



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



150V NPN MEDIUM POWER TRANSISTOR IN SOT89
Features

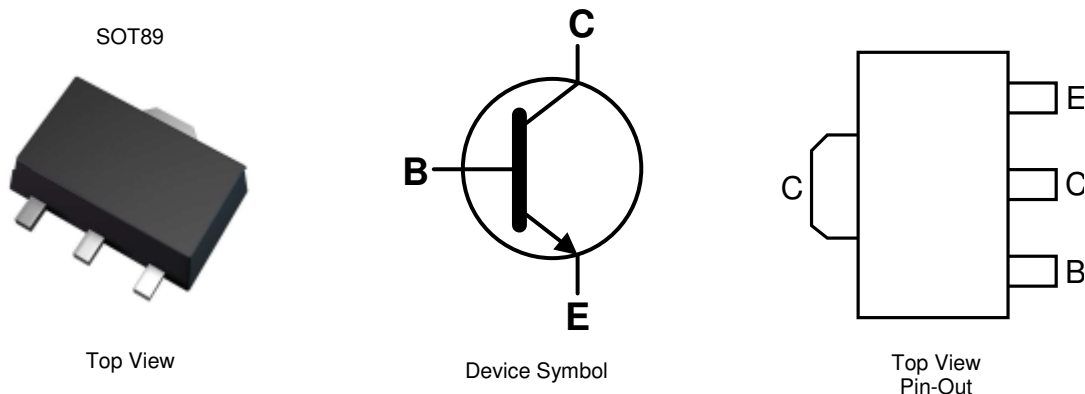
- $BV_{CEO} > 150V$
- $I_C = 1A$ High Continuous Current
- Low Saturation Voltage $V_{CE(sat)} < 300mV @ 0.5A$
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Application

- Low Loss Power Switching

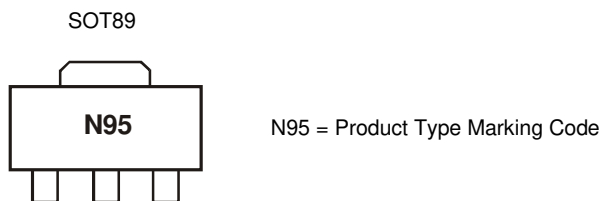
Mechanical Data

- 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: 0.052 grams (Approximate)


Ordering Information (Note 4)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
FCX495TA	N95	7	12	1,000
FCX495TC	N95	13	12	4,000
FCX495-13R	N95	13	12	4,000

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See http://www.diodes.com/quality/lead_free.html 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 <http://www.diodes.com/products/packages.html>.

Marking Information


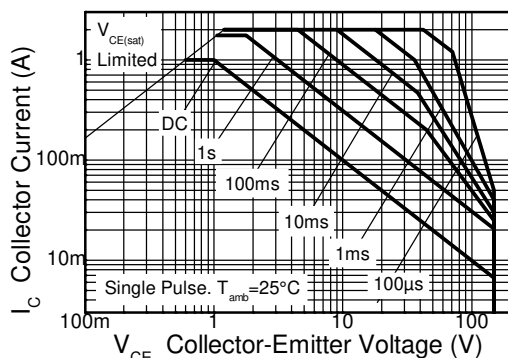
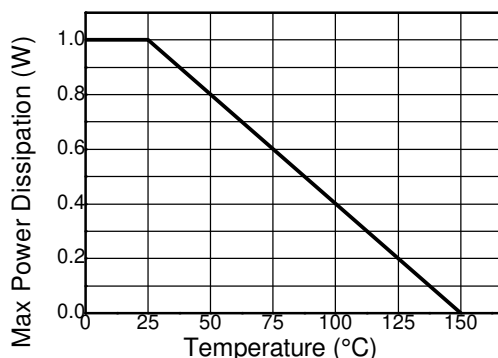
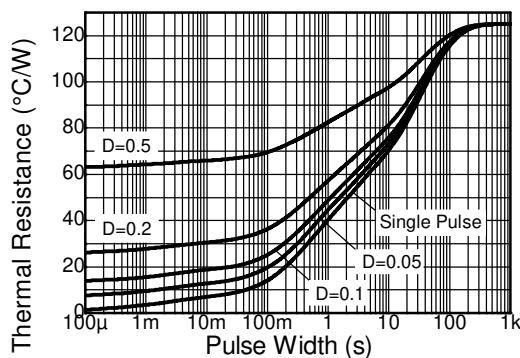
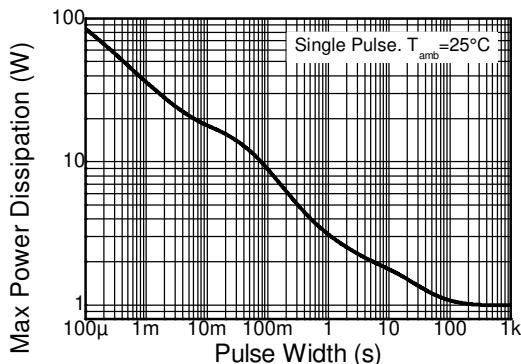
Absolute Maximum Ratings (@ $T_A = 25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CB0}	170	V
Collector-Emitter Voltage	V_{CEO}	150	V
Emitter-Base Voltage	V_{EBO}	7	V
Continuous Collector Current	I_C	1	A
Peak Pulse Current	I_{CM}	2	A
Continuous Base Current	I_B	200	mA

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

Characteristic	Symbol	Value	Unit
Collector Power Dissipation	P_D	1	W
Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\theta JA}$	125	$^\circ\text{C/W}$
Thermal Resistance, Junction to Leads (Note 6)	$R_{\theta JL}$	10.01	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_{J,STG}$	-65 to +150	$^\circ\text{C}$

Notes: 5. For the device mounted on 15mm x 15mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.
6. Thermal resistance from junction to solder-point (on the exposed collector pad).

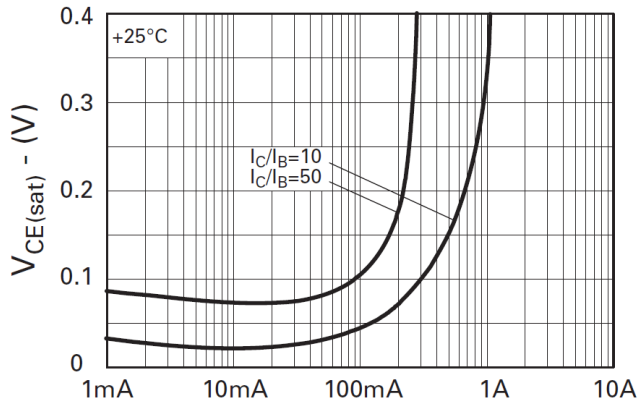
Thermal Characteristics and Derating Information

Safe Operating Area

Derating Curve

Transient Thermal Impedance

Pulse Power Dissipation

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

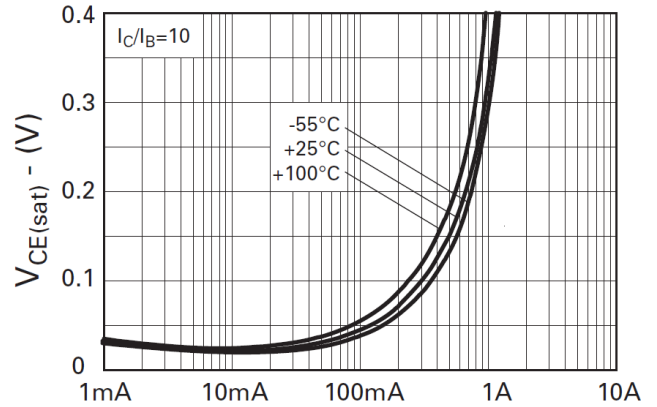
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CBO}	170	—	—	V	I _C = 100μA
Collector-Emitter Breakdown Voltage (Note 7)	BV _{CEO}	150	—	—	V	I _C = 1mA
Emitter-Base Breakdown Voltage	BV _{EBO}	7	—	—	V	I _E = 100μA
Collector Cut-Off Current	I _{CBO}	—	—	100	nA	V _{CB} = 150V
Emitter Cut-Off Current	I _{EBO}	—	—	100	nA	V _{EB} = 5.6V
Emitter Cut-Off Current	I _{CES}	—	—	100	nA	V _{CE} = 150V
DC Current Transfer Static Ratio (Note 7)	h _{FE}	100	—	—	—	I _C = 1mA, V _{CE} = 10V
		100	—	300	—	I _C = 250mA, V _{CE} = 10V
		50	—	—	—	I _C = 500mA, V _{CE} = 10V
		10	—	—	—	I _C = 1A, V _{CE} = 10V
Collector-Emitter Saturation Voltage (Note 7)	V _{CE(sat)}	—	—	0.2 0.3	V	I _C = 250mA, I _B = 25mA I _C = 500mA, I _B = 50mA
Base-Emitter Saturation Voltage (Note 7)	V _{BE(sat)}	—	—	1.0	V	I _C = 500mA, I _B = 50mA
Base-Emitter Turn-On Voltage (Note 7)	V _{BE(on)}	—	—	1.0	V	I _C = 500mA, V _{CE} = 10V
Transitional Frequency	f _T	100	—	-	MHz	I _C = 50mA, V _{CE} = 10V f = 100MHz
Output Capacitance	C _{obo}	—	—	10	pF	V _{CB} = 10V, f = 1MHz,

Note: 7. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%.

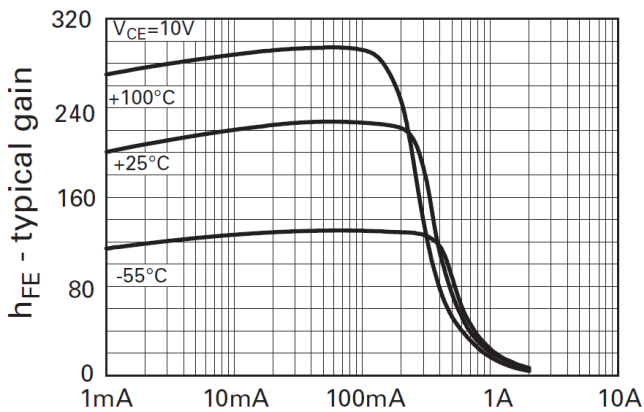
Typical Electrical Characteristics



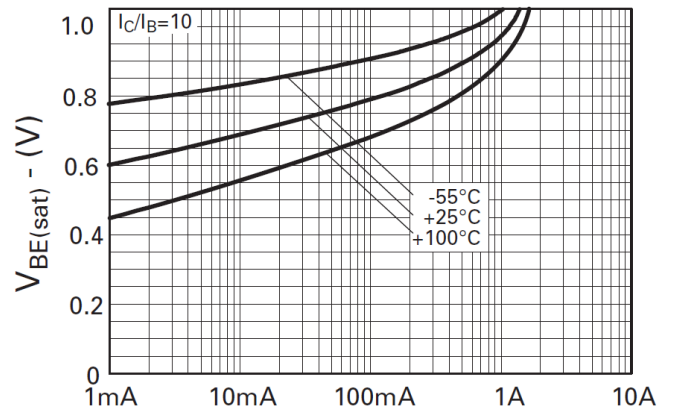
I_C - Collector current
 $V_{CE(sat)}$ vs. I_C



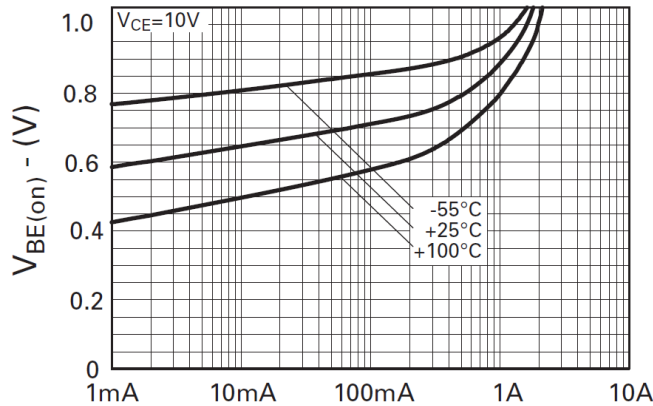
I_C - Collector current
 $V_{CE(sat)}$ vs. I_C



I_C - Collector current
 h_{FE} vs. I_C



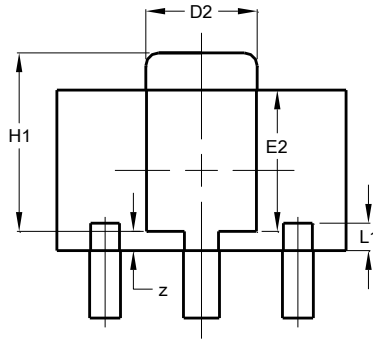
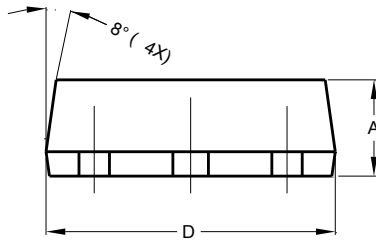
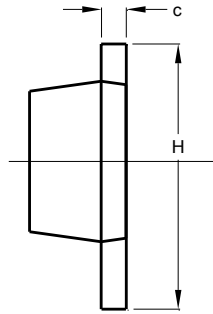
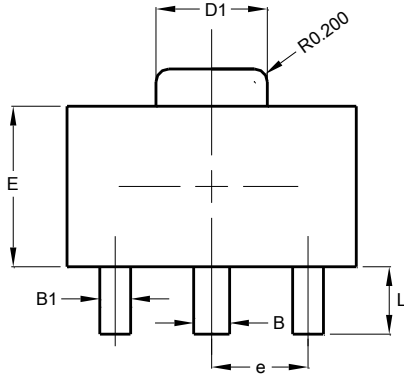
I_C - Collector current
 $V_{BE(sat)}$ vs. I_C



I_C - Collector current
 $V_{BE(on)}$ vs. I_C

Package Outline Dimensions

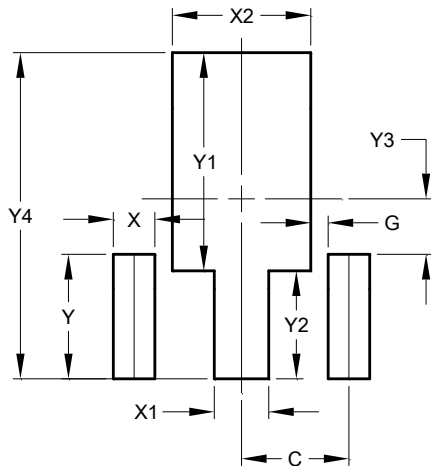
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



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 AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



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

Note: For high voltage applications, the appropriate industry sector guidelines should be considered with regards to creepage and clearance distances between device Terminals and PCB tracking.

IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes Incorporated.

LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

A. Life support devices or systems are devices or systems which:

1. are intended to implant into the body, or
2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

Copyright © 2015, Diodes Incorporated

www.diodes.com