



2DB1713

LOW V_{CE(SAT)} PNP SURFACE MOUNT TRANSISTOR

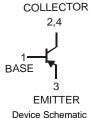
Features

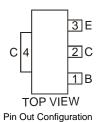
- Epitaxial Planar Die Construction
- Ideally Suited for Automated Assembly Processes
- Ideal for Medium Power Switching or Amplification Applications
- Complementary NPN Type Available (2DD2678)
- Lead Free By Design/RoHS Compliant (Note 1)
- "Green" Device (Note 2)

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)







view Device Schen

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-15	V
Collector-Emitter Voltage	V _{CEO}	-12	V
Emitter-Base Voltage	V _{EBO}	-6	V
Peak Pulse Current	Ісм	-6	Α
Continuous Collector Current	Ic	-3	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 3) @ T _A = 25°C	P _D	0.9	W
Thermal Resistance, Junction to Ambient Air (Note 3) @ T _A = 25°C	$R_{ hetaJA}$	139	°C/W
Power Dissipation (Note 4) @ T _A = 25°C	P_{D}	2	W
Thermal Resistance, Junction to Ambient Air (Note 4) @ T _A = 25°C	$R_{ hetaJA}$	62.5	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Conditions
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage	V _{(BR)CBO}	-15	_	_	V	$I_C = -10\mu A, I_E = 0$
Collector-Emitter Breakdown Voltage (Note 5)	V _{(BR)CEO}	-12	_	_	V	$I_C = -1 \text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	-6	_	_	V	$I_E = -10\mu A, I_C = 0$
Collector Cut-Off Current	I _{CBO}	_	_	-0.1	μΑ	$V_{CB} = -15V, I_{E} = 0$
Emitter Cut-Off Current	I _{EBO}	_	_	-0.1	μΑ	$V_{EB} = -6V, I_C = 0$
ON CHARACTERISTICS (Note 5)						
Collector-Emitter Saturation Voltage	V _{CE(SAT)}		-120	-250	mV	$I_C = -1.5A$, $I_B = -30mA$
DC Current Gain	h _{FE}	270	_	680	_	$V_{CE} = -2V, I_{C} = -500 \text{mA}$
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C_{obo}		40	_	pF	$V_{CB} = -10V, I_E = 0,$ f = 1MHz
Current Gain-Bandwidth Product	f _T	_	180	_	MHz	$V_{CE} = -2V, I_{C} = -100mA,$ f = 100MHz

Notes

- 1. No purposefully added lead.
- 2. 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 with minimum recommended pad layout.
- 4. Device mounted on FR-4 PCB with 1 inch² copper pad layout.
- 5. Measured under pulsed conditions. Pulse width = $300\mu s$. Duty cycle $\leq 2\%$.



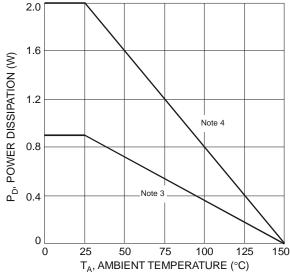


Fig. 1 Power Dissipation vs. Ambient Temperature

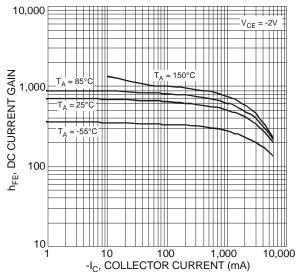
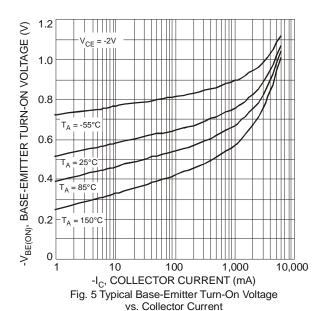
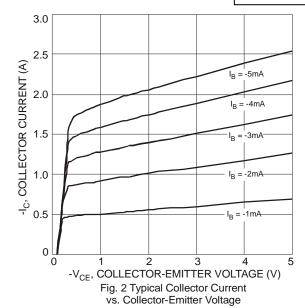


Fig. 3 Typical DC Current Gain vs. Collector Current





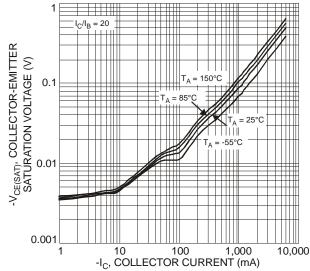


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

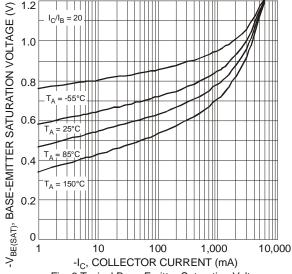
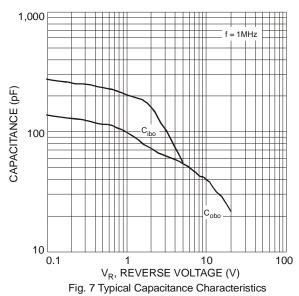


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current





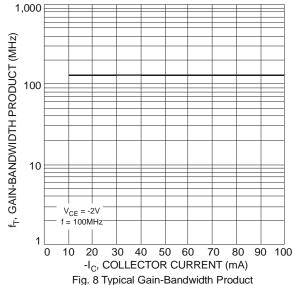


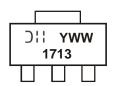
Fig. 8 Typical Gain-Bandwidth Product vs. Collector Current

Ordering Information (Note 6)

ı	Part Number	Case	Packaging
	2DB1713-13	SOT89-3L	2500/Tape & Reel

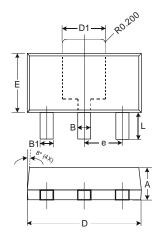
6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf. Notes:

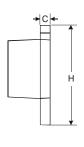
Marking Information



1713 = Product Type Marking Code YWW = Date Code Marking Y = Last digit of year (ex: 8 = 2008) WW = Week code 01 - 52

Package Outline Dimensions

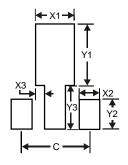




SOT89-3L				
Dim	Min	Max	Тур	
Α	1.40	1.60	1.50	
В	0.45	0.55	0.50	
B1	0.37	0.47	0.42	
С	0.35	0.43	0.38	
D	4.40	4.60	4.50	
D1	1.50	1.70	1.60	
Е	2.40	2.60	2.50	
е	_	_	1.50	
Н	3.95	4.25	4.10	
L	0.90	1.20	1.05	
All Dimensions in mm				



Suggested Pad Layout



Dimensions	Value (in mm)
X1	1.7
X2	0.9
Х3	0.4
Y1	2.7
Y2	1.3
Y3	1.9
С	3.0

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