

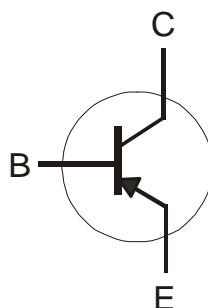
Features

- $BV_{CEO} > -32V$
- 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

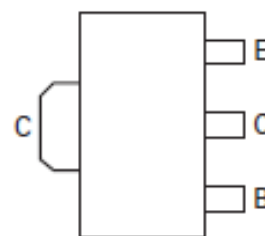
- Case: SOT-89
- Case material: molded Plastic. "Green" molding Compound.
- UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish
- Weight: 0.055 grams (Approximate)

SOT-89



Top View

Device Symbol



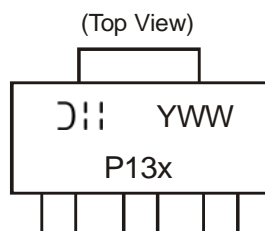
Pin out – Top view

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



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

Maximum Ratings @ $T_A = 25^\circ\text{C}$ 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 @ $T_A = 25^\circ\text{C}$ 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	$^\circ\text{C/W}$
Thermal Resistance, Junction to Leads (Note 5)	$R_{\theta JL}$	22	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

- 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 = 300 μs . Duty cycle $\leq 2\%$.
 5. Thermal resistance from junction to solder-point (at the end of the collector lead).

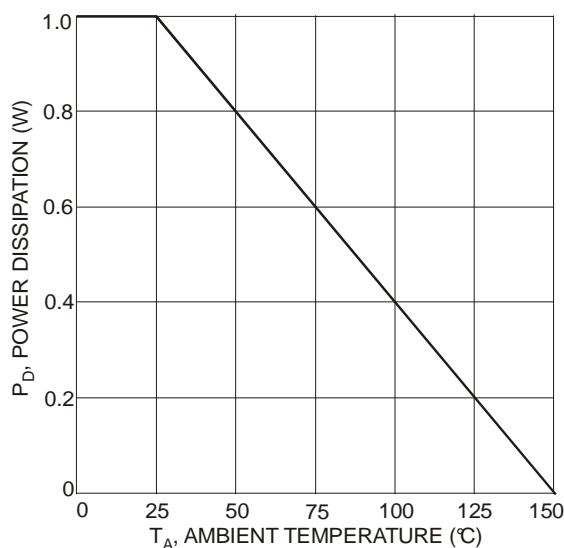


Fig. 1 Power Dissipation vs. Ambient Temperature (Note 3)

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)	h _{FE}	82	-	180	-	I _C = -100mA, V _{CE} = -3V
		120		270		
		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

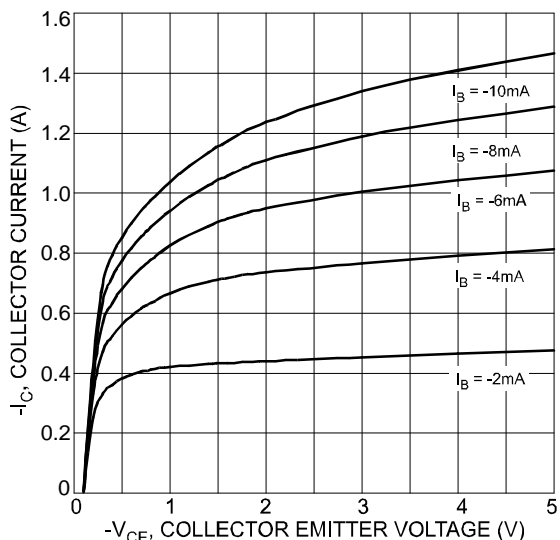


Fig. 2 Typical Collector Current vs. Collector-Emitter Voltage

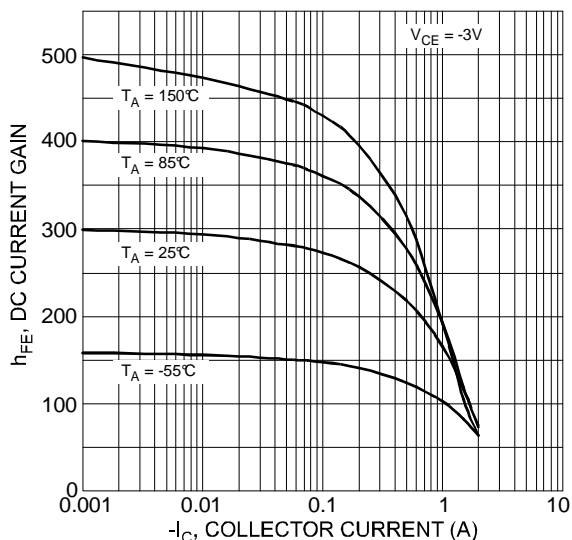


Fig. 3 Typical DC Current Gain vs. Collector Current (2DB1132R)

Electrical Characteristic - (cont.)

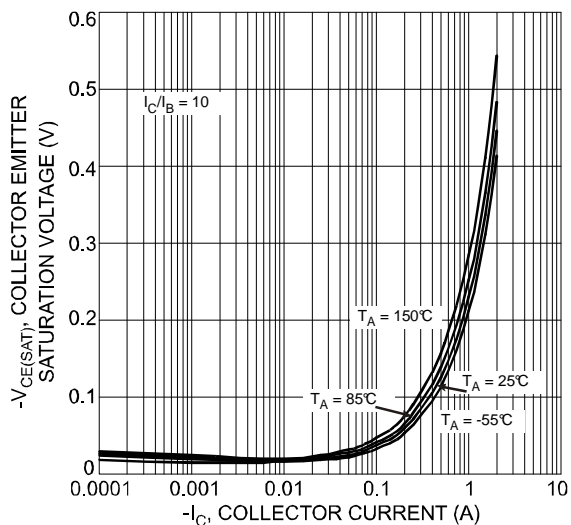


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

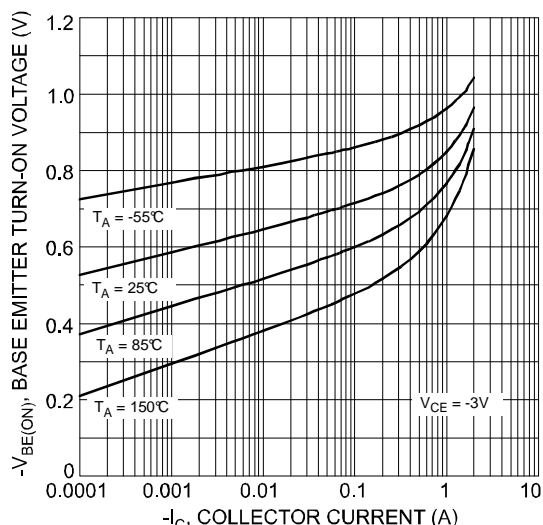


Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current

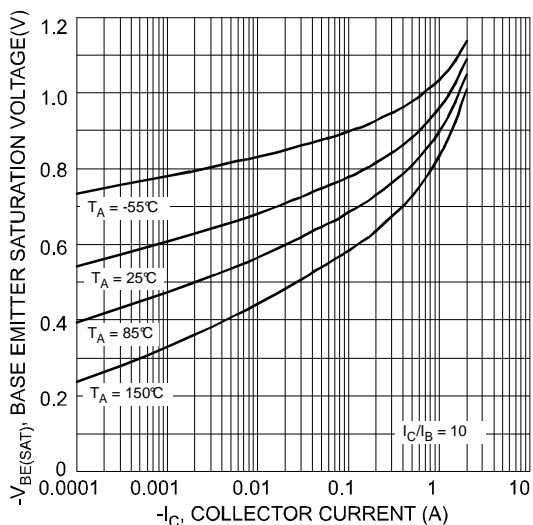


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

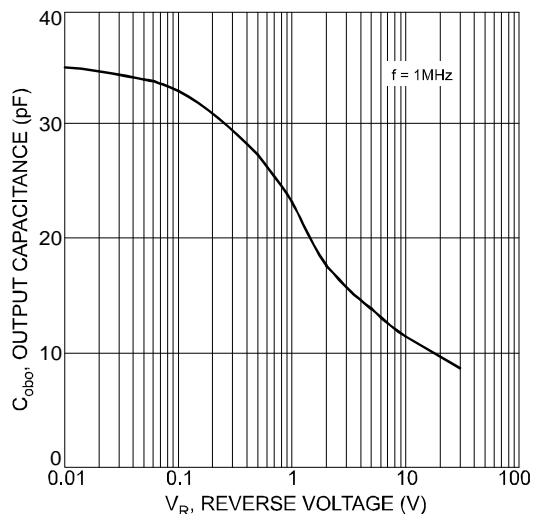


Fig. 7 Typical Output Capacitance Characteristics

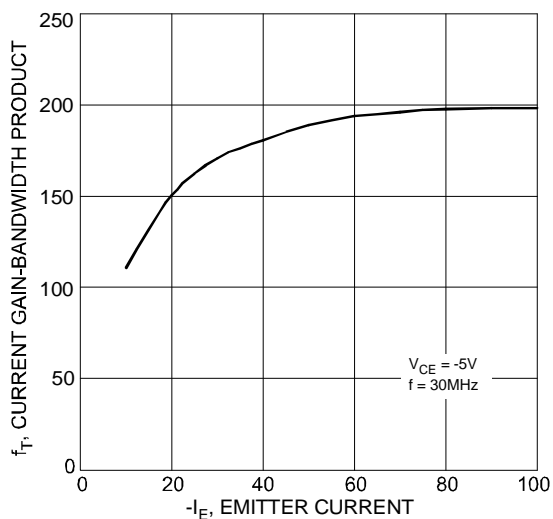
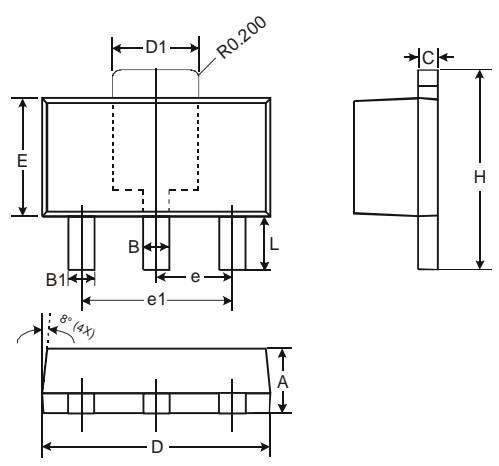


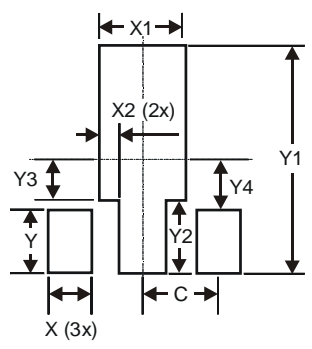
Fig. 8 Typical Gain-Bandwidth Product vs. Emitter Current

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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