


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](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

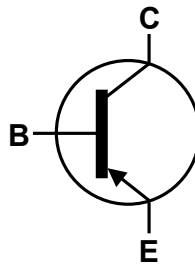
Mechanical Data

- 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 
- Weight: 0.05 grams (Approximate)

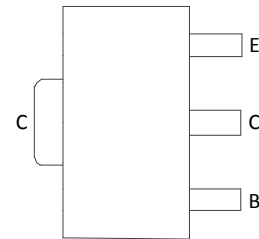
SOT89



Top View



Device Symbol



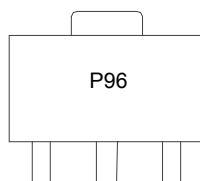
Top View
Pin Out

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 (@ $T_A = +25^\circ\text{C}$, 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 (@ $T_A = +25^\circ\text{C}$, 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	$^\circ\text{C}$

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

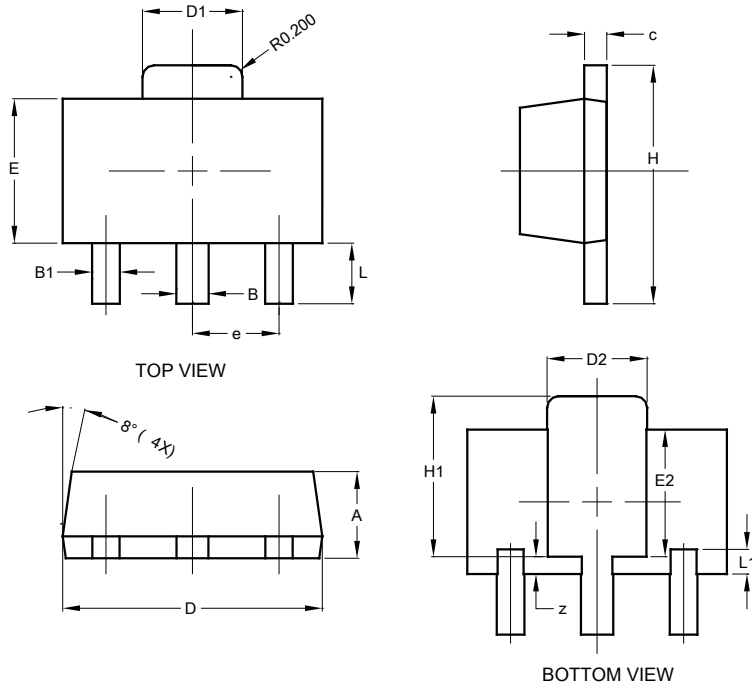
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	-220	—	—	V	$I_C = -100\mu\text{A}$
Collector- Emitter Breakdown Voltage (Note 6)	BV_{CEO}	-200	—	—	V	$I_C = -10\text{mA}$
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	—	—	V	$I_E = -100\mu\text{A}$
Collector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

- Notes:
- 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.
 - Measured under pulsed conditions. Pulse width $\leq 300\mu\text{s}$. Duty cycle $\leq 2\%$.

Package Outline Dimensions

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

SOT89

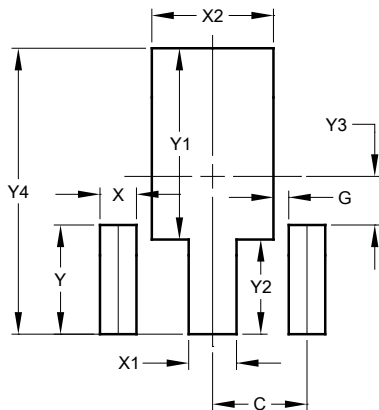


SOT89			
Dim	Min	Max	Typ
A	1.40	1.60	1.50
B	0.50	0.62	0.56
B1	0.42	0.54	0.48
c	0.35	0.43	0.38
D	4.40	4.60	4.50
D1	1.62	1.83	1.733
D2	1.61	1.81	1.71
E	2.40	2.60	2.50
E2	2.05	2.35	2.20
e	-	-	1.50
H	3.95	4.25	4.10
H1	2.63	2.93	2.78
L	0.90	1.20	1.05
L1	0.327	0.527	0.427
z	0.20	0.40	0.30
All Dimensions in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

Suggested Pad Layout

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

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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