

150V PNP HIGH VOLTAGE SWITCHING TRANSISTOR IN SOT89
Features

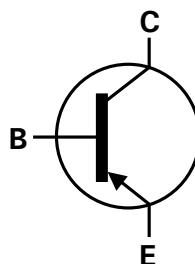
- $BV_{CEO} > -150V$
- $BV_{CEV} > -180V$
- $I_C = -700mA$ high Continuous Collector Current
- Low saturation voltage $V_{CE(sat)} < -300mV$ @ $-100mA$
- Complementary NPN type: FCX495
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

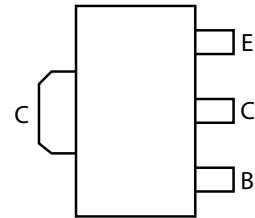
- Case: SOT89
- Case material: molded plastic. "Green" molding compound.
- UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (E3)
- Weight: 0.052 grams (Approximate)



Top View



Device Symbol

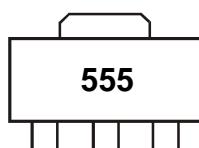

 Top View
 Pin Out

Ordering Information (Note 4)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
FCX555TA	555	7	12	1,000

Notes:

1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
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


555 = Product Type Marking Code

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

Characteristic	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	-180	V
Collector-Emitter Voltage	V_{CEV}	-180	V
Collector-Emitter Voltage	V_{CEO}	-150	V
Emitter-Base Voltage	V_{EBO}	-7	V
Continuous Collector Current	I_C	-0.7	A
Peak Pulse Current	I_{CM}	-2	A

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

Characteristic	Symbol	Value	Unit
Power Dissipation	P_D	1	W
		1.5	
		2.1	
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	125	°C/W
		83	
		60	
Thermal Resistance, Junction to Lead	$R_{\theta JL}$	10.01	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

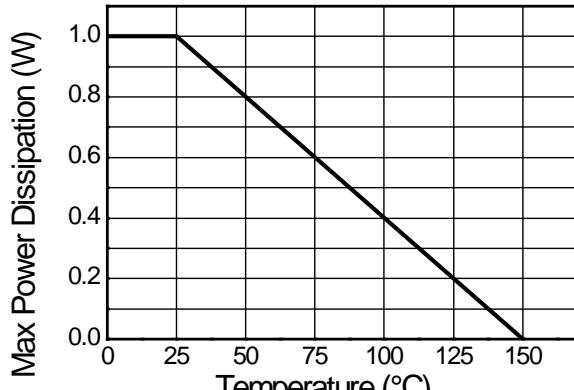
ESD Ratings (Note 9)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	$\geq 4,000$	V	3A
Electrostatic Discharge - Machine Model	ESD MM	≥ 400	V	C

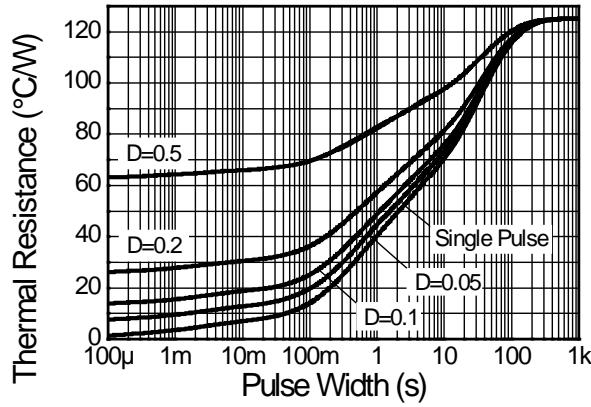
Notes:

- 5. For a device mounted with the exposed collector pad on 15mm x 15mm 1oz copper that is on a single-sided 1.6mm FR4 PCB; device is measured under still air conditions whilst operating in a steady-state.
- 6. Same as note (5), except the device is mounted on 25mm x 25mm 1oz copper.
- 7. Same as note (5), except the device is mounted on 50mm x 50mm 1oz copper.
- 8. Thermal resistance from junction to solder-point (on the exposed collector pad).
- 9. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

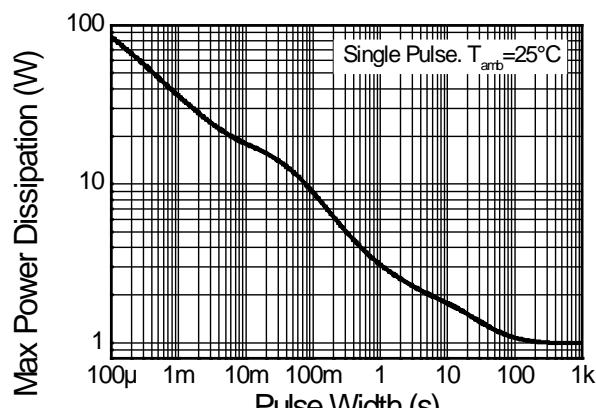
Thermal Characteristics and Derating Information



Derating Curve



Transient Thermal Impedance



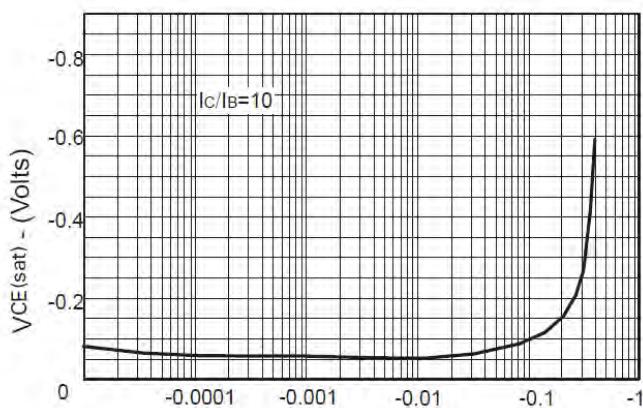
Pulse Power Dissipation

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

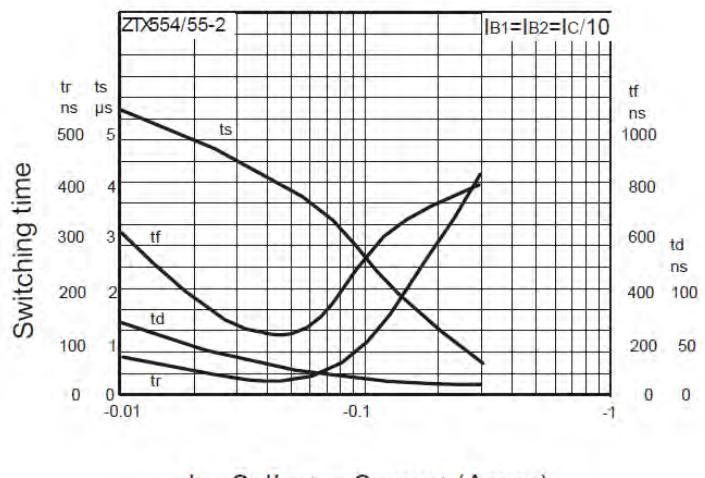
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	-180	—	—	V	$I_C = -100\mu\text{A}$
Collector-Emitter Breakdown Voltage	BV_{CEV}	-180	—	—	V	$I_C = -1\mu\text{A}, -0.3\text{V} < V_{\text{BE}} < 1\text{V}$
Collector-Emitter Breakdown Voltage	BV_{CER}	-180	—	—	V	$I_C = -1\mu\text{A}, R_B \leq 1\text{k}\Omega$
Collector-Emitter Breakdown Voltage (Note 10)	BV_{CEO}	-150	—	—	V	$I_C = -1\text{mA}$
Emitter-Base Breakdown Voltage	BV_{EBO}	-7	-8.1	—	V	$I_E = -100\mu\text{A}$
Collector Cutoff Current	I_{CBO}	—	<1	-20	nA	$V_{\text{CB}} = -144\text{V}$
		—	-	-10	μA	$V_{\text{CB}} = -144\text{V}, T_A = +100^\circ\text{C}$
Emitter Cutoff Current	I_{EBO}	—	<1	-20	nA	$V_{\text{EB}} = -6\text{V}$
DC current transfer Static ratio (Note 10)	h_{FE}	100 100	—	— 300	—	$I_C = -10\text{mA}, V_{\text{CE}} = -5\text{V}$ $I_C = -100\text{mA}, V_{\text{CE}} = -5\text{V}$
Collector-Emitter Saturation Voltage (Note 10)	$V_{\text{CE}(\text{sat})}$	—	—	-300 -400	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 10)	$V_{\text{BE}(\text{sat})}$	—	—	-1000	mV	$I_C = -250\text{mA}, I_B = -25\text{mA}$
Base-Emitter Turn-on Voltage (Note 10)	$V_{\text{BE}(\text{on})}$	—	—	-950	mV	$I_C = -250\text{mA}, V_{\text{CE}} = -5\text{V}$
Transitional Frequency	f_T	—	100	—	MHz	$I_E = -50\text{mA}, V_{\text{CE}} = -10\text{V}$ $f = 100\text{MHz}$
Output capacitance	C_{obo}	—	—	10	pF	$V_{\text{CB}} = -10\text{V}, f = 1\text{MHz}$

Note: 10. Measured under pulsed conditions. Pulse width $\leq 300\mu\text{s}$. Duty cycle $\leq 2\%$.

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

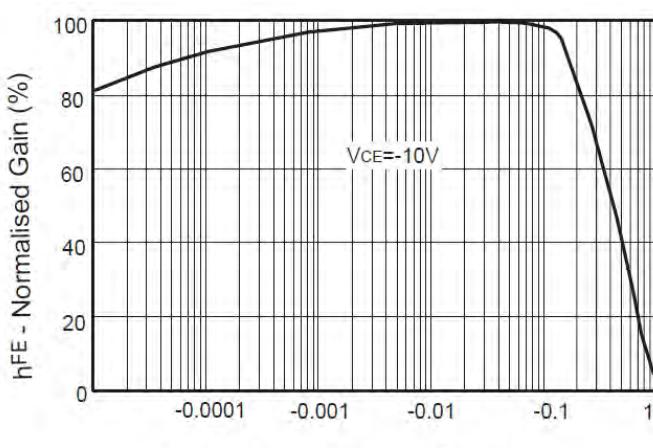


I_C - Collector Current (Amps)



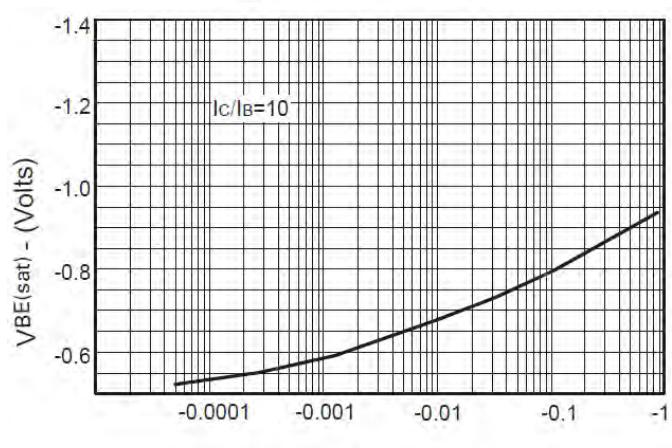
I_C - Collector Current (Amps)

VCE(sat) v IC



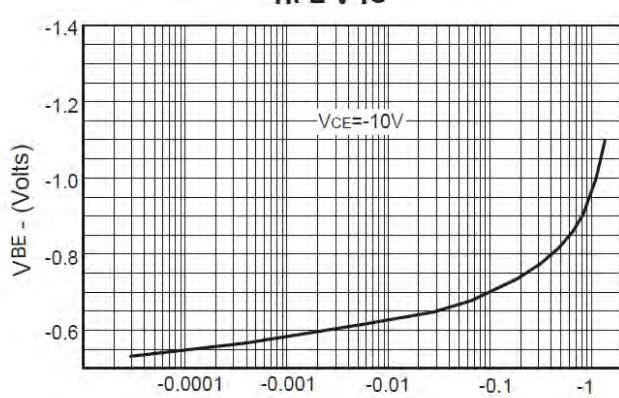
I_C - Collector Current (Amps)

Switching Speeds



I_C - Collector Current (Amps)

VBE(sat) v IC

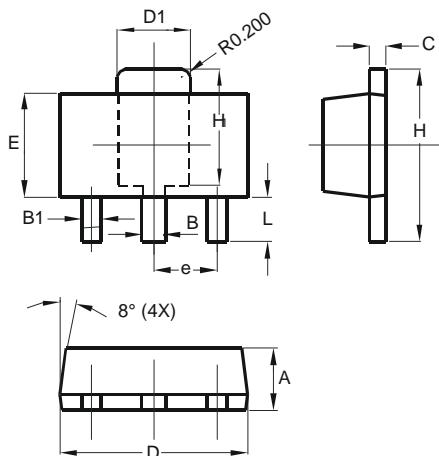


I_C - Collector Current (Amps)

VBE(on) v IC

Package Outline Dimensions

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

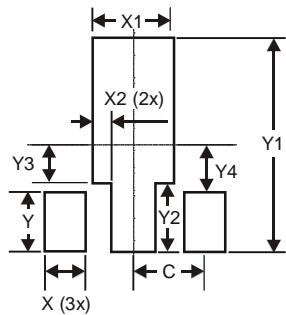


SOT89		
Dim	Min	Max
A	1.40	1.60
B	0.44	0.62
B1	0.35	0.54
C	0.35	0.44
D	4.40	4.60
D1	1.62	1.83
E	2.29	2.60
e	1.50 Typ	
H	3.94	4.25
H1	2.63	2.93
L	0.89	1.20

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)
X	0.900
X1	1.733
X2	0.416
Y	1.300
Y1	4.600
Y2	1.475
Y3	0.950
Y4	1.125
C	1.500

Note: For high voltage applications, the appropriate industry sector guidelines should be considered with regards to voltage spacing between terminals.

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