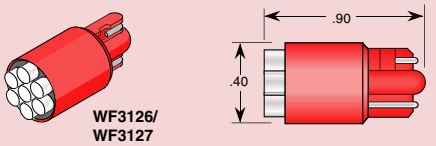
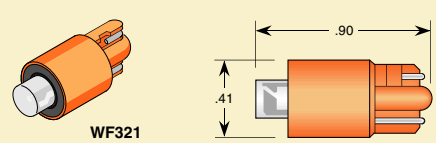
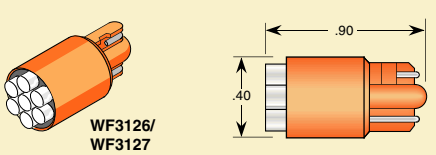
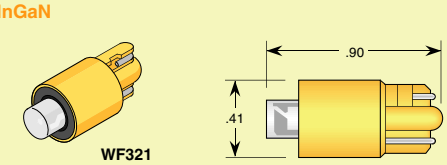
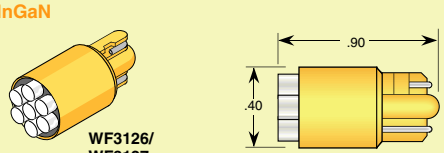
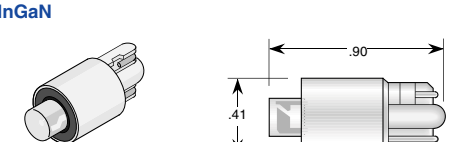


Log # 122L Rev 10-2000


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# T3-1/4 (9mm) Miniature Wedge Based LEDs

| Miniature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAs**   | 159,259,555,1995-7 | WF321-0UR-006B | 5/6V | 20 | 115 | 120º | Contact Polarity B = Bipolar AC/DC A = AC only V = DC only Replace WF321 With W321 for Narrow Beam (15º) 1.6K mcd/52Ft.Cd @ 20mA |
| | 124,658,2080,936 | WF321-0UR-014B | 12/14V | 20 | 115 | | |
| | 656,657,400,464,655 | WF321-0UR-024B | 24V | 20 | 115 | | |
| | 656,657,400,464,655 | WF321-0UR-028B | 28V | 20 | 115 | | |
| | | WF321-0UR-048B | 48V | 12 | 65 | | |
| | | WF321-0UR-120A | 120VAC | 10 | 50 | | |
| | | WF321-0UR-130V | 130V | 8 | 40 | | |
| **660nm Ultra Red GaAlAs/GaAs**   | 159,259,555,1995-7 | WF3126-0UR-006B | 5/6V | 120 | 600 | 120º | Contact Polarity B = Bipolar AC/DC A = AC only V = DC only |
| | 124,658,2080,936 | WF3126-0UR-014B | 12/14V | 40 | 600 | | |
| | 656,657,400,464,655 | WF3127-0UR-024B | 24V | 20 | 700 | | |
| | 656,657,400,464,655 | WF3127-0UR-028B | 28V | 20 | 700 | | |
| | | WF3127-0UR-048B | 48V | 12 | 230 | | |
| | | WF3127-0UR-120A | 120VAC | 10 | 160 | | |
| | | WF3127-0UR-130V | 130V | 8 | 140 | | |
| **612nm Orange InGaAlP**   | 159,259,555,1995-7 | WF321-0UO-006B | 5/6V | 20 | 130 | 120º | Contact Polarity B = Bipolar AC/DC A = AC only V = DC only Replace WF321 With W321 for Narrow Beam (15º) 3.5 K mcd@ 20mA |
| | 124,658,2080,936 | WF321-0UO-014B | 12/14V | 20 | 130 | | |
| | 656,657,400,464,655 | WF321-0UO-024B | 24V | 20 | 130 | | |
| | 656,657,400,464,655 | WF321-0UO-028B | 28V | 20 | 130 | | |
| | | WF321-0UO-048B | 48V | 12 | 78 | | |
| | | WF321-0UO-120A | 120VAC | 10 | 65 | | |
| | | WF321-0UO-130V | 130V | 8 | 52 | | |
| **612nm Orange InGaAlP**   | 159,259,555,1995-7 | WF3126-0UO-006B | 5/6V | 120 | 510 | 120º | Contact Polarity B = Bipolar AC/DC A = AC only V = DC only |
| | 124,658,2080,936 | WF3126-0UO-014B | 12/14V | 40 | 510 | | |
| | 656,657,400,464,655 | WF3127-0UO-024B | 24V | 20 | 595 | | |
| | 656,657,400,464,655 | WF3127-0UO-028B | 28V | 20 | 595 | | |
| | | WF3127-0UO-048B | 48V | 12 | 357 | | |
| | | WF3127-0UO-120A | 120VAC | 10 | 298 | | |
| | | WF3127-0UO-130V | 130V | 8 | 238 | | |
| **595nm Yellow InGaN**   | 159,259,555,1995-7 | WF321-0UY-006B | 5/6V | 20 | 116 | 120º | Contact Polarity B = Bipolar AC/DC A = AC only V = DC only Replace WF321 With W321 for Narrow Beam (15º) 3.2K mcd@ 20mA |
| | 124,658,2080,936 | WF321-0UY-014B | 12/14V | 20 | 116 | | |
| | 656,657,400,464,655 | WF321-0UY-024B | 24V | 20 | 116 | | |
| | 656,657,400,464,655 | WF321-0UY-028B | 28V | 20 | 116 | | |
| | | WF321-0UY-048B | 48V | 12 | 54 | | |
| | | WF321-0UY-120A | 120VAC | 10 | 39 | | |
| | | WF321-0UY-130V | 130V | 8 | 24 | | |
| **595nm Yellow InGaN**   | 159,259,555,1995-7 | WF3126-0UY-006B | 5/6V | 120 | 192 | 120º | Contact Polarity B = Bipolar AC/DC A = AC only V = DC only |
| | 124,658,2080,936 | WF3126-0UY-014B | 12/14V | 40 | 192 | | |
| | 656,657,400,464,655 | WF3127-0UY-024B | 24V | 20 | 224 | | |
| | 656,657,400,464,655 | WF3127-0UY-028B | 28V | 20 | 224 | | |
| | | WF3127-0UY-048B | 48V | 12 | 105 | | |
| | | WF3127-0UY-120A | 120VAC | 10 | 87 | | |
| | | WF3127-0UY-130V | 130V | 8 | 70 | | |
| **8000K Cool White InGaN**   | 159,259,555,1995-7 | WF321-0CW-006B | 5/6V | 15 | 160 | 120º | Contact Polarity B = Bipolar AC/DC A = AC only V = DC only Replace WF321 With W321 for Std. Beam (50º) |
| | 124,658,2080,936 | WF321-0CW-014B | 12/14V | 15 | 160 | | |
| | 656,657,400,464,655 | WF321-0CW-024B | 24V | 15 | 160 | | |
| | 656,657,400,464,655 | WF321-0CW-028B | 28V | 15 | 160 | | |
| | | WF321-0CW-048B | 48V | 12 | 128 | | |
| | | WF321-0CW-120A | 120VAC | 10 | 106 | | |
| | | WF321-0CW-130V | 130V | 8 | 85 | | |

All dimensions in inches. For millimeters multiply by 25.4

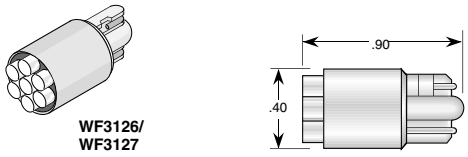
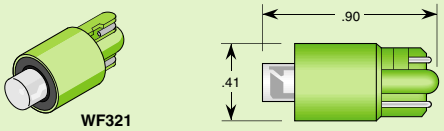
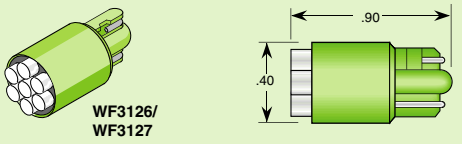
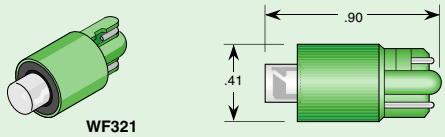
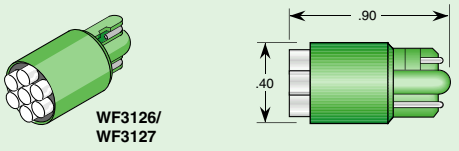
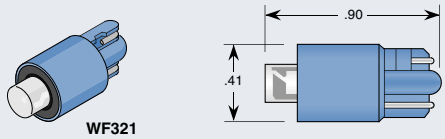
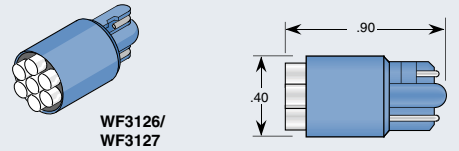
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Website: www.ledtronics.com

# T3-1/4 (9mm) Miniature Wedge Based LEDs

| Miniature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **8000K Cool White InGaN**   WF3126/ WF3127 | 159,259,555,1995-7 | WF3126-0CW-006B | 5/6V | 90 | 900 | 120º | Contact Polarity B = Bipolar AC/DC A = AC only V = DC only |
| | 124,658,2080,936 | WF3126-0CW-014B | 12/14V | 30 | 900 | | |
| | 656,657,400,464,655 | WF3126-0CW-024B | 24V | 15 | 900 | | |
| | 656,657,400,464,655 | WF3127-0CW-028B | 28V | 15 | 1050 | | |
| | | WF3127-0CW-048B | 48V | 12 | 840 | | |
| | | WF3127-0CW-120A | 120VAC | 10 | 700 | | |
| | | WF3127-0CW-130V | 130V | 8 | 560 | | |
| **570nm Lime Green InGaAlP**   WF321 | 159,259,555,1995-7 | WF321-0UG-006B | 5/6V | 20 | 58 | 120º | Contact Polarity B = Bipolar AC/DC A = AC only V = DC only Replace WF321 With W321 for Narrow Beam (12-15º) 1K mcd@ 20mA |
| | 124,658,2080,936 | WF321-0UG-014B | 12/14V | 20 | 58 | | |
| | 656,657,400,464,655 | WF321-0UG-024B | 24V | 20 | 58 | | |
| | 656,657,400,464,655 | WF321-0UG-028B | 28V | 20 | 58 | | |
| | | WF321-0UG-048B | 48V | 12 | 35 | | |
| | | WF321-0UG-120A | 120VAC | 10 | 29 | | |
| | | WF321-0UG-130V | 130V | 8 | 23 | | |
| **570nm Lime Green InGaAlP**   WF3126/ WF3127 | 159,259,555,1995-7 | WF3126-0UG-006B | 5/6V | 120 | 216 | 120º | Contact Polarity B = Bipolar AC/DC A = AC only V = DC only |
| | 124,658,2080,936 | WF3126-0UG-104B | 12/14V | 40 | 216 | | |
| | 656,657,400,464,655 | WF3127-0UG-024B | 24V | 20 | 252 | | |
| | 656,657,400,464,655 | WF3127-0UG-28B | 28V | 20 | 252 | | |
| | | WF3127-0UG-48B | 48V | 12 | 154 | | |
| | | WF3127-0UG-120A | 120VAC | 10 | 126 | | |
| | | WF3127-0UG-130V | 130V | 8 | 100 | | |
| **525nm Super Green InGaN**   WF321 | 159,259,555,1995-7 | WF321-0AG-006B | 5/6V | 15 | 400 | 120º | Contact Polarity B = Bipolar AC/DC A = AC only V = DC only Replace WF321 With W321 for Narrow Beam (15º) 7K mcd/250 Ft.Cd @ 15mA |
| | 124,658,2080,936 | WF321-0AG-014B | 12/14V | 15 | 400 | | |
| | 656,657,400,464,655 | WF321-0AG-024B | 24V | 15 | 400 | | |
| | 656,657,400,464,655 | WF321-0AG-028B | 28V | 15 | 400 | | |
| | | WF321-0AG-048B | 48V | 12 | 320 | | |
| | | WF321-0AG-120A | 120VAC | 10 | 275 | | |
| | | WF321-0AG-130V | 130V | 8 | 230 | | |
| **525nm Super Green InGaN**   WF3126/ WF3127 | 159,259,555,1995-7 | WF3126-0AG-006B | 5/6V | 90 | 1200 | 120º | Contact Polarity B = Bipolar AC/DC A = AC only V = DC only |
| | 124,658,2080,936 | WF3126-0AG-014B | 12/14V | 30 | 1200 | | |
| | 656,657,400,464,655 | WF3126-0AG-024B | 24V | 15 | 1200 | | |
| | 656,657,400,464,655 | WF3127-0AG-028B | 28V | 15 | 1400 | | |
| | | WF3127-0AG-048B | 48V | 12 | 1190 | | |
| | | WF3127-0AG-120A | 120VAC | 10 | 1050 | | |
| | | WF3127-0AG-130V | 130V | 8 | 910 | | |
| **470nm Super Blue InGaN**   WF321 | 159,259,555,1995-7 | WF321-0PB-006B | 5/6V | 15 | 116 | 120º | Contact Polarity B = Bipolar AC/DC A = AC only V = DC only Replace WF321 With W321 for Std. Beam (15º) |
| | 124,658,2080,936 | WF321-0PB-014B | 12/14V | 15 | 116 | | |
| | 656,657,400,464,655 | WF321-0PB-024B | 24V | 15 | 116 | | |
| | 656,657,400,464,655 | WF321-0PB-028B | 28V | 15 | 116 | | |
| | | WF321-0PB-048B | 48V | 12 | 84 | | |
| | | WF321-0PB-120A | 120VAC | 10 | 106 | | |
| | | WF321-0PB-130V | 130V | 8 | 53 | | |
| **470nm Super Blue InGaN**   WF3126/ WF3127 | 159,259,555,1995-7 | WF3126-0PB-006B | 5/6V | 90 | 360 | 120º | Contact Polarity B = Bipolar AC/DC A = AC only V = DC only |
| | 124,658,2080,936 | WF3126-0PB-014B | 12/14V | 30 | 360 | | |
| | 656,657,400,464,655 | WF3127-0PB-024B | 24V | 15 | 420 | | |
| | 656,657,400,464,655 | WF3127-0PB-028B | 28V | 15 | 420 | | |
| | | WF3127-0PB-048B | 48V | 12 | 336 | | |
| | | WF3127-0PB-120A | 120VAC | 10 | 315 | | |
| | | WF3127-0PB-130V | 130V | 8 | 252 | | |

All dimensions in inches. For millimeters multiply by 25.4

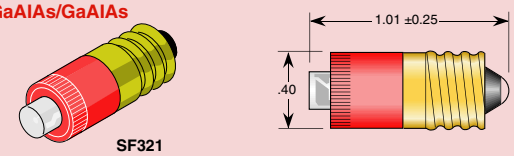
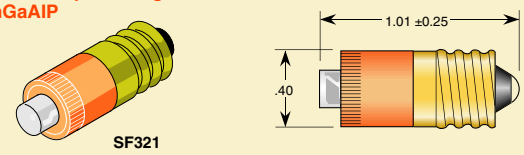
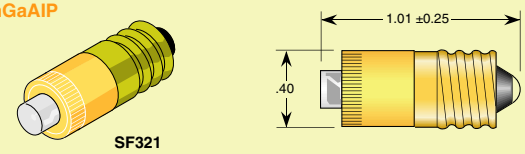
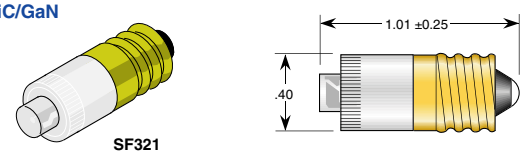
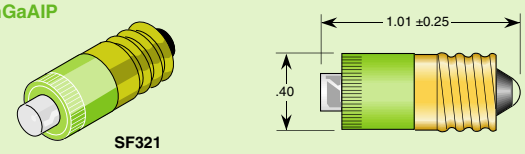
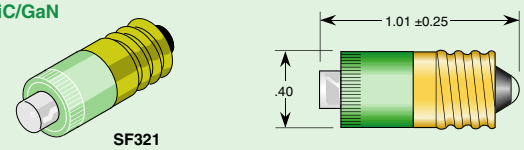
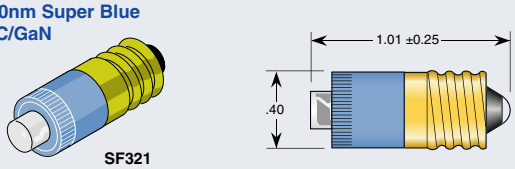
Log # 122LLL Rev 08-2000


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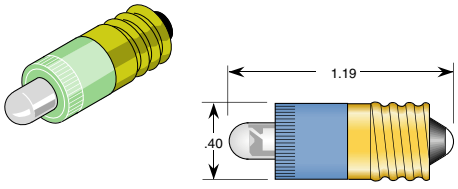
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Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: www.ledtronics.com

# T3-1/4 (9mm) Miniature Screw Based LEDs

| Miniature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAlAs**   | 407,502,3708 | SF321-0UR-006B | 5/6V | 20 | 115 | 120º | Center Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br><br>Replace SF321 With S321 Narrow Beam (15º) Intensity 1.6K mcd/52 Ft.Cd @20 mA |
| | 3724,1446 | SF321-0UR-014B | 12/14V | 20 | 115 | | |
| | 1449,52 | SF321-0UR-024B | 24V | 15 | 85 | | |
| | | SF321-0UR-028B | 28V | 15 | 85 | | |
| | | SF321-0UR-120A | 120VAC | 10 | 50 | | |
| **612nm Super Orange InGaAlP**   | 407,502,3708 | SF321-0UO-006B | 5/6V | 20 | 130 | 120º | Center Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br><br>Replace SF321 With S321 Narrow (15º) Beam Intensity 3.5K mcd@20 mA |
| | 3724,1446 | SF321-0UO-014B | 12/14V | 20 | 130 | | |
| | 1449,52 | SF321-0UO-024B | 24V | 15 | 98 | | |
| | | SF321-0UO-028B | 28V | 15 | 98 | | |
| | | SF321-0UO-120A | 120VAC | 10 | 65 | | |
| **595nm Super Yellow InGaAlP**   | 407,502,3708 | SF321-0UY-006B | 5/6V | 20 | 116 | 120º | Center Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br><br>Replace SF321 With S321 Narrow (15º) Beam Intensity 3.2K mcd@20 mA |
| | 3724,1446 | SF321-0UY-014B | 12/14V | 20 | 116 | | |
| | 1449,52 | SF321-0UY-024B | 24V | 15 | 75 | | |
| | | SF321-0UY-028B | 28V | 15 | 75 | | |
| | | SF321-0UY-120A | 120VAC | 10 | 39 | | |
| **8000K Cool White SiC/GaN**   | 407,502,3708 | SF321-0CW-006B | 5V | 15 | 160 | 120º | Center Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br><br>Replace SF321 With S321 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd |
| | 3724,1446 | SF321-0CW-014B | 12/14V | 15 | 160 | | |
| | 1449,52 | SF321-0CW-024B | 24V | 15 | 160 | | |
| | | SF321-0CW-028B | 28V | 15 | 160 | | |
| | | SF321-0CW-120A | 120VAC | 10 | 106 | | |
| **570nm Lime Green InGaAlP**   | 407,502,3708 | SF321-0UG-006B | 5/6V | 20 | 58 | 120º | Center Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br><br>Replace SF321 With S321 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA |
| | 3724,1446 | SF321-0UG-014B | 12/14V | 20 | 58 | | |
| | 1449,52 | SF321-0UG-024B | 24V | 15 | 44 | | |
| | | SF321-0UG-028B | 28V | 15 | 44 | | |
| | | SF321-0UG-120A | 120VAC | 10 | 29 | | |
| **525nm Aqua Green SiC/GaN**   | 407,502,3708 | SF321-0AG-006B | 5/6V | 15 | 400 | 120º | Center Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br><br>Replace SF321 With S321 Narrow (15º) Beam Intensity 7K mcd/250 Ft.Cd |
| | 3724,1446 | SF321-0AG-014B | 12/14V | 15 | 400 | | |
| | 1449,52 | SF321-0AG-024B | 24V | 15 | 400 | | |
| | | SF321-0AG-028B | 28V | 15 | 400 | | |
| | | SF321-0AG-120A | 120VAC | 10 | 275 | | |
| **470nm Super Blue SiC/GaN**   | 407,502,3708 | SF321-0PB-006B | 5/6V | 15 | 125 | 120º | Center Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br><br>Replace SF321 With S321 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd |
| | 3724,1446 | SF321-0PB-014B | 12/14V | 15 | 125 | | |
| | 1449,52 | SF321-0PB-024B | 24V | 15 | 125 | | |
| | | SF321-0PB-028B | 28V | 15 | 125 | | |
| | | SF321-0PB-120A | 120VAC | 10 | 74 | | |

All dimensions in inches. For millimeters multiply by 25.4

## Options



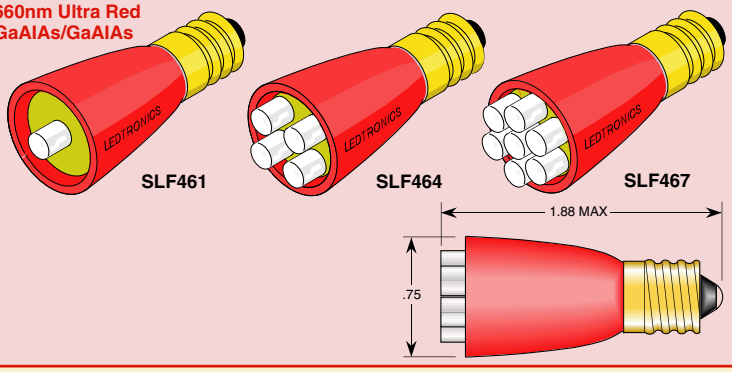
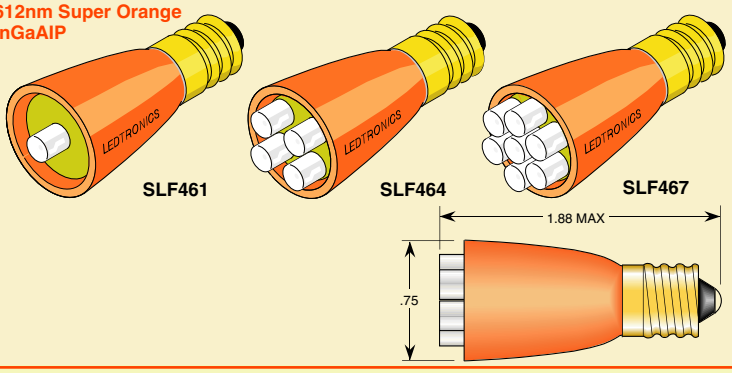
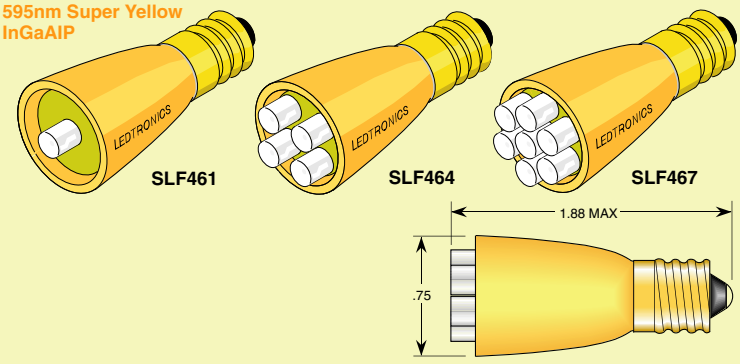
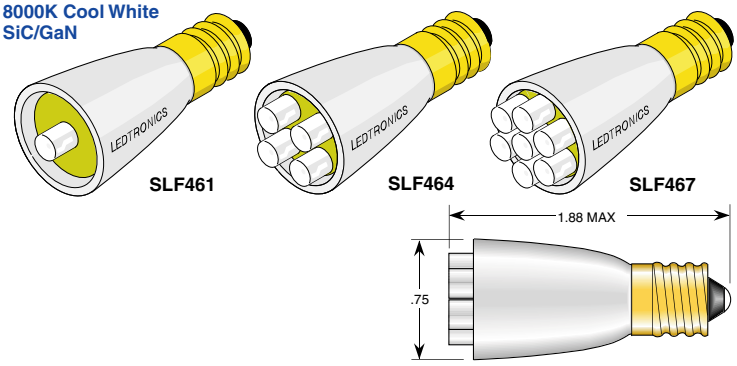

**Series:** S321CB1K (15º Illumination)
**PN Example:** S321-0PB-024B

Log # 122M Rev 09-2000


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Website: www.ledtronics.com

# S6 Candelabra Screw Based LEDs

| Miniature Packages | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAlAs**   | SLF461-0UR-024B | 24V | 20 | 115 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only |
| | SLF461-0UR-120A | 120VAC | 10 | 50 | | |
| | SLF461-0UR-130B | 130V | 8 | 40 | | |
| | SLF461-0UR-220A | 220VAC | 4 | 15 | | |
| | SLF464-0UR-024B | 24V | 20 | 460 | | |
| | SLF464-0UR-120A | 120VAC | 10 | 200 | | |
| | SLF464-0UR-130B | 130V | 8 | 160 | | |
| | SLF464-0UR-220A | 220VAC | 4 | 60 | | Replace SLF461 With SL461 for Narrow Beam (15º) 1.6K mcd/52Ft.Cd @ 20mA |
| | SLF467-0UR-024B | 24V | 20 | 800 | | |
| | SLF467-0UR-120A | 120VAC | 10 | 350 | | |
| | SLF467-0UR-130B | 130V | 8 | 280 | | |
| | SLF467-0UR-220A | 220VAC | 4 | 105 | | |
| **612nm Super Orange InGaAlP**   | SLF461-0UO-024B | 24V | 20 | 130 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only |
| | SLF461-0UO-120A | 120VAC | 10 | 65 | | |
| | SLF461-0UO-130B | 130V | 8 | 52 | | |
| | SLF461-0UO-220A | 220VAC | 4 | 26 | | |
| | SLF464-0UO-024B | 24V | 20 | 520 | | |
| | SLF464-0UO-120A | 120VAC | 10 | 260 | | |
| | SLF464-0UO-130B | 130V | 8 | 208 | | |
| | SLF464-0UO-220A | 220VAC | 4 | 104 | | Replace SLF461 With SL461 for Narrow Beam (15º) 3.5 K mcd@ 20mA |
| | SLF467-0UO-024B | 24V | 20 | 910 | | |
| | SLF467-0UO-120A | 120VAC | 10 | 455 | | |
| | SLF467-0UO-130B | 130V | 8 | 364 | | |
| | SLF467-0UO-220A | 220VAC | 4 | 182 | | |
| **595nm Super Yellow InGaAlP**   | SLF461-0UY-024B | 24V | 20 | 116 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only |
| | SLF461-0UY-120A | 120VAC | 10 | 39 | | |
| | SLF461-0UY-130B | 130V | 8 | 24 | | |
| | SLF461-0UY-220A | 220VAC | 4 | 4 | | |
| | SLF464-0UY-024B | 24V | 20 | 464 | | |
| | SLF464-0UY-120A | 120VAC | 10 | 156 | | |
| | SLF464-0UY-130B | 130V | 8 | 96 | | |
| | SLF464-0UY-220A | 220VAC | 4 | 16 | | Replace SLF461 With SL461 for Narrow Beam (15º) 3.2K mcd@ 20mA |
| | SLF467-0UY-024B | 24V | 20 | 812 | | |
| | SLF467-0UY-120A | 120VAC | 10 | 273 | | |
| | SLF467-0UY-130B | 130V | 8 | 168 | | |
| | SLF467-0UY-220A | 220VAC | 4 | 28 | | |
| **8000K Cool White SiC/GaN**   | SLF461-0CW-024B | 24V | 15 | 160 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only |
| | SLF461-0CW-120A | 120VAC | 10 | 106 | | |
| | SLF461-0CW-130B | 130V | 8 | 85 | | |
| | SLF461-0CW-220A | 220VAC | 4 | 42 | | |
| | SLF464-0CW-024B | 24V | 15 | 640 | | |
| | SLF464-0CW-120A | 120VAC | 10 | 424 | | |
| | SLF464-0CW-130B | 130V | 8 | 340 | | |
| | SLF464-0CW-220A | 220VAC | 4 | 168 | | |
| | SLF466-0CW-024B | 24V | 15 | 960 | | Replace BF321 With B321 for Std. Beam (50º) |
| | SLF467-0CW-120A | 120VAC | 10 | 742 | | |
| | SLF467-0CW-130B | 130V | 8 | 595 | | |
| | SLF467-0CW-220A | 220VAC | 4 | 294 | | |

All dimensions in inches. For millimeters multiply by 25.4

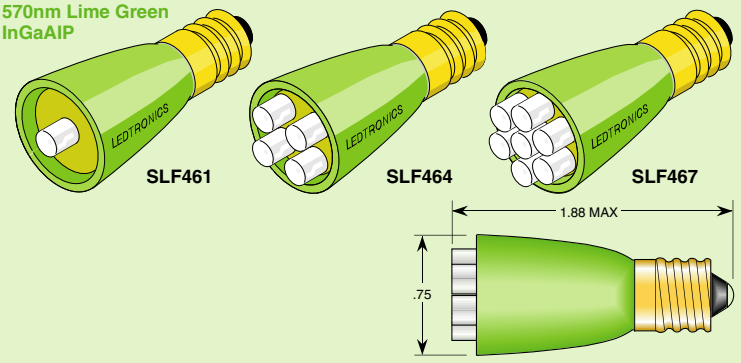
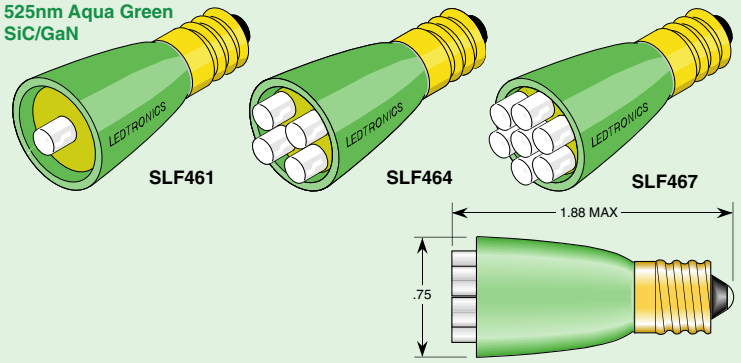
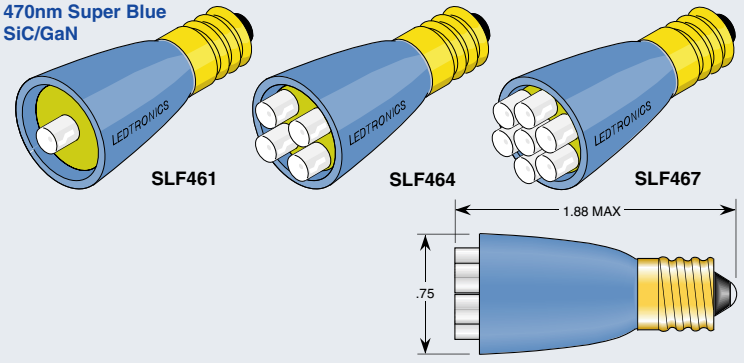
Log # 122N Rev 09-2000


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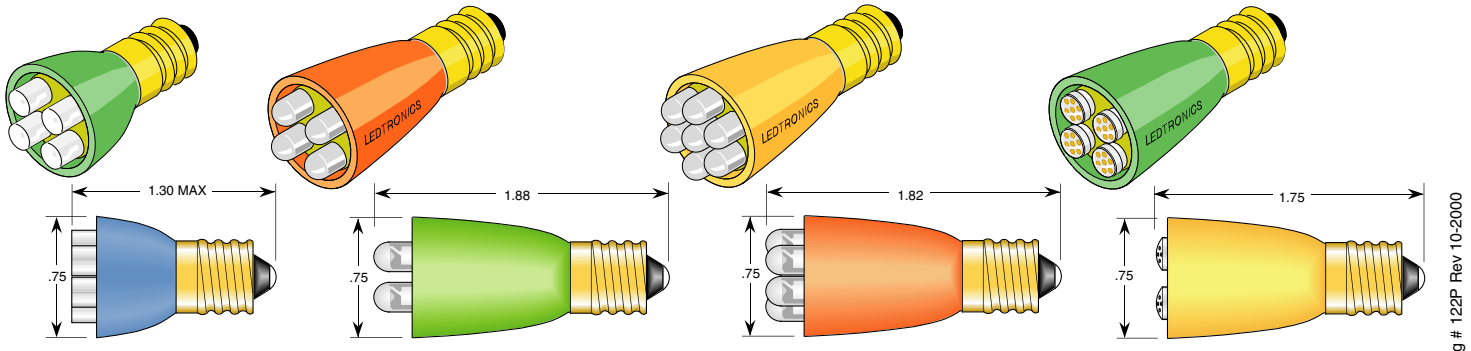
23105 Kashiwa Court, Torrance, CA 90505
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E-mail: webmaster@ledtronics.com
Website: www.ledtronics.com

# S6 Candelabra Screw Based LEDs

| Miniature Packages | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|
| **570nm Lime Green InGaAlP**<br> | SLF461-0UG-024B | 24V | 20 | 58 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only<br><br>Replace SLF461 With SL461 for Narrow Beam (12-15º) 1K mcd @ 20mA |
| | SLF461-0UG-120A | 120VAC | 10 | 29 | | |
| | SLF461-0UG-130B | 130V | 8 | 23 | | |
| | SLF461-0UG-220A | 220VAC | 4 | 12 | | |
| | SLF464-0UG-024B | 24V | 20 | 232 | | |
| | SLF464-0UG-120A | 120VAC | 10 | 116 | | |
| | SLF464-0UG-130B | 130V | 8 | 92 | | |
| | SLF464-0UG-220A | 220VAC | 4 | 48 | | |
| | SLF467-0UG-024B | 24V | 20 | 406 | | |
| | SLF467-0UG-120A | 120VAC | 10 | 203 | | |
| | SLF467-0UG-130B | 130V | 8 | 161 | | |
| | SLF467-0UG-220A | 220VAC | 4 | 84 | | |
| **525nm Aqua Green SiC/GaN**<br> | SLF461-0AG-024B | 24V | 15 | 400 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only<br><br>Replace SLF461 With SL461 for Narrow Beam (15º) 7K mcd/250 Ft.Cd @ 15mA |
| | SLF461-0AG-120A | 120VAC | 10 | 275 | | |
| | SLF461-0AG-130B | 130V | 8 | 230 | | |
| | SLF461-0AG-220A | 220VAC | 4 | 140 | | |
| | SLF464-0AG-024B | 24V | 15 | 1600 | | |
| | SLF464-0AG-120A | 120VAC | 10 | 1100 | | |
| | SLF464-0AG-130B | 130V | 8 | 920 | | |
| | SLF464-0AG-220A | 220VAC | 4 | 560 | | |
| | SLF466-0AG-024B | 24V | 15 | 2400 | | |
| | SLF467-0AG-120A | 120VAC | 10 | 1900 | | |
| | SLF467-0AG-130B | 130V | 8 | 1600 | | |
| | SLF467-0AG-220A | 220VAC | 4 | 980 | | |
| **470nm Super Blue SiC/GaN**<br> | SLF461-0PB-024B | 24V | 15 | 116 | 120º | Center Contact Polarity<br>B = Bipolar AC/DC<br>A = AC only<br><br>Replace BF321 With B321 for Std. Beam (15º) |
| | SLF461-0PB-120A | 120VAC | 10 | 74 | | |
| | SLF461-0PB-130B | 130V | 8 | 53 | | |
| | SLF461-0PB-220A | 220VAC | 4 | 7 | | |
| | SLF464-0PB-024B | 24V | 15 | 464 | | |
| | SLF464-0PB-120A | 120VAC | 10 | 296 | | |
| | SLF464-0PB-130B | 130V | 8 | 212 | | |
| | SLF464-0PB-220A | 220VAC | 4 | 28 | | |
| | SLF467-0PB-024B | 24V | 15 | 812 | | |
| | SLF467-0PB-120A | 120VAC | 10 | 518 | | |
| | SLF467-0PB-130B | 130V | 8 | 370 | | |
| | SLF467-0PB-220A | 220VAC | 4 | 49 | | |

## Options

All dimensions in inches. For millimeters multiply by 25.4




**Series:** SF464
**PN Example:** SF464-0PB-024B

**Series:** SL464 (15º Illumination)
**PN Example:** SL464-0UG-024B

**Series:** SL467 (15º Illumination)
**PN Example:** SL467-0UO-024B

**Series:** SL424
**PN Example:** SL424-0UY-006B

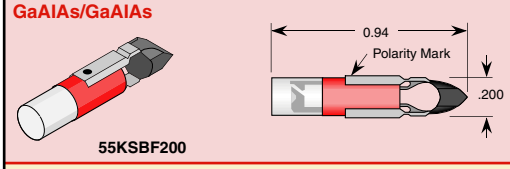
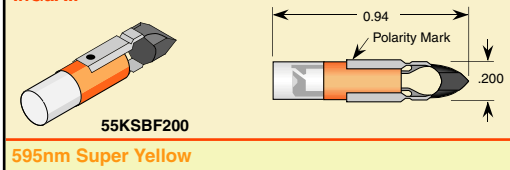
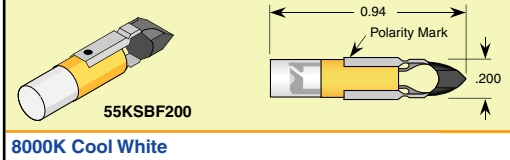
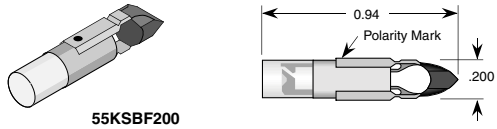
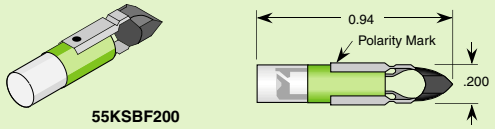
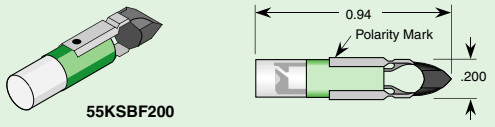
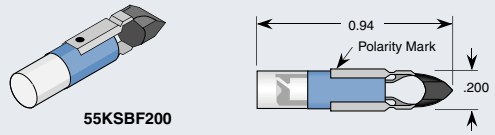
Log # 122P Rev 10-2000


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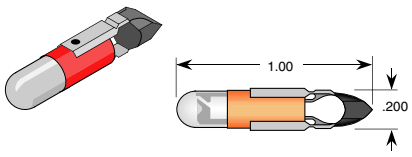
23105 Kashiwa Court, Torrance, CA 90505
Phone: (800) 579-4875 or (310) 534-1505
Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: www.ledtronics.com

# T5.5K European Telephone Slide Based LEDs

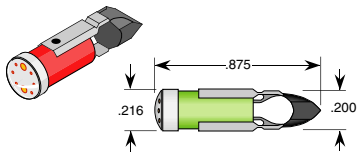
| Subminiature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAlAs**   | | 55KSBF200-0UR-006V | 5/6V | 20 | 115 | 120º | Contact Polarity<br>V = DC only<br>A = AC only<br>Replace 55KSBF200 With 55KSB200<br>Narrow Beam (15º)<br>Intensity 1.6K mcd/52 Ft.Cd @20 mA |
| | | 55KSBF200-0UR-014V | 12/14V | 20 | 115 | | |
| | | 55KSBF200-0UR-024V | 24V | 15 | 85 | | |
| | | 55KSBF200-0UR-028V | 28V | 15 | 85 | | |
| | | 55KSBF200-0UR-048V | 48V | 12 | 65 | | |
| | | 55KSBF200-0UR-120A | 120VAC | 10 | 50 | | |
| **612nm Super Orange InGaAlP**   | | 55KSBF200-0UO-006V | 5/6V | 20 | 130 | 120º | Contact Polarity<br>V = DC only<br>A = AC only<br>Replace 55KSBF200 With 55KSB200<br>Narrow (15º) Beam<br>Intensity 3.5K mcd@20 mA |
| | | 55KSBF200-0UO-014V | 12/14V | 20 | 130 | | |
| | | 55KSBF200-0UO-024V | 24V | 15 | 98 | | |
| | | 55KSBF200-0UO-028V | 28V | 15 | 98 | | |
| | | 55KSBF200-0UO-048V | 48V | 12 | 78 | | |
| | | 55KSBF200-0UO-120A | 120VAC | 10 | 65 | | |
| **595nm Super Yellow InGaAlP**   | | 55KSBF200-0UY-006V | 5/6V | 20 | 116 | 120º | Contact Polarity<br>V = DC only<br>A = AC only<br>Replace 55KSBF200 With 55KSB200<br>Narrow (15º) Beam<br>Intensity 3.2K mcd@20 mA |
| | | 55KSBF200-0UY-014V | 12/14V | 20 | 116 | | |
| | | 55KSBF200-0UY-024V | 24V | 15 | 75 | | |
| | | 55KSBF200-0UY-028V | 28V | 15 | 75 | | |
| | | 55KSBF200-0UY-048V | 48V | 12 | 54 | | |
| | | 55KSBF200-0UY-120A | 120VAC | 10 | 39 | | |
| **8000K Cool White SiC/GaN**   | | 55KSBF200-0CW-006V | 5V | 15 | 160 | 120º | Contact Polarity<br>V = DC only<br>A = AC only<br>Replace 55KSBF200 With 55KSB200<br>Std. (50º) Beam Intensity<br>750 mcd/75 Ft. cd |
| | | 55KSBF200-0CW-014V | 12/14V | 15 | 160 | | |
| | | 55KSBF200-0CW-024V | 24V | 15 | 160 | | |
| | | 55KSBF200-0CW-028V | 28V | 15 | 160 | | |
| | | 55KSBF200-0CW-048V | 48V | 12 | 128 | | |
| | | 55KSBF200-0CW-120A | 120VAC | 10 | 106 | | |
| **570nm Lime Green InGaAlP**   | | 55KSBF200-0UG-006V | 5/6V | 20 | 58 | 120º | Contact Polarity<br>V = DC only<br>A = AC only<br>Replace 55KSBF200 With 55KSB200<br>Narrow (12-15º) Beam<br>Intensity 1K mcd@ 20 mA |
| | | 55KSBF200-0UG-014V | 12/14V | 20 | 58 | | |
| | | 55KSBF200-0UG-024V | 24V | 15 | 44 | | |
| | | 55KSBF200-0UG-028V | 28V | 15 | 44 | | |
| | | 55KSBF200-0UG-048V | 48V | 12 | 35 | | |
| | | 55KSBF200-0UG-120A | 120VAC | 10 | 29 | | |
| **525nm Aqua Green SiC/GaN**   | | 55KSBF200-0AG-006V | 5/6V | 15 | 400 | 120º | Contact Polarity<br>V = DC only<br>A = AC only<br>Replace 55KSBF200 With 55KSB200<br>Narrow (15º) Beam<br>Intensity 7K mcd/250 Ft.Cd |
| | | 55KSBF200-0AG-014V | 12/14V | 15 | 400 | | |
| | | 55KSBF200-0AG-024V | 24V | 15 | 400 | | |
| | | 55KSBF200-0AG-028V | 28V | 15 | 400 | | |
| | | 55KSBF200-0AG-048V | 48V | 12 | 320 | | |
| | | 55KSBF200-0AG-120A | 120VAC | 10 | 275 | | |
| **470nm Super Blue SiC/GaN**   | | 55KSBF200-0PB-006V | 5/6V | 15 | 125 | 120º | Contact Polarity<br>V = DC only<br>A = AC only<br>Replace 55KSBF200 With 55KSB200<br>Std. (15º) Beam Intensity<br>2K mcd/60 Ft.Cd |
| | | 55KSBF200-0PB-014V | 12/14V | 15 | 125 | | |
| | | 55KSBF200-0PB-024V | 24V | 15 | 125 | | |
| | | 55KSBF200-0PB-028V | 28V | 15 | 125 | | |
| | | 55KSBF200-0PB-048V | 48V | 12 | 84 | | |
| | | 55KSBF200-0PB-120A | 120VAC | 10 | 74 | | |

## Options

All dimensions in inches. For millimeters multiply by 25.4




**Series:** 55KSB200 (15º Illumination)
**PN Example:** 55KSB200-0UO-024V



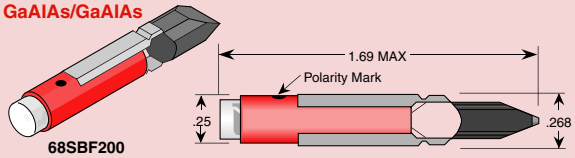
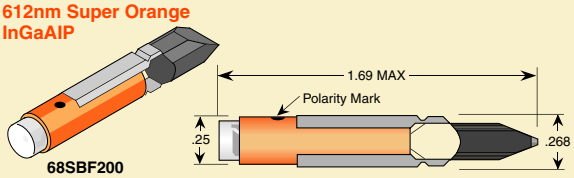
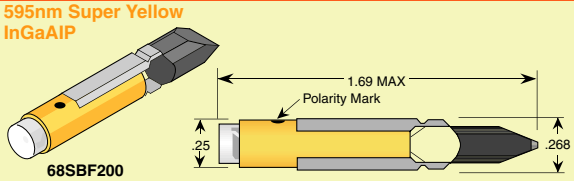
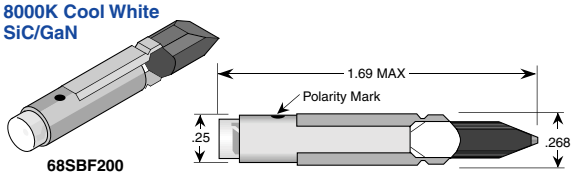
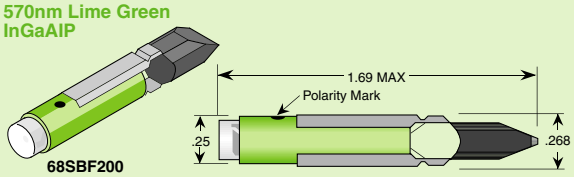
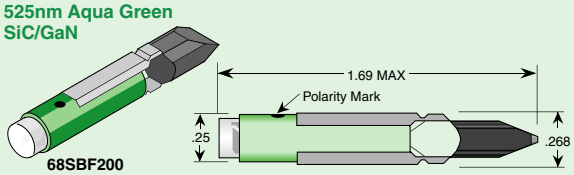
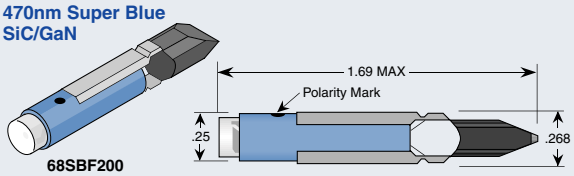

**Series:** 55KSB206 (160º Illumination)
**PN Example:** 55KSB206-0AG-024V

Log # 122R Rev 09-2000


**LEDTRONICS, INC.**
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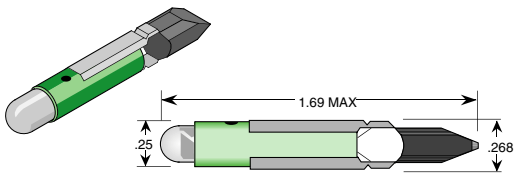
23105 Kashiwa Court, Torrance, CA 90505
Phone: (800) 579-4875 or (310) 534-1505
Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: www.ledtronics.com

# T6.8 European Telephone Slide Based LEDs

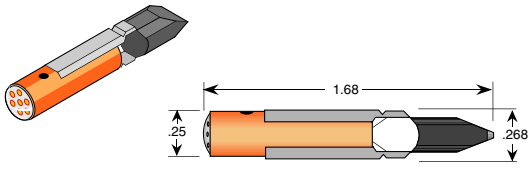
| Subminiature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAlAs**   | | 68SBF200-0UR-006B | 5/6V | 20 | 115 | 120º | Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br>Replace 68SBF200 With 68SB200<br>Narrow Beam (15º)<br>Intensity 1.6K mcd/52 Ft.Cd @20 mA |
| | | 68SBF200-0UR-014B | 12/14V | 20 | 115 | | |
| | | 68SBF200-0UR-024B | 24V | 15 | 85 | | |
| | | 68SBF200-0UR-028B | 28V | 15 | 85 | | |
| | | 68SBF200-0UR-048B | 48V | 12 | 65 | | |
| | | 68SBF200-0UR-120A | 120VAC | 10 | 50 | | |
| **612nm Super Orange InGaAlP**   | | 68SBF200-0UO-006B | 5/6V | 20 | 130 | 120º | Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br>Replace 68SBF200 With 68SB200<br>Narrow (15º) Beam<br>Intensity 3.5K mcd@20 mA |
| | | 68SBF200-0UO-014B | 12/14V | 20 | 130 | | |
| | | 68SBF200-0UO-024B | 24V | 15 | 98 | | |
| | | 68SBF200-0UO-028B | 28V | 15 | 98 | | |
| | | 68SBF200-0UO-048B | 48V | 12 | 78 | | |
| | | 68SBF200-0UO-120A | 120VAC | 10 | 65 | | |
| **595nm Super Yellow InGaAlP**   | | 68SBF200-0UY-006B | 5/6V | 20 | 116 | 120º | Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br>Replace 68SBF200 With 68SB200<br>Narrow (15º) Beam<br>Intensity 3.2K mcd@20 mA |
| | | 68SBF200-0UY-014B | 12/14V | 20 | 116 | | |
| | | 68SBF200-0UY-024B | 24V | 15 | 75 | | |
| | | 68SBF200-0UY-028B | 28V | 15 | 75 | | |
| | | 68SBF200-0UY-048B | 48V | 12 | 54 | | |
| | | 68SBF200-0UY-120A | 120VAC | 10 | 39 | | |
| **8000K Cool White SiC/GaN**   | | 68SBF200-0CW-006B | 5V | 15 | 160 | 120º | Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br>Replace 68SBF200 With 68SB200<br>Std. (50º) Beam Intensity<br>750 mcd/75 Ft. cd |
| | | 68SBF200-0CW-014B | 12/14V | 15 | 160 | | |
| | | 68SBF200-0CW-024B | 24V | 15 | 160 | | |
| | | 68SBF200-0CW-028B | 28V | 15 | 160 | | |
| | | 68SBF200-0CW-048B | 48V | 12 | 128 | | |
| | | 68SBF200-0CW-120A | 120VAC | 10 | 106 | | |
| **570nm Lime Green InGaAlP**   | | 68SBF200-0UG-006B | 5/6V | 20 | 58 | 120º | Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br>Replace 68SBF200 With 68SB200<br>Narrow (12-15º) Beam<br>Intensity 1K mcd@ 20 mA |
| | | 68SBF200-0UG-014B | 12/14V | 20 | 58 | | |
| | | 68SBF200-0UG-024B | 24V | 15 | 44 | | |
| | | 68SBF200-0UG-028B | 28V | 15 | 44 | | |
| | | 68SBF200-0UG-048B | 48V | 12 | 35 | | |
| | | 68SBF200-0UG-120A | 120VAC | 10 | 29 | | |
| **525nm Aqua Green SiC/GaN**   | | 68SBF200-0AG-006B | 5/6V | 15 | 400 | 120º | Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br>Replace 68SBF200 With 68SB200<br>Narrow (15º) Beam<br>Intensity 7K mcd/250 Ft.Cd |
| | | 68SBF200-0AG-014B | 12/14V | 15 | 400 | | |
| | | 68SBF200-0AG-024B | 24V | 15 | 400 | | |
| | | 68SBF200-0AG-028B | 28V | 15 | 400 | | |
| | | 68SBF200-0AG-048B | 48V | 12 | 320 | | |
| | | 68SBF200-0AG-120A | 120VAC | 10 | 275 | | |
| **470nm Super Blue SiC/GaN**   | | 68SBF200-0PB-006B | 5/6V | 15 | 125 | 120º | Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br>Replace 68SBF200 With 68SB200<br>Std. (15º) Beam Intensity<br>2K mcd/60 Ft.Cd |
| | | 68SBF200-0PB-014B | 12/14V | 15 | 125 | | |
| | | 68SBF200-0PB-024B | 24V | 15 | 125 | | |
| | | 68SBF200-0PB-028B | 28V | 15 | 125 | | |
| | | 68SBF200-0PB-048B | 48V | 12 | 84 | | |
| | | 68SBF200-0PB-120A | 120VAC | 10 | 74 | | |

## Options

All dimensions in inches. For millimeters multiply by 25.4




**Series:** 68SB200 (15º Illumination)
**PN Example:** 68SB200-0AG-024B



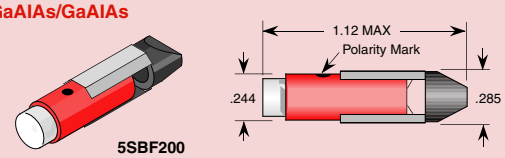
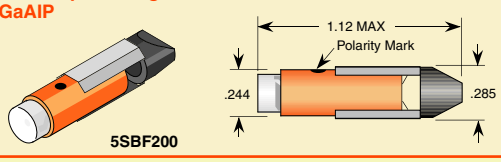
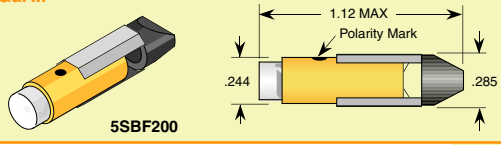
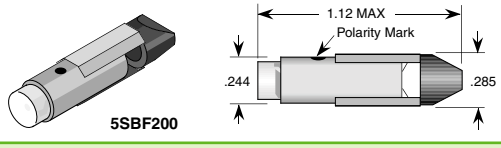
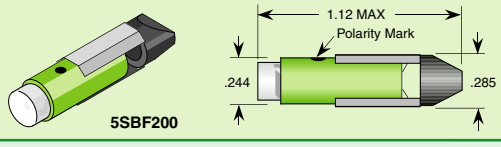
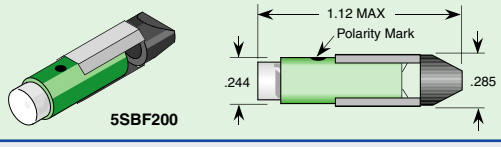
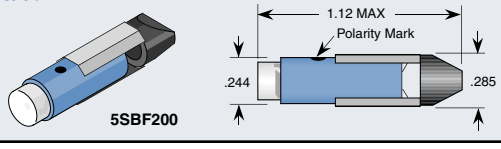

**Series:** 68SB206 (6 Chip 160º Illumination)
**PN Example:** 68SB206-0UO-120A

Log # 122T Rev 09-2000


**LEDTRONICS, INC.**
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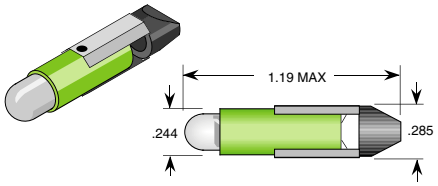
23105 Kashiwa Court, Torrance, CA 90505
Phone: (800) 579-4875 or (310) 534-1505
Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: www.ledtronics.com

# T2 ANSI #5 Telephone Slide Based LEDs

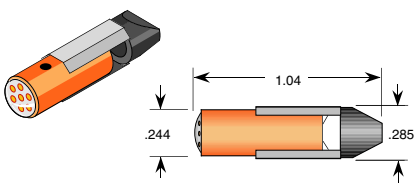
| Subminiature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAlAs**   | 6 PSB | 5SBF200-0UR-006B | 5/6V | 20 | 115 | 120º | Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br>Replace 5SBF200 With 5SB200<br>Narrow Beam (15º)<br>Intensity 1.6K mcd/52 Ft.Cd @20 mA |
| | 12 PSB | 5SBF200-0UR-014B | 12/14V | 20 | 115 | | |
| | 24 PSB | 5SBF200-0UR-024B | 24V | 15 | 85 | | |
| | 28 PSB | 5SBF200-0UR-028B | 28V | 15 | 85 | | |
| | | 5SBF200-0UR-048B | 48V | 12 | 65 | | |
| | 120 PSB | 5SBF200-0UR-120A | 120VAC | 10 | 50 | | |
| **612nm Super Orange InGaAlP**   | 6 PSB | 5SBF200-0UO-006B | 5/6V | 20 | 130 | 120º | Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br>Replace 5SBF200 With 5SB200<br>Narrow (15º) Beam<br>Intensity 3.5K mcd@20 mA |
| | 12 PSB | 5SBF200-0UO-014B | 12/14V | 20 | 130 | | |
| | 24 PSB | 5SBF200-0UO-024B | 24V | 15 | 98 | | |
| | 28 PSB | 5SBF200-0UO-028B | 28V | 15 | 98 | | |
| | | 5SBF200-0UO-048B | 48V | 12 | 78 | | |
| | 120 PSB | 5SBF200-0UO-120A | 120VAC | 10 | 65 | | |
| **595nm Super Yellow InGaAlP**   | 6 PSB | 5SBF200-0UY-006B | 5/6V | 20 | 116 | 120º | Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br>Replace 5SBF200 With 5SB200<br>Narrow (15º) Beam<br>Intensity 3.2K mcd@20 mA |
| | 12 PSB | 5SBF200-0UY-014B | 12/14V | 20 | 116 | | |
| | 24 PSB | 5SBF200-0UY-024B | 24V | 15 | 75 | | |
| | 28 PSB | 5SBF200-0UY-028B | 28V | 15 | 75 | | |
| | | 5SBF200-0UY-048B | 48V | 12 | 54 | | |
| | 120 PSB | 5SBF200-0UY-120A | 120VAC | 10 | 39 | | |
| **8000K Cool White SiC/GaN**   | 6 PSB | 5SBF200-0CW-006B | 5V | 15 | 160 | 120º | Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br>Replace 5SBF200 With 5SB200<br>Std. (50º) Beam Intensity<br>750 mcd/75 Ft. cd |
| | 12 PSB | 5SBF200-0CW-014B | 12/14V | 15 | 160 | | |
| | 24 PSB | 5SBF200-0CW-024B | 24V | 15 | 160 | | |
| | 28 PSB | 5SBF200-0CW-028B | 28V | 15 | 160 | | |
| | | 5SBF200-0CW-048B | 48V | 12 | 128 | | |
| | 120 PSB | 5SBF200-0CW-120A | 120VAC | 10 | 106 | | |
| **570nm Lime Green InGaAlP**   | 6 PSB | 5SBF200-0UG-006B | 5/6V | 20 | 58 | 120º | Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br>Replace 5SBF200 With 5SB200<br>Narrow (12-15º) Beam<br>Intensity 1K mcd@ 20 mA |
| | 12 PSB | 5SBF200-0UG-014B | 12/14V | 20 | 58 | | |
| | 24 PSB | 5SBF200-0UG-024B | 24V | 15 | 44 | | |
| | 28 PSB | 5SBF200-0UG-028B | 28V | 15 | 44 | | |
| | | 5SBF200-0UG-048B | 48V | 12 | 35 | | |
| | 120 PSB | 5SBF200-0UG-120A | 120VAC | 10 | 29 | | |
| **525nm Aqua Green SiC/GaN**   | 6 PSB | 5SBF200-0AG-006B | 5/6V | 15 | 400 | 120º | Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br>Replace 5SBF200 With 5SB200<br>Narrow (15º) Beam<br>Intensity 7K mcd/250 Ft.Cd |
| | 12 PSB | 5SBF200-0AG-014B | 12/14V | 15 | 400 | | |
| | 24 PSB | 5SBF200-0AG-024B | 24V | 15 | 400 | | |
| | 28 PSB | 5SBF200-0AG-028B | 28V | 15 | 400 | | |
| | | 5SBF200-0AG-048B | 48V | 12 | 320 | | |
| | 120 PSB | 5SBF200-0AG-120A | 120VAC | 10 | 275 | | |
| **470nm Super Blue SiC/GaN**   | 6 PSB | 5SBF200-0PB-006B | 5/6V | 15 | 125 | 120º | Contact Polarity<br>B = BiPolar AC/DC<br>A = AC only<br>Replace 5SBF200 With 5SB200<br>Std. (15º) Beam Intensity<br>2K mcd/60 Ft.Cd |
| | 12 PSB | 5SBF200-0PB-014B | 12/14V | 15 | 125 | | |
| | 24 PSB | 5SBF200-0PB-024B | 24V | 15 | 125 | | |
| | 28 PSB | 5SBF200-0PB-028B | 28V | 15 | 125 | | |
| | | 5SBF200-0PB-048B | 48V | 12 | 84 | | |
| | 120 PSB | 5SBF200-0PB-120A | 120VAC | 10 | 74 | | |

## Options

All dimensions in inches. For millimeters multiply by 25.4




**Series:** 5SB200 (15º Illumination)
**PN Example:** 5SB200-0UG-024B



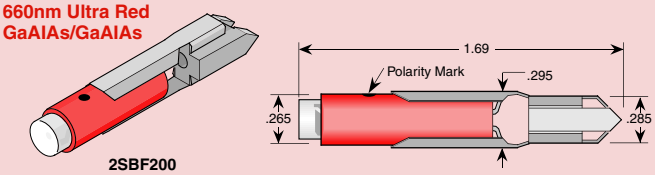
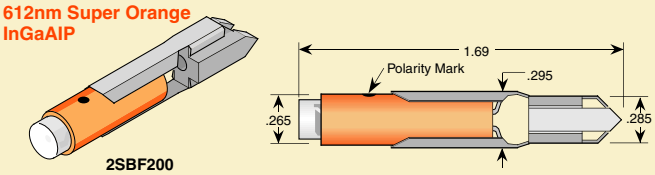
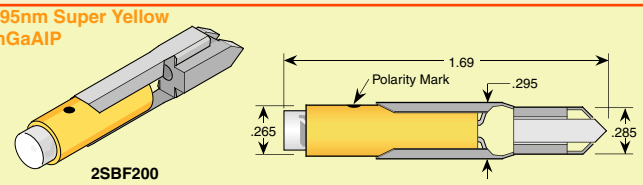
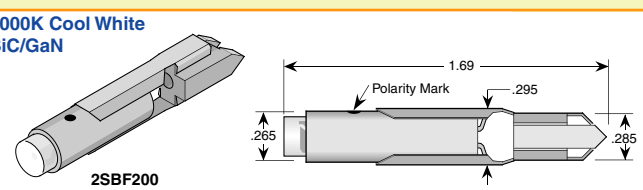
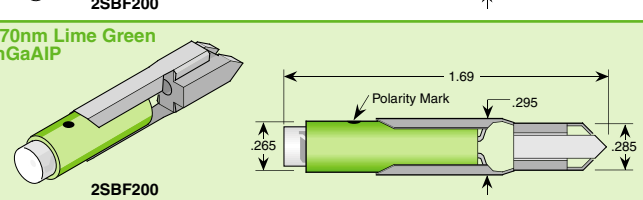
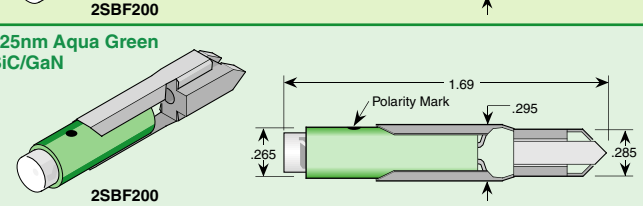
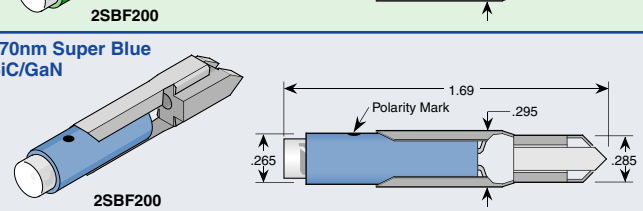

**Series:** 5SB206 (160º Illumination)
**PN Example:** 5SB206-0UO-028B

Log # 122S Rev 09-2000


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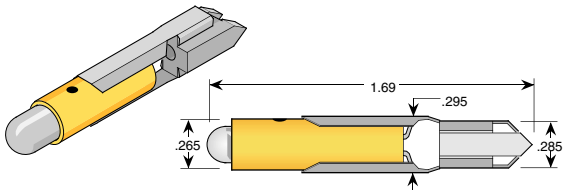
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Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: www.ledtronics.com

# T2 ANSI #2 & #3 Telephone Slide Based LEDs

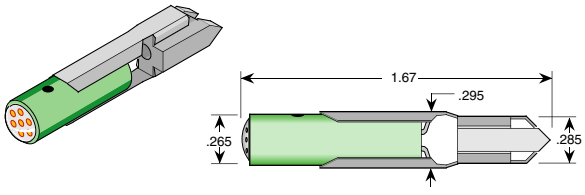
| Miniature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAlAs**   | | 2SBF200-0UR-006B | 5/6V | 20 | 115 | 120º | Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow Beam (15º) Intensity 1.6K mcd/52 Ft.Cd @20 mA |
| | | 2SBF200-0UR-014B | 12/14V | 20 | 115 | | |
| | 24E,24X | 2SBF200-0UR-024B | 24V | 15 | 85 | | |
| | | 2SBF200-0UR-028B | 28V | 15 | 85 | | |
| | 48A,D,C | 2SBF200-0UR-048B | 48V | 12 | 65 | | |
| | | 2SBF200-0UR-120A | 120VAC | 10 | 50 | | |
| **612nm Super Orange InGaAlP**   | | 2SBF200-0UO-006B | 5/6V | 20 | 130 | 120º | Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (15º) Beam Intensity 3.5K mcd@20 mA |
| | | 2SBF200-0UO-014B | 12/14V | 20 | 130 | | |
| | 24E,24X | 2SBF200-0UO-024B | 24V | 15 | 98 | | |
| | | 2SBF200-0UO-028B | 28V | 15 | 98 | | |
| | 48A,D,C | 2SBF200-0UO-048B | 48V | 12 | 78 | | |
| | | 2SBF200-0UO-120A | 120VAC | 10 | 65 | | |
| **595nm Super Yellow InGaAlP**   | | 2SBF200-0UY-006B | 5/6V | 20 | 116 | 120º | Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (15º) Beam Intensity 3.2K mcd@20 mA |
| | | 2SBF200-0UY-014B | 12/14V | 20 | 116 | | |
| | 24E,24X | 2SBF200-0UY-024B | 24V | 15 | 75 | | |
| | | 2SBF200-0UY-028B | 28V | 15 | 75 | | |
| | 48A,D,C | 2SBF200-0UY-048B | 48V | 12 | 54 | | |
| | | 2SBF200-0UY-120A | 120VAC | 10 | 39 | | |
| **8000K Cool White SiC/GaN**   | | 2SBF200-0CW-006B | 5V | 15 | 160 | 120º | Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd |
| | | 2SBF200-0CW-014B | 12/14V | 15 | 160 | | |
| | 24E,24X | 2SBF200-0CW-024B | 24V | 15 | 160 | | |
| | | 2SBF200-0CW-028B | 28V | 15 | 160 | | |
| | 48A,D,C | 2SBF200-0CW-048B | 48V | 12 | 128 | | |
| | | 2SBF200-0CW-120A | 120VAC | 10 | 106 | | |
| **570nm Lime Green InGaAlP**   | | 2SBF200-0UG-006B | 5/6V | 20 | 58 | 120º | Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA |
| | | 2SBF200-0UG-014B | 12/14V | 20 | 58 | | |
| | 24E,24X | 2SBF200-0UG-024B | 24V | 15 | 44 | | |
| | | 2SBF200-0UG-028B | 28V | 15 | 44 | | |
| | 48A,D,C | 2SBF200-0UG-048B | 48V | 12 | 35 | | |
| | | 2SBF200-0UG-120A | 120VAC | 10 | 29 | | |
| **525nm Aqua Green SiC/GaN**   | | 2SBF200-0AG-006B | 5/6V | 15 | 400 | 120º | Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (15º) Beam Intensity 7K mcd/250 Ft.Cd |
| | | 2SBF200-0AG-014B | 12/14V | 15 | 400 | | |
| | 24E,24X | 2SBF200-0AG-024B | 24V | 15 | 400 | | |
| | | 2SBF200-0AG-028B | 28V | 15 | 400 | | |
| | 48A,D,C | 2SBF200-0AG-048B | 48V | 12 | 320 | | |
| | | 2SBF200-0AG-120A | 120VAC | 10 | 275 | | |
| **470nm Super Blue SiC/GaN**   | | 2SBF200-0PB-006B | 5/6V | 15 | 125 | 120º | Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd |
| | | 2SBF200-0PB-014B | 12/14V | 15 | 125 | | |
| | 24E,24X | 2SBF200-0PB-024B | 24V | 15 | 125 | | |
| | | 2SBF200-0PB-028B | 28V | 15 | 125 | | |
| | 48A,D,C | 2SBF200-0PB-048B | 48V | 12 | 84 | | |
| | | 2SBF200-0PB-120A | 120VAC | 10 | 74 | | |

## Options

All dimensions in inches. For millimeters multiply by 25.4




**Series:** 2SB200 (15º Illumination)
**PN Example:** 2SB200-0UY-024B



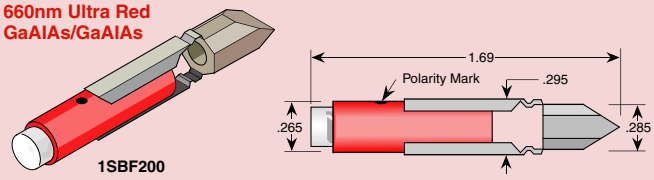
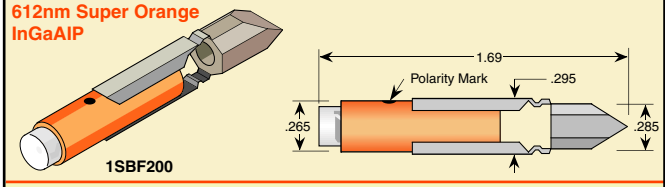
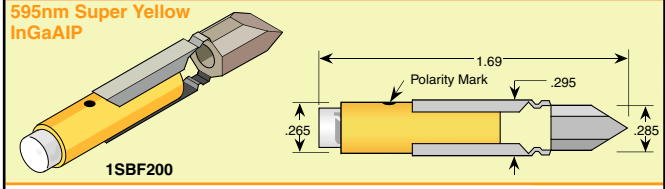
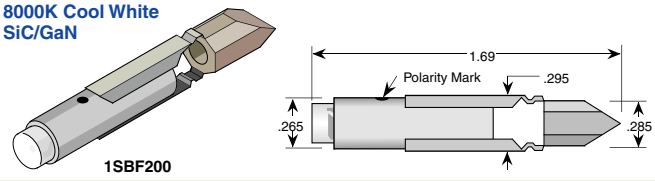
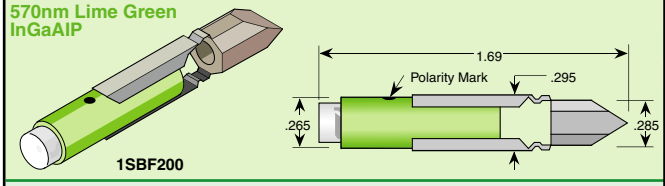
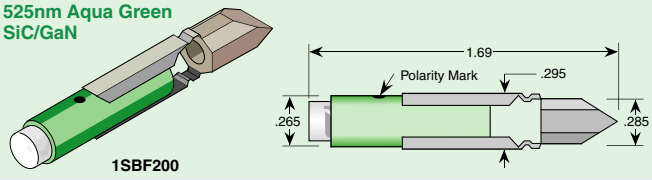
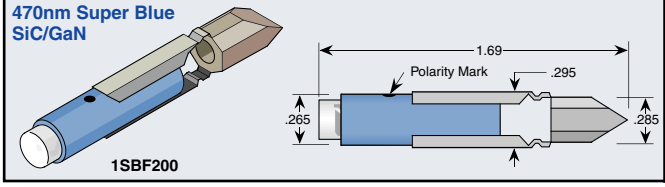

**Series:** 2SB206 (160º Illumination)
**PN Example:** 2SB206-0AG-028B

Log # 122U Rev 09-2000

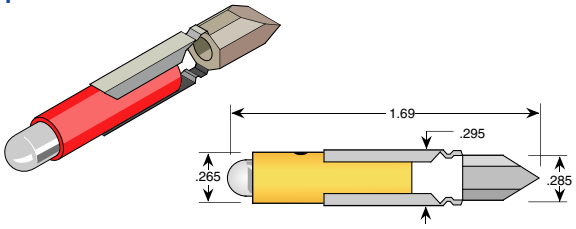

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E-mail: webmaster@ledtronics.com
Website: www.ledtronics.com

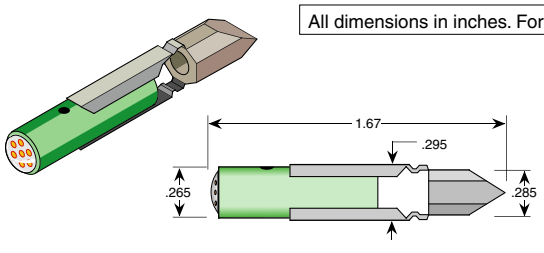
# T2 #1 Telephone Slide Based LEDs

| Miniature Packages | Replaces Incandescent | Part Number | Electrical-Optical Characteristics (Ta = 25ºC) Voltage V typ | Current mA typ | Intensity mcd | Angle of Illumination | Special Features |
|---|---|---|---|---|---|---|---|
| **660nm Ultra Red GaAlAs/GaAlAs**   | | 1SBF200-0UR-006B | 5/6V | 20 | 115 | 120º | Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow Beam (15º) Intensity 1.6K mcd/52 Ft.Cd @20 mA |
| | | 1SBF200-0UR-014B | 12/14V | 20 | 115 | | |
| | | 1SBF200-0UR-024B | 24V | 15 | 85 | | |
| | | 1SBF200-0UR-028B | 28V | 15 | 85 | | |
| | | 1SBF200-0UR-048B | 48V | 12 | 65 | | |
| | | 1SBF200-0UR-120A | 120VAC | 10 | 50 | | |
| **612nm Super Orange InGaAlP**   | | 1SBF200-0UO-006B | 5/6V | 20 | 130 | 120º | Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (15º) Beam Intensity 3.5K mcd@20 mA |
| | | 1SBF200-0UO-014B | 12/14V | 20 | 130 | | |
| | | 1SBF200-0UO-024B | 24V | 15 | 98 | | |
| | | 1SBF200-0UO-028B | 28V | 15 | 98 | | |
| | | 1SBF200-0UO-048B | 48V | 12 | 78 | | |
| | | 1SBF200-0UO-120A | 120VAC | 10 | 65 | | |
| **595nm Super Yellow InGaAlP**   | | 1SBF200-0UY-006B | 5/6V | 20 | 116 | 120º | Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (15º) Beam Intensity 3.2K mcd@20 mA |
| | | 1SBF200-0UY-014B | 12/14V | 20 | 116 | | |
| | | 1SBF200-0UY-024B | 24V | 15 | 75 | | |
| | | 1SBF200-0UY-028B | 28V | 15 | 75 | | |
| | | 1SBF200-0UY-048B | 48V | 12 | 54 | | |
| | | 1SBF200-0UY-120A | 120VAC | 10 | 39 | | |
| **8000K Cool White SiC/GaN**   | | 1SBF200-0CW-006B | 5V | 15 | 160 | 120º | Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Std. (50º) Beam Intensity 750 mcd/75 Ft. cd |
| | | 1SBF200-0CW-014B | 12/14V | 15 | 160 | | |
| | | 1SBF200-0CW-024B | 24V | 15 | 160 | | |
| | | 1SBF200-0CW-028B | 28V | 15 | 160 | | |
| | | 1SBF200-0CW-048B | 48V | 12 | 128 | | |
| | | 1SBF200-0CW-120A | 120VAC | 10 | 106 | | |
| **570nm Lime Green InGaAlP**   | | 1SBF200-0UG-006B | 5/6V | 20 | 58 | 120º | Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (12-15º) Beam Intensity 1K mcd@ 20 mA |
| | | 1SBF200-0UG-014B | 12/14V | 20 | 58 | | |
| | | 1SBF200-0UG-024B | 24V | 15 | 44 | | |
| | | 1SBF200-0UG-028B | 28V | 15 | 44 | | |
| | | 1SBF200-0UG-048B | 48V | 12 | 35 | | |
| | | 1SBF200-0UG-120A | 120VAC | 10 | 29 | | |
| **525nm Aqua Green SiC/GaN**   | | 1SBF200-0AG-006B | 5/6V | 15 | 400 | 120º | Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Narrow (15º) Beam Intensity 7K mcd/250 Ft.Cd |
| | | 1SBF200-0AG-014B | 12/14V | 15 | 400 | | |
| | | 1SBF200-0AG-024B | 24V | 15 | 400 | | |
| | | 1SBF200-0AG-028B | 28V | 15 | 400 | | |
| | | 1SBF200-0AG-048B | 48V | 12 | 320 | | |
| | | 1SBF200-0AG-120A | 120VAC | 10 | 275 | | |
| **470nm Super Blue SiC/GaN**   | | 1SBF200-0PB-006B | 5/6V | 15 | 125 | 120º | Contact Polarity B = BiPolar AC/DC A = AC only Replace 2SBF200 With 2SB200 Std. (15º) Beam Intensity 2K mcd/60 Ft.Cd |
| | | 1SBF200-0PB-014B | 12/14V | 15 | 125 | | |
| | | 1SBF200-0PB-024B | 24V | 15 | 125 | | |
| | | 1SBF200-0PB-028B | 28V | 15 | 125 | | |
| | | 1SBF200-0PB-048B | 48V | 12 | 84 | | |
| | | 1SBF200-0PB-120A | 120VAC | 10 | 74 | | |

## Options




**Series:** 1SB200 (15º Illumination)
**PN Example:** 1SB200-0UY-024B




**Series:** BSD-1174 (160º Illumination)
**PN Example:** BSD-1174-0AG-028B

All dimensions in inches. For millimeters multiply by 25.4

Log # 122V Rev 09-2000


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Website: www.ledtronics.com

# LED Color Chart

| LEDtronics Code | LED Chip Code | Wavelength nm | Color Name | Fwd Voltage Vf @ 20mA | Intensity 5mm LEDs | Viewing Angle | LED Dye Material |
|---|---|---|---|---|---|---|---|
| 941 | IR941 | 940 | Infrared | 1.5 | 16mW @ 50mA | 15º | GaAlAs/GaAs - Gallium Aluminum Arsenide/ Gallium Arsenide |
| 881 | IR881 | 880 | Infrared | 1.7 | 18mW @ 50mA | 15º | GaAlAs/GaAs - Gallium Aluminum Arsenide/ Gallium Arsenide |
| 851 | IR851 | 850 | Infrared | 1.7 | 26mW @ 50mA | 15º | GaAlAs/GaAlAs - Gallium Aluminum Arsenide/ Gallium Aluminum Arsenide |
| 0UR | R3KF | 660 | Ultra Red | 1.8 | 2000mcd @ 20mA | 15º | GaAlAs/GaAlAs - Gallium Aluminum Arsenide/ Gallium Aluminum Arsenide |
| 00R | R3/R4/R5 | 635 | High Eff. Red | 2.0 | 200mcd @ 20mA | 15º | GaAsP/GaP - Gallium Arsenic Phosphide /Gallium Phosphide |
| 0ER | E3K | 633 | Super Red | 2.2 | 3500mcd @ 20mA | 15º | InGaAlP - Indium Gallium Aluminum Phosphide |
| 0UO | O3K/O6K | 620 | Super Orange | 2.2 | 4500mcd @ 20mA | 15º | InGaAlP - Indium Gallium Aluminum Phosphide |
| 0UO | O3KF | 612 | Super Orange | 2.2 | 6500mcd @ 20mA | 15º | InGaAlP - Indium Gallium Aluminum Phosphide |
| 00O | O4/O5 | 605 | Orange | 2.1 | 160mcd @ 20mA | 15º | GaAsp/GaP - Gallium Arsenic Phosphide /Gallium Phosphide |
| 0UY | Y3KF | 595 | Super Yellow | 2.2 | 5500mcd @ 20mA | 15º | InGaAlP - Indium Gallium Aluminum Phosphide |
| 0PY | Y3KH | 592 | Super Pure Yellow | 2.1 | 7000mcd @ 20mA | 15º | InGaAlP - Indium Gallium Aluminum Phosphide |
| 00Y | Y3/Y4/Y5 | 585 | Yellow | 2.1 | 100mcd @ 20mA | 15º | GaAsp/GaP - Gallium Arsenic Phosphide /Gallium Phosphide |
| 0IW | IW2K | 4500K | Incand White | 3.6 | 2000mcd @ 20mA | 20º | SiC/GaN - Silicon Carbide/Gallium Nitride |
| 0PW | PW4K | 6500K | Pale White | 3.6 | 4000mcd @ 20mA | 20º | SiC/GaN - Silicon Carbide/Gallium Nitride |
| 0CW | CW6K | 8000K | Cool White | 3.6 | 6000mcd @ 20mA | 20º | SiC/GaN - Silicon Carbide/Gallium Nitride |
| 0LY | LY1K | 574 | Super Lime Yellow | 2.4 | 1000mcd @ 20mA | 15º | InGaAlP - Indium Gallium Aluminum Phosphide |
| 0UG | G1K | 570 | Super Lime Green | 2.0 | 1000mcd @ 20mA | 15º | InGaAlP - Indium Gallium Aluminum Phosphide |
| 00G | G3/G4/G5 | 565 | High Eff. Green | 2.1 | 200mcd @ 20mA | 15º | GaP/GaP - Gallium Phosphide/Gallium Phosphide |
| UPG | PG350 | 560 | Super Pure Green | 2.1 | 350mcd @ 20mA | 15º | InGaAlP - Indium Gallium Aluminum Phosphide |
| 0PG | PG5 | 555 | Pure Green | 2.1 | 80mcd @ 20mA | 15º | GaP/GaP - Gallium Phosphide/Gallium Phosphide |
| 0AG | AG10K | 525 | Aqua Green | 3.5 | 10,000mcd @ 20mA | 15º | SiC/GaN - Silicon Carbide/Gallium Nitride |
| 0BG | BG2K | 505 | Blue Green | 3.5 | 2000mcd @ 20mA | 45º | SiC/GaN - Silicon Carbide/Gallium Nitride |
| 0PB | PB3K | 470 | Super Blue | 3.6 | 3000mcd @ 20mA | 15º | SiC/GaN - Silicon Carbide/Gallium Nitride |
| 00B | UB500 | 430 | Ultra Blue | 3.8 | 100mcd @ 20mA | 15º | SiC/GaN - Silicon Carbide/Gallium Nitride |

**LEDTRONICS, INC.**
***THE FUTURE OF LIGHT***

ISO LED 9001 REGISTERED

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гарантия бесперебойности производства и качества выпускаемой продукции

## О компании

ООО "ТрейдЭлектроникс" - это оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов. Реализуемая нашей компанией продукция насчитывает более полумиллиона наименований.

Благодаря этому наша компания предлагает к поставке практически не ограниченный ассортимент компонентов как оптовыми, мелкооптовыми партиями, так и в розницу.

Наличие собственной эффективной системы логистики обеспечивает надежную поставку продукции по конкурентным ценам в точно указанные сроки.

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- Широкий ассортимент
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- Подбор комплектации
- Индивидуальный подход
- Гибкое ценообразование

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## Перечень производителей, продукцию которых мы поставляем на российский рынок



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С удовольствием будем прорабатывать для Вас поставки всех необходимых компонентов по текущим запросам для скорейшего выявления групп элементов, по которым сотрудничество именно с нашей компанией будет для Вас максимально выгодным!

С уважением,

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