200V PNP SILICON PLANAR HIGH VOLTAGE TRANSISTOR IN SOT89

Features

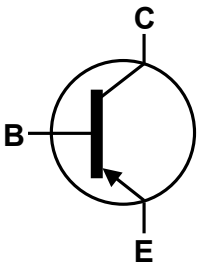
- BV_{CEO} = -200V
- I_C = -0.3A High Continuous Current
- Low Saturation Voltage $V_{CE(sat)}$ < -200mV @ -0.1A
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen- and Antimony-Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**

Mechanical Data

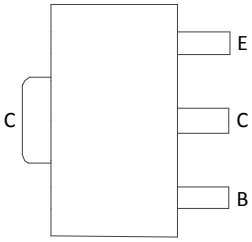
- Case: SOT89
- Case Material: Molded Plastic. "Green" Molding Compound. UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.05 grams (Approximate)

SOT89

Top View



Device Symbol



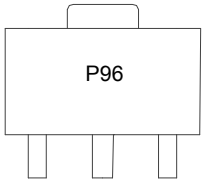
Top View
Pin Out

Ordering Information (Note 4)

Part Number	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity Per Reel
FCX596TA	Standard	P96	7	12	1,000

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information



P96 = Product Type Marking Code

Absolute Maximum Ratings (@ T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-220	V
Collector-Emitter Voltage	V_{CEO}	-200	V
Emitter-Base Voltage	V_{EBO}	-5	V
Continuous Collector Current	I_C	-0.3	A
Peak Pulse Collector Current (single pulse)	I_{CM}	-1	A
Base Current	I_B	-200	A

Thermal Characteristics (@ T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	1	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics (@ T_A = +25°C, unless otherwise specified.)

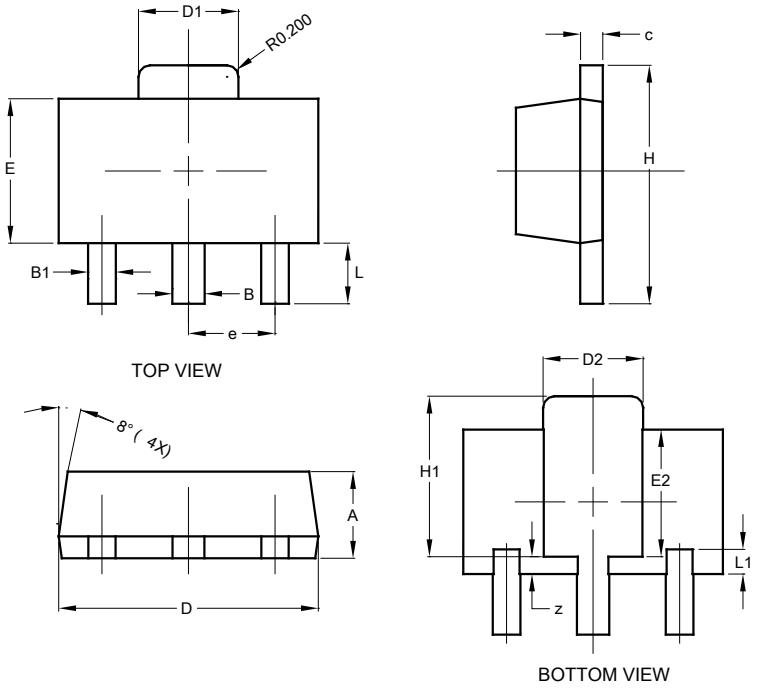
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	-220	—	—	V	I_C = -100µA
Collector- Emitter Breakdown Voltage (Note 6)	BV_{CEO}	-200	—	—	V	I_C = -10mA
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	—	—	V	I_E = -100µA
Collector Cut-Off Current	I_{CBO}	—	—	-100	nA	V_{CB} = -200V
Emitter Cut-Off Current	I_{EBO}	—	—	-100	nA	V_{EB} = -4V
Collector Emitter Cut-Off Current	I_{CES}	—	—	-100	nA	V_{CES} = -200V
Collector-Emitter Saturation Voltage (Note 6)	$V_{CE(sat)}$	—	—	-0.2 -0.35	mV	I_C = -100mA, I_B = -10mA I_C = -250mA, I_B = -25mA
Base-Emitter Saturation Voltage (Note 6)	$V_{BE(sat)}$	—	—	-1.0	mV	I_C = -250mA, I_B = -25mA
Base-Emitter Turn-On Voltage (Note 6)	$V_{BE(on)}$	—	—	-0.9	mV	I_C = -250mA, V_{CE} = -10V
DC Current Gain (Note 6)	h_{FE}	100 100 85 35	—	— — 300 —	—	I_C = -1mA, V_{CE} = -10V I_C = -100mA, V_{CE} = -10V I_C = -250mA, V_{CE} = -10V I_C = -400mA, V_{CE} = -10V
Transitional frequency	f_T	150	—	—	MHz	I_C = -50mA, V_{CE} = -10V f = 100MHz
Output Capacitance	C_{obo}	—	—	10	pF	V_{CB} = -10V, f = 1MHz

Notes: 5. For a device surface mounted on 15mm x 15mm x 0.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions; device measured when operating in steady state condition.
6. Measured under pulsed conditions. Pulse width ≤ 300µs. Duty cycle ≤ 2%.

Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT89



SOT89			
Dim	**Min**	**Max**	**Typ**
A	1.40	1.60	1.50
B	0.50	0.62	0.56
B1	0.42	0.54	0.48
c	0.35	0.43	0.38
D	4.40	4.60	4.50
D1	1.62	1.83	1.733
D2	1.61	1.81	1.71
E	2.40	2.60	2.50
E2	2.05	2.35	2.20
e	-	-	1.50
H	3.95	4.25	4.10
H1	2.63	2.93	2.78
L	0.90	1.20	1.05
L1	0.327	0.527	0.427
z	0.20	0.40	0.30
All Dimensions in mm			

Suggested Pad Layout

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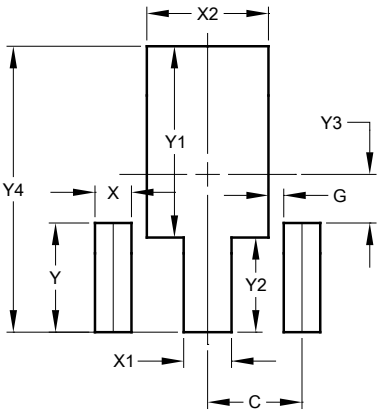
SOT89



Dimensions	Value (in mm)
C	1.500
G	0.244
X	0.580
X1	0.760
X2	1.933
Y	1.730
Y1	3.030
Y2	1.500
Y3	0.770
Y4	4.530

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