



**Microsemi Corp.**

*The diode experts*

SCOTTSDALE, AZ  
For more information call:  
(602) 941-6300

**1N6267 thru  
1N6303A  
and 1.5KE6.8 thru  
1.5KE400A**

## FEATURES

- ECONOMICAL
- 1500 WATTS PEAK PULSE POWER DISSIPATION
- STAND OFF VOLTAGES FROM 5.5V - 171V
- UNIPOLAR OR BIPOLAR
- AVAILABLE IN CHIP FORM FOR HYBRID APPLICATION
- MULTI-CHIP BIDIRECTIONAL CELLS AVAILABLE

## DESCRIPTION

This defines a series of silicon Transient Suppressors designed to protect voltage sensitive components from high energy voltage transients. TAZ devices have become very important as a consequence of their high surge capability, extremely fast response time, and low incremental surge resistance ( $R_s$ ).

To characterize TAZ, a minimum voltage at low current conditions ( $V_{BR}$ ), and a maximum clamping voltage ( $V_C$ ), at a maximum peak pulse current are specified. In addition, a maximum clamping ratio is indicated. The maximum leakage current at the rated stand-off voltage is also provided to assure low power consumption under normal conditions.

## APPLICATION

This TAZ series has a peak pulse power rating of 1500 watts for one millisecond. It can protect integrated circuits, hybrids, CMOS, MOS, and other voltage sensitive components in a broad range of applications such as telecommunications, power supplies, computers, automotive, and industrial equipment.

## MAXIMUM RATINGS

1500 Watts of Peak Pulse Power Dissipation at 25°C.

$t_{clamping}$  (0 Volts to  $V_{(BR)}$  Min.):

Unidirectional  $< 1 \times 10^{-12}$  Seconds; Bidirectional  $< 5 \times 10^{-9}$  Seconds.

Operating and Storage Temperature -65°C to +175°C.

Forward Surge Rating 200 Amps, 1/20 Second at 25°C.

Steady State Power Dissipation 5.0 W @  $T_1 = 75^\circ\text{C}$ .

(Not Applicable in Chip Form).

## ELECTRICAL CHARACTERISTICS

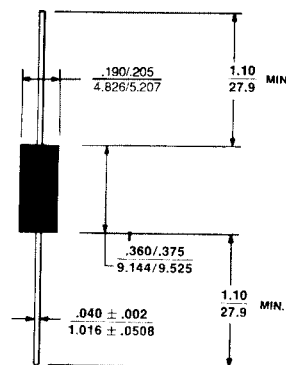
Clamping Factor: 1.33 @ full rated power

1.20 @ 50% rated power

The Clamping Factor is defined as: The ratio of the actual  $V_C$  (Clamping Voltage) to the actual  $V_{(BR)}$  (Breakdown Voltage) as measured on a specific device.

**TRANSIENT  
ABSORPTION ZENER**

**UNIDIRECTIONAL  
AND  
BIDIRECTIONAL**



All dimensions in INCH  
m. m.

## MECHANICAL CHARACTERISTICS

CASE: Molded

WEIGHT: 1.5 Grams (Approx.)

POLARITY: Positive Terminal  
Marked with Band

# 1N6267 thru 1N6303A and 1.5KE6.8 thru 1.5KE400A

## ELECTRICAL CHARACTERISTICS @ 25°C

| Industry Type Number | JEDEC Type Number | Rated Stand-off Voltage<br>V <sub>WM</sub> VOLTS | Breakdown Voltage (BR) VOLTS | Maximum Clamping Voltage (V <sub>CL</sub> ) VOLTS | Maximum Reverse Leakage @ V <sub>WM</sub> I <sub>R</sub> A | Maximum Peak Pulse Current I <sub>PP</sub> A | Maximum Temperature Coefficient α <sub>V</sub> %/°C |
|----------------------|-------------------|--------------------------------------------------|------------------------------|---------------------------------------------------|------------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|
| 1N6267               | 1N5908            | 5.0                                              | 6.0                          | 10.0                                              | 1.0                                                        | 300                                          | .057                                                |
| 1.5KE6.8             | 1N6267            | 5.0                                              | 6.12                         | 7.48                                              | 10                                                         | 1000                                         | .057                                                |
| 1.5KE6.8A            | 1N6267A           | 5.80                                             | 6.45                         | 7.14                                              | 10                                                         | 1000                                         | .057                                                |
| 1.5KE7.5             | 1N6268            | 6.05                                             | 6.75                         | 8.25                                              | 10                                                         | 1117                                         | .050                                                |
| 1.5KE7.5A            | 1N6268A           | 6.45                                             | 7.13                         | 7.88                                              | 10                                                         | 1133                                         | .061                                                |
| 1.5KE8.2             | 1N6269            | 6.63                                             | 7.36                         | 9.02                                              | 10                                                         | 125                                          | .065                                                |
| 1.5KE8.2A            | 1N6269A           | 7.02                                             | 7.79                         | 8.61                                              | 10                                                         | 121                                          | .065                                                |
| 1.5KE9.1             | 1N6270            | 7.37                                             | 8.19                         | 10.00                                             | 10                                                         | 134.8                                        | .068                                                |
| 1.5KE9.1A            | 1N6270A           | 7.76                                             | 8.55                         | 9.55                                              | 10                                                         | 134.4                                        | .068                                                |
| 1.5KE10              | 1N6271            | 8.10                                             | 9.00                         | 11.00                                             | 10                                                         | 150                                          | .073                                                |
| 1.5KE10A             | 1N6271A           | 8.55                                             | 9.50                         | 10.50                                             | 10                                                         | 145                                          | .073                                                |
| 1.5KE11              | 1N6272            | 8.92                                             | 9.90                         | 12.10                                             | 10                                                         | 162.5                                        | .075                                                |
| 1.5KE11A             | 1N6272A           | 9.40                                             | 10.50                        | 11.60                                             | 10                                                         | 156.6                                        | .075                                                |
| 1.5KE12              | 1N6273            | 9.72                                             | 10.80                        | 13.20                                             | 10                                                         | 173                                          | .078                                                |
| 1.5KE12A             | 1N6273A           | 10.20                                            | 11.40                        | 12.60                                             | 10                                                         | 167                                          | .078                                                |
| 1.5KE13              | 1N6274            | 10.50                                            | 11.70                        | 14.30                                             | 10                                                         | 190                                          | .081                                                |
| 1.5KE13A             | 1N6274A           | 11.10                                            | 12.40                        | 13.70                                             | 10                                                         | 182.2                                        | .081                                                |
| 1.5KE15              | 1N6275            | 12.10                                            | 13.50                        | 16.50                                             | 10                                                         | 220                                          | .084                                                |
| 1.5KE15A             | 1N6275A           | 12.80                                            | 14.30                        | 15.80                                             | 10                                                         | 212                                          | .084                                                |
| 1.5KE16              | 1N6276            | 12.90                                            | 14.40                        | 17.60                                             | 10                                                         | 235.5                                        | .086                                                |
| 1.5KE16A             | 1N6276A           | 13.60                                            | 15.20                        | 16.80                                             | 10                                                         | 225                                          | .086                                                |
| 1.5KE18              | 1N6277            | 14.50                                            | 16.20                        | 19.80                                             | 10                                                         | 265                                          | .088                                                |
| 1.5KE18A             | 1N6277A           | 15.30                                            | 17.10                        | 18.90                                             | 10                                                         | 252                                          | .088                                                |
| 1.5KE20              | 1N6278            | 16.20                                            | 18.00                        | 22.00                                             | 10                                                         | 311                                          | .090                                                |
| 1.5KE20A             | 1N6278A           | 17.10                                            | 19.00                        | 21.00                                             | 10                                                         | 277                                          | .090                                                |
| 1.5KE22              | 1N6279            | 17.80                                            | 19.80                        | 24.20                                             | 10                                                         | 319                                          | .092                                                |
| 1.5KE22A             | 1N6279A           | 18.80                                            | 20.90                        | 23.10                                             | 10                                                         | 306                                          | .092                                                |
| 1.5KE24              | 1N6280            | 19.40                                            | 21.60                        | 26.40                                             | 10                                                         | 347                                          | .094                                                |
| 1.5KE24A             | 1N6280A           | 20.50                                            | 22.80                        | 25.20                                             | 10                                                         | 332                                          | .094                                                |
| 1.5KE27              | 1N6281            | 21.80                                            | 24.30                        | 29.70                                             | 10                                                         | 391                                          | .096                                                |
| 1.5KE27A             | 1N6281A           | 23.10                                            | 25.70                        | 28.40                                             | 10                                                         | 375                                          | .096                                                |
| 1.5KE30              | 1N6282            | 24.30                                            | 27.00                        | 33.00                                             | 10                                                         | 435                                          | .097                                                |
| 1.5KE30A             | 1N6282A           | 25.60                                            | 28.50                        | 31.50                                             | 10                                                         | 414                                          | .097                                                |
| 1.5KE33              | 1N6283            | 26.80                                            | 29.70                        | 36.30                                             | 10                                                         | 477                                          | .098                                                |
| 1.5KE33A             | 1N6283A           | 28.20                                            | 31.40                        | 34.70                                             | 10                                                         | 457                                          | .098                                                |
| 1.5KE36              | 1N6284            | 29.10                                            | 32.40                        | 39.60                                             | 10                                                         | 520                                          | .099                                                |
| 1.5KE36A             | 1N6284A           | 30.80                                            | 34.20                        | 37.80                                             | 10                                                         | 499                                          | .099                                                |
| 1.5KE39              | 1N6285            | 31.60                                            | 35.10                        | 42.90                                             | 10                                                         | 584                                          | .100                                                |
| 1.5KE39A             | 1N6285A           | 33.30                                            | 37.10                        | 41.00                                             | 10                                                         | 539                                          | .100                                                |
| 1.5KE43              | 1N6286            | 34.80                                            | 38.70                        | 47.30                                             | 10                                                         | 619                                          | .101                                                |
| 1.5KE43A             | 1N6286A           | 36.80                                            | 40.90                        | 45.00                                             | 10                                                         | 593                                          | .101                                                |
| 1.5KE47              | 1N6287            | 38.10                                            | 42.30                        | 51.70                                             | 10                                                         | 678                                          | .101                                                |
| 1.5KE47A             | 1N6287A           | 40.20                                            | 44.70                        | 49.40                                             | 10                                                         | 648                                          | .102                                                |
| 1.5KE51              | 1N6288            | 41.30                                            | 45.90                        | 56.10                                             | 10                                                         | 735                                          | .102                                                |
| 1.5KE51A             | 1N6288A           | 43.60                                            | 48.50                        | 53.60                                             | 10                                                         | 701                                          | .102                                                |
| 1.5KE56              | 1N6289            | 45.80                                            | 50.40                        | 61.40                                             | 10                                                         | 801                                          | .103                                                |
| 1.5KE56A             | 1N6289A           | 47.80                                            | 53.20                        | 58.80                                             | 10                                                         | 770                                          | .103                                                |
| 1.5KE62              | 1N6290            | 50.20                                            | 55.80                        | 68.20                                             | 10                                                         | 890                                          | .104                                                |
| 1.5KE62A             | 1N6290A           | 53.00                                            | 58.90                        | 65.10                                             | 10                                                         | 850                                          | .104                                                |
| 1.5KE66              | 1N6291            | 55.10                                            | 61.20                        | 74.80                                             | 10                                                         | 980                                          | .104                                                |
| 1.5KE66A             | 1N6291A           | 58.10                                            | 64.60                        | 71.40                                             | 10                                                         | 920                                          | .104                                                |
| 1.5KE75              | 1N6292            | 60.70                                            | 67.50                        | 82.50                                             | 10                                                         | 1080                                         | .105                                                |
| 1.5KE75A             | 1N6292A           | 64.10                                            | 71.30                        | 78.00                                             | 10                                                         | 1030                                         | .105                                                |
| 1.5KE82              | 1N6293            | 66.40                                            | 73.80                        | 90.20                                             | 10                                                         | 1180                                         | .105                                                |
| 1.5KE82A             | 1N6293A           | 70.10                                            | 77.90                        | 86.10                                             | 10                                                         | 1130                                         | .105                                                |
| 1.5KE91              | 1N6294            | 73.70                                            | 81.90                        | 100.00                                            | 10                                                         | 1331                                         | .106                                                |
| 1.5KE91A             | 1N6294A           | 77.80                                            | 86.50                        | 95.00                                             | 10                                                         | 1250                                         | .106                                                |
| 1.5KE100             | 1N6295            | 81.00                                            | 90.00                        | 110.00                                            | 10                                                         | 1440                                         | .106                                                |
| 1.5KE100A            | 1N6295A           | 85.50                                            | 95.00                        | 105.00                                            | 10                                                         | 1370                                         | .106                                                |
| 1.5KE110             | 1N6296            | 89.20                                            | 99.00                        | 121.00                                            | 10                                                         | 1580                                         | .107                                                |
| 1.5KE110A            | 1N6296A           | 94.00                                            | 105.00                       | 116.00                                            | 10                                                         | 1520                                         | .107                                                |
| 1.5KE120             | 1N6297            | 97.20                                            | 108.00                       | 132.00                                            | 10                                                         | 1730                                         | .107                                                |
| 1.5KE120A            | 1N6297A           | 102.00                                           | 114.00                       | 126.00                                            | 10                                                         | 1650                                         | .107                                                |
| 1.5KE130             | 1N6298            | 105.00                                           | 117.00                       | 143.00                                            | 10                                                         | 1870                                         | .107                                                |
| 1.5KE130A            | 1N6298A           | 111.00                                           | 124.00                       | 137.00                                            | 10                                                         | 1770                                         | .107                                                |
| 1.5KE150             | 1N6299            | 121.00                                           | 135.00                       | 165.00                                            | 10                                                         | 2150                                         | .108                                                |
| 1.5KE150A            | 1N6299A           | 128.00                                           | 143.00                       | 158.00                                            | 10                                                         | 2070                                         | .108                                                |
| 1.5KE160             | 1N6300            | 131.00                                           | 144.00                       | 176.00                                            | 10                                                         | 2300                                         | .108                                                |
| 1.5KE160A            | 1N6300A           | 136.00                                           | 152.00                       | 168.00                                            | 10                                                         | 2190                                         | .108                                                |
| 1.5KE170             | 1N6301            | 138.00                                           | 153.00                       | 187.00                                            | 10                                                         | 2440                                         | .108                                                |
| 1.5KE170A            | 1N6301A           | 145.00                                           | 162.00                       | 179.00                                            | 10                                                         | 2340                                         | .108                                                |
| 1.5KE180             | 1N6302            | 146.00                                           | 162.00                       | 198.00                                            | 10                                                         | 2580                                         | .108                                                |
| 1.5KE180A            | 1N6302A           | 154.00                                           | 171.00                       | 189.00                                            | 10                                                         | 2460                                         | .108                                                |
| 1.5KE200             | 1N6303            | 162.00                                           | 180.00                       | 220.00                                            | 10                                                         | 2870                                         | .108                                                |
| 1.5KE200A            | 1N6303A           | 171.00                                           | 190.00                       | 210.00                                            | 10                                                         | 2740                                         | .108                                                |
| 1.5KE220             |                   | 175.00                                           | 198.00                       | 242.00                                            | 10                                                         | 3440                                         | .110                                                |
| 1.5KE220A            |                   | 185.00                                           | 209.00                       | 231.00                                            | 10                                                         | 3280                                         | .110                                                |
| 1.5KE250             |                   | 202.00                                           | 225.00                       | 275.00                                            | 10                                                         | 3600                                         | .110                                                |
| 1.5KE250A            |                   | 214.00                                           | 237.00                       | 263.00                                            | 10                                                         | 3440                                         | .110                                                |
| 1.5KE300             |                   | 243.00                                           | 270.00                       | 330.00                                            | 10                                                         | 4300                                         | .111                                                |
| 1.5KE300A            |                   | 256.00                                           | 285.00                       | 315.00                                            | 10                                                         | 4140                                         | .111                                                |
| 1.5KE350             |                   | 284.00                                           | 315.00                       | 385.00                                            | 10                                                         | 5040                                         | .111                                                |
| 1.5KE350A            |                   | 300.00                                           | 332.00                       | 368.00                                            | 10                                                         | 4820                                         | .111                                                |
| 1.5KE400             |                   | 324.00                                           | 360.00                       | 440.00                                            | 10                                                         | 5740                                         | .111                                                |
| 1.5KE400A            |                   | 342.00                                           | 380.00                       | 420.00                                            | 10                                                         | 5480                                         | .111                                                |

V<sub>I</sub> at 100 amps peak, 8.3 ms sine wave equals 3.5 volts max. (unidirectional only). For Bidirectional part number add C or CA as suffix (e.g., 1.5KE33C or 1.5KE33CA). For Bidirectional types having V<sub>WM</sub> of 8 volts and under, the I<sub>D</sub> leakage current is doubled. 1N62XX or 1N5908 not available as bidirectional. For bipolar capacitance will be .5 that shown in Fig. 2 for zero bias.

### SYMBOLS AND ABBREVIATIONS

|                                                |                                       |
|------------------------------------------------|---------------------------------------|
| V <sub>WM</sub> = Rated Stand-off Voltage      | V <sub>(BR)</sub> = Breakdown Voltage |
| I <sub>PP</sub> = Peak Pulse Current           | t <sub>T</sub> = Test Current         |
| P <sub>PP</sub> = Peak Pulse Power             | I <sub>D</sub> = Reverse Leakage      |
| V <sub>C(MAX)</sub> = Maximum Clamping Voltage |                                       |

NOTE 1: Normal selection criteria for TAZ devices is by rated stand-off voltage (V<sub>WM</sub>) and should be equal or greater than DC or continuous peak operating voltage.  
NOTE 2: TAZ devices are tested to maximum peak pulse current (I<sub>PP</sub>) with clamping voltage monitored. This surge capability is one of the most significant electrical characteristics of the device and should be considered as part of customer quality inspections.

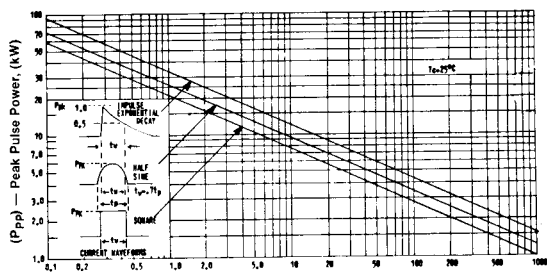
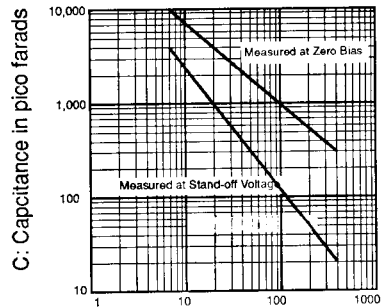


FIGURE 1  
PEAK PULSE POWER VS. PULSE TIME (T<sub>w</sub>) IN μs



BV: Breakdown Voltage in Volts

FIGURE 2  
TYPICAL CAPACITANCE VS. BREAKDOWN VOLTAGE

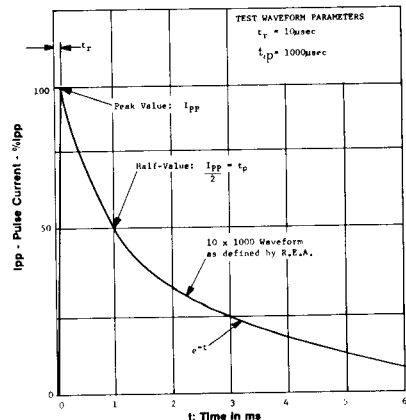


FIGURE 3 PULSE WAVE FORM

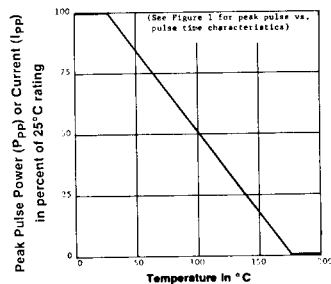


FIGURE 4 DERATING CURVE



## 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.

Срок поставки со стоков в **Европе и Америке – от 3 до 14 дней.**

Срок поставки из **Азии – от 10 дней.**

Благодаря развитой сети поставщиков, помогаем в поиске и приобретении экзотичных или снятых с производства компонентов.

Предоставляем спец цены на элементы для создания инженерных сэмплов.

**Упорный труд, качественный результат дают нам право быть уверенными в себе и надежными для наших клиентов.**

### Наша компания это:

- Гарантия качества поставляемой продукции
- Широкий ассортимент
- Минимальные сроки поставок
- Техническая поддержка
- Подбор комплектации
- Индивидуальный подход
- Гибкое ценообразование

Наша организация особенно сильна в поставках модулей, микросхем, пассивных компонентов, ксайленсах (XC), EPF, EPM и силовой электроники.

Большой выбор предлагаемой продукции, различные виды оплаты и доставки, позволят Вам сэкономить время и получить максимум выгоды от сотрудничества с нами!

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





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гарантия бесперебойности производства и  
качества выпускаемой продукции

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,

Менеджер отдела продаж ООО

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