32V PNP SURFACE MOUNT TRANSISTOR IN SOT-89

Features

- BV_{CEO} > -32V
- Max Continuous Current I_C = -1A
- Epitaxial Planar Die Construction
- Complementary NPN Type Available (2DD1664)
- Ideally Suited for Automated Assembly Processes
- Ideal for Medium Power Switching or Amplification Applications
- **Lead Free, RoHS Compliant (Note 1)**
- **Halogen and Antimony Free, "Green" Devices (Note 2)**

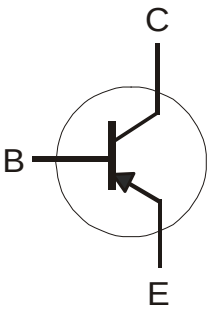
Mechanical Data

- Case: SOT-89
- Case material: molded Plastic. "Green" molding Compound.
- UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish
- Weight: 0.055 grams (Approximate)

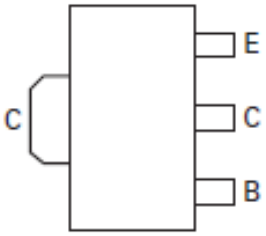
SOT-89



Top View



Device Symbol



Pin out – Top view

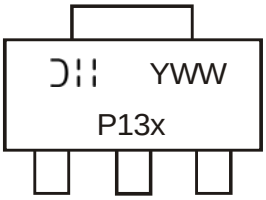
Ordering Information

Product	Grade	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
2DB1132P-13	Commercial	P13P	13	12	2,500
2DB1132Q-13	Commercial	P13Q	13	12	2,500
2DB1132R-13	Commercial	P13R	13	12	2,500

Notes: 1. No purposefully added lead.
2. "Green" devices, Halogen and Antimony Free, Diodes Inc's "Green" Policy can be found on our website at http://www.diodes.com

Marking Information

(Top View)



P13x = Product Type Marking Code:
Where P13P = 2DB1132P
P13Q = 2DB1132Q
P13R = 2DB1132R
YWW = Date Code Marking
Y = Last digit of year ex: 7 = 2007
WW = Week code 01 - 52

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Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-32	V
Emitter-Base Voltage	V_{EBO}	-5	V
Continuous Collector Current	I_C	-1	A
Peak Pulse Current (Note 4)	I_{CM}	-2	A

Thermal Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 3)	P_D	1	W
Thermal Resistance, Junction to Ambient (Note 3)	$R_{\theta JA}$	125	°C/W
Thermal Resistance, Junction to Leads (Note 5)	$R_{\theta JL}$	22	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Notes: 3. For a device surface mounted on FR-4 PCB with minimum suggested pad layout; high coverage of single sided 1 oz copper, in still air conditions
4. Measured under pulsed conditions. Pulse width = 300µs. Duty cycle ≤ 2%.
5. Thermal resistance from junction to solder-point (at the end of the collector lead).

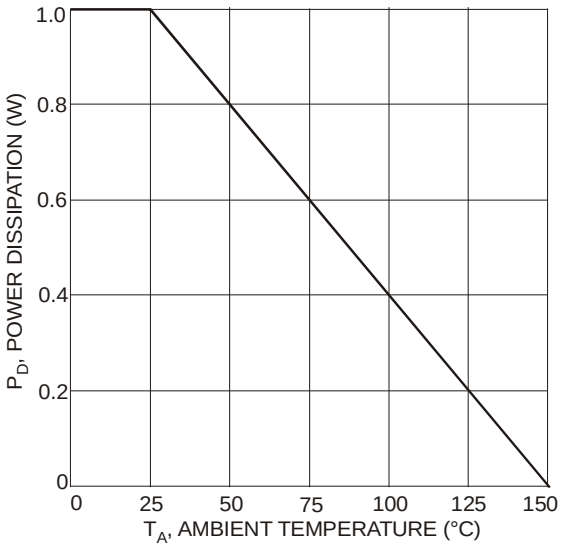


Fig. 1 Power Dissipation vs. Ambient Temperature (Note 3)

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Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage		BV_{CBO}	-40	-	-	V	I_C = -50μA
Collector-Emitter Breakdown Voltage (Note 6)		BV_{CEO}	-32	-	-	V	I_C = -1mA
Emitter-Base Breakdown Voltage		BV_{EBO}	-5	-	-	V	I_E = -50μA
Collector Cut-off Current		I_{CBO}	-	-	-0.5	μA	V_{CB} =-20V
Emitter Cut-off Current		I_{EBO}	-	-	-0.5	μA	V_{EB} = -4V
Static Forward Current Transfer Ratio (Note 6)	2DB1132P	h_{FE}	82	-	180	-	I_C = -100mA, V_{CE} = -3V
	2DB1132Q		120		270		
	2DB1132R		180		390		
Collector-Emitter saturation Voltage (Note 6)		$V_{CE(sat)}$	-	-125	-500	mV	I_C =-500mA, I_B = -50mA
Transition frequency		f_T	-	190	-	MHz	I_E = 50mA, V_{CE} = -5V,f=30MHz
Output Capacitance		C_{ob}	-	12	30	pF	I_E = 0A, V_{CB} = -10V,f=1MHz

Notes: 6. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle ≤ 2%

Electrical Characteristics

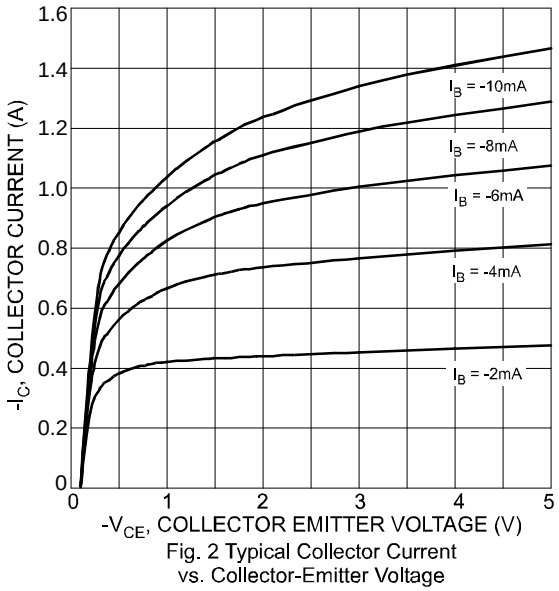


Fig. 2 Typical Collector Current vs. Collector-Emitter Voltage

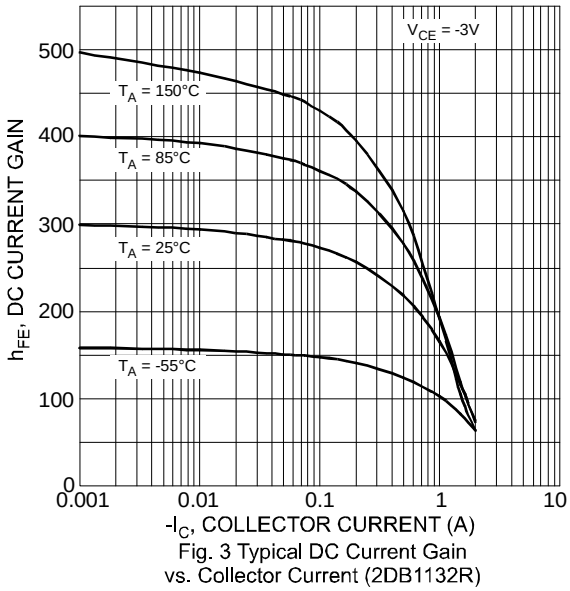


Fig. 3 Typical DC Current Gain vs. Collector Current (2DB1132R)

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Electrical Characteristic - (cont.)

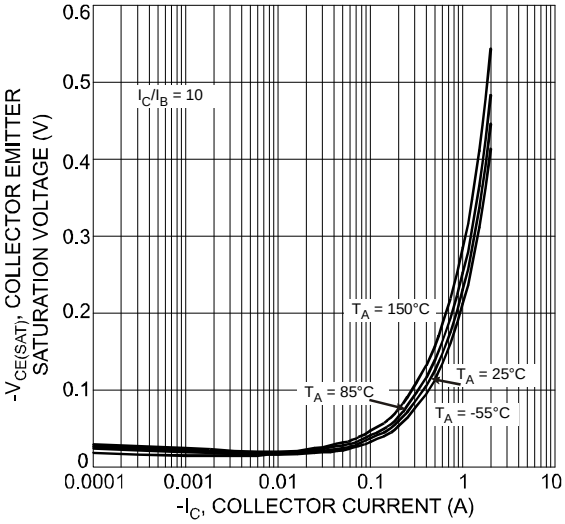


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

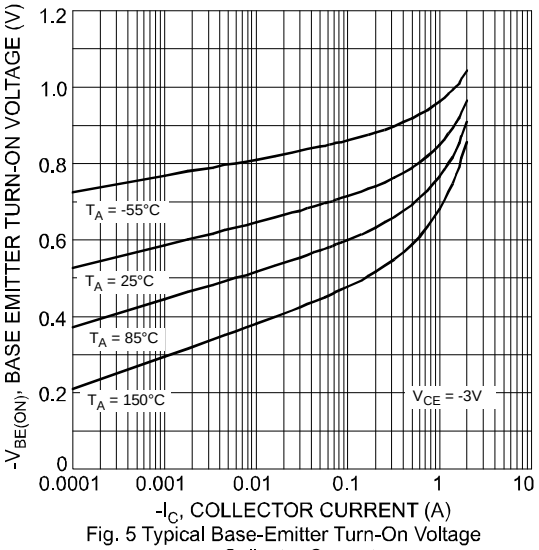


Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current

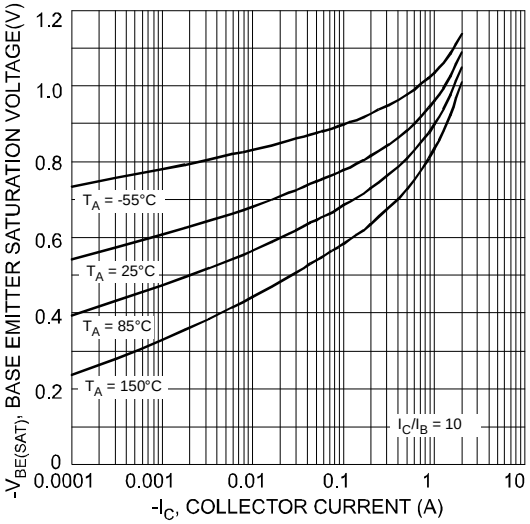


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

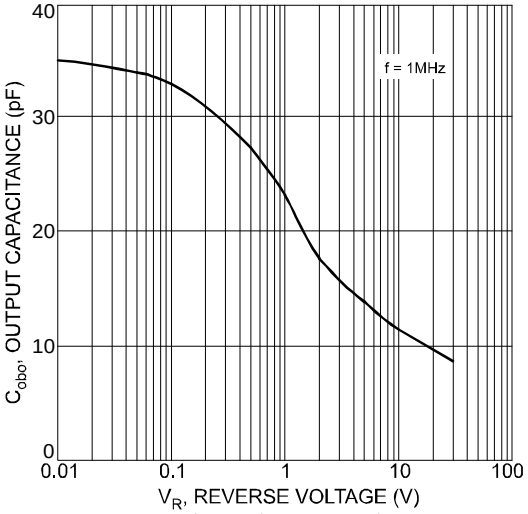


Fig. 7 Typical Output Capacitance Characteristics

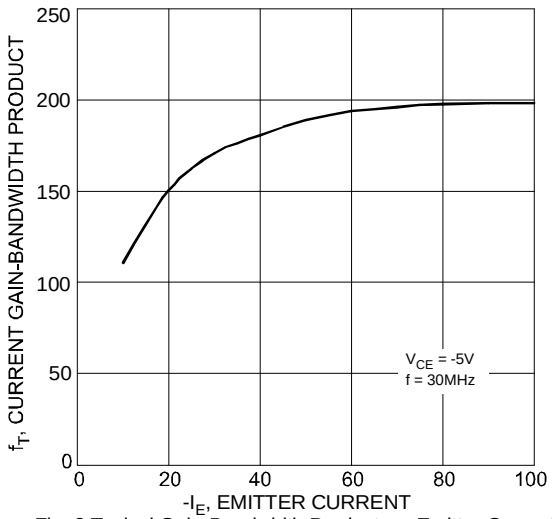
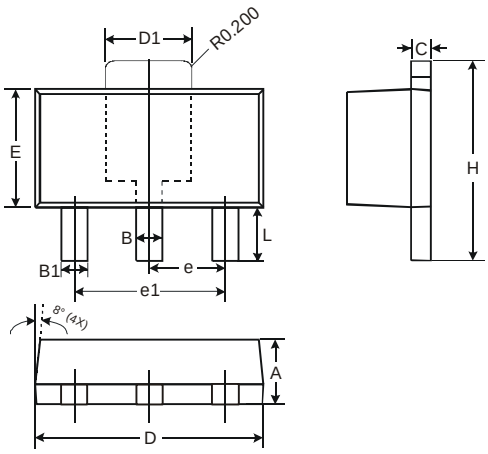


Fig. 8 Typical Gain-Bandwidth Product vs. Emitter Current

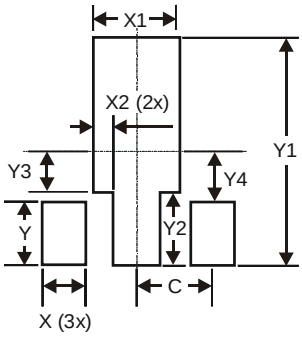
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Package Outline Dimensions



SOT89		
Dim	**Min**	Max
A	1.40	1.60
B	0.44	0.62
B1	0.35	0.54
C	0.35	0.43
D	4.40	4.60
D1	1.52	1.83
E	2.29	2.60
e	1.50 Typ	
e1	3.00 Typ	
H	3.94	4.25
L	0.89	1.20
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
X	0.900
X1	1.733
X2	0.416
Y	1.300
Y1	4.600
Y2	1.475
Y3	0.950
Y4	1.125
C	1.500

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