





PNP SURFACE MOUNT TRANSIS

Features

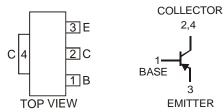
- **Epitaxial Planar Die Construction**
- Complementary NPN Type Available (2DD2150)
- Ideally Suited for Automated Assembly Processes
- Ideal for Medium Power Switching or Amplification Applications
- Lead Free By Design/RoHS Compliant (Note 1)
- "Green" Device (Note 2)

Mechanical Data

- Case: SOT89-3L
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Finish Matte Tin annealed over Copper leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.072 grams (approximate)







Schematic and Pin Configuration

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	-20	V
Collector-Emitter Voltage	V _{CEO}	-20	V
Emitter-Base Voltage	V _{EBO}	-6	V
Peak Pulse Current	I _{CM}	-5	A
Continuous Collector Current	Ic	-3	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 3) @ T _A = 25°C	P _D	1	W
Thermal Resistance, Junction to Ambient Air (Note 3) @ T _A = 25°C	$R_{ heta JA}$	125	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

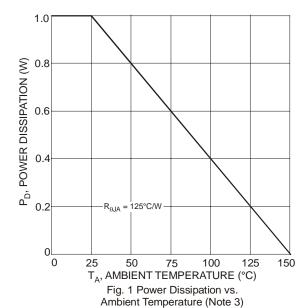
Electrical Characteristics @TA = 25°C unless otherwise specified

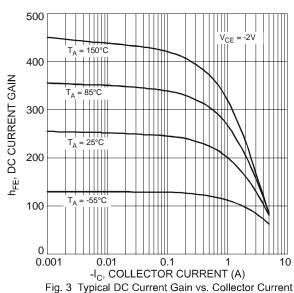
Characteristic	Symbol	Min	Тур	Max	Unit	Conditions
OFF CHARACTERISTICS (Note 4)						
Collector-Base Breakdown Voltage	V _{(BR)CBO}	-20	_	_	V	$I_C = -50\mu A, I_E = 0$
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	-20		_	V	$I_C = -1 \text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	-6		_	V	$I_E = -50\mu A, I_C = 0$
Collector Cut-Off Current	I _{CBO}	_	_	-0.1	μΑ	$V_{CB} = -20V, I_{E} = 0$
Emitter Cut-Off Current	I _{EBO}	_	_	-0.1	μΑ	$V_{EB} = -5V, I_C = 0$
ON CHARACTERISTICS (Note 4)						
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	_	-0.18	-0.5	V	$I_C = -2A$, $I_B = -0.1A$
DC Current Gain	h _{FE}	180	_	390	_	V _{CE} = -2V, I _C = -0.1A
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C _{obo}	_	28	_	pF	$V_{CB} = -10V, I_E = 0,$ f = 1MHz
Current Gain-Bandwidth Product	f⊤	_	220	_	MHz	$V_{CE} = -2V$, $I_{E} = 0.1A$, $f = 100MHz$

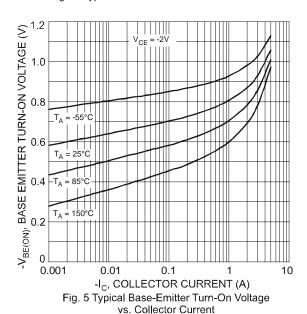
1. No purposefully added lead.

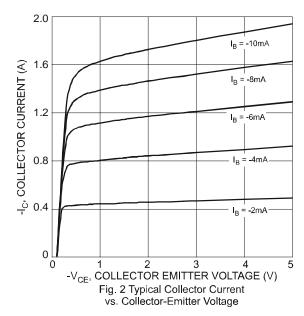
- Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
- Device mounted on FR-4 PCB; pad layout as shown on page 4 or in Diodes Inc. suggested pad layout document AP02001, which can 3. be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
- Measured under pulsed conditions. Pulse width = $300\mu s$. Duty cycle $\leq 2\%$.











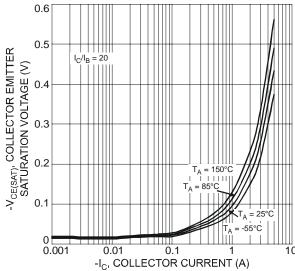


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

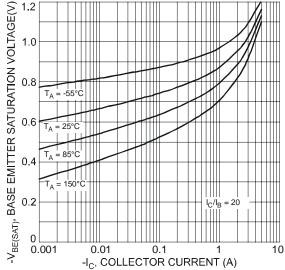
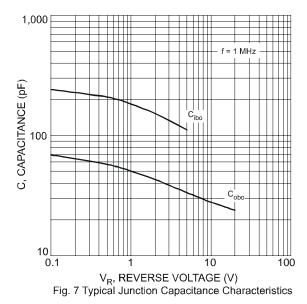
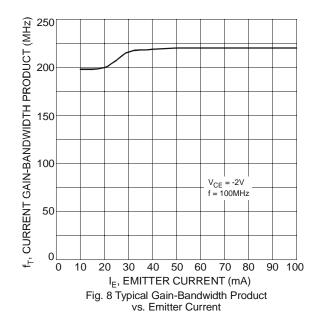


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current





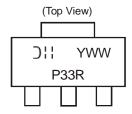


Ordering Information (Note 5)

Device	Packaging	Shipping
2DB1424R-13	SOT89-3L	2500/Tape & Reel

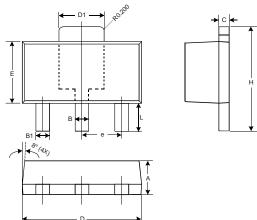
For packaging details, please see below or go to our website at http://www.diodes.com/ap02007.pdf.

Marking Information



P33R = Product Type Marking Code YWW = Date Code Marking Y = Last digit of year ex: 7 = 2007WW = Week code 01 - 52

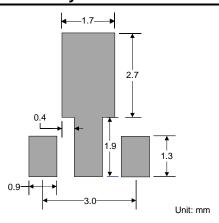
Package Outline Dimensions



SOT89-3L				
Dim	Min	Max	Тур	
Α	1.40	1.60	1.50	
В	0.45	0.55	0.50	
B1	0.37	0.47	0.42	
С	0.35	0.43	0.38	
D	4.40	4.60	4.50	
D1	1.50	1.70	1.60	
Е	2.40	2.60	2.50	
е	_	_	1.50	
Н	3.95	4.25	4.10	
L	0.90	1.20	1.05	
All Dimensions in mm				



Suggested Pad Layout



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