



YOUSHANG SEMICONDUCTOR

设计研发新型功率器件

各类小信号开关

中低压及高压大电流等场效应管

0755-83047638

ysbdt@szyoushang.cn

www.szyoushang.cn



企业微信二维码



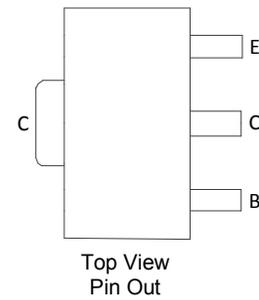
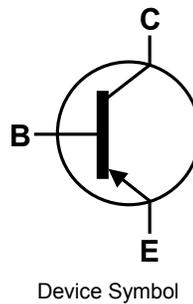
企业QQ二维码

Features

- $BV_{CEO} = -12V$
- $I_C = -3A$ Continuous Current
- $I_{CM} = -20A$ Peak Pulse Current
- Low Saturation Voltage $V_{CE(sat)} < -50mV @ -0.1A$
- $R_{sat} = 53m\Omega$ for a Low Equivalent On-Resistance

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)



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

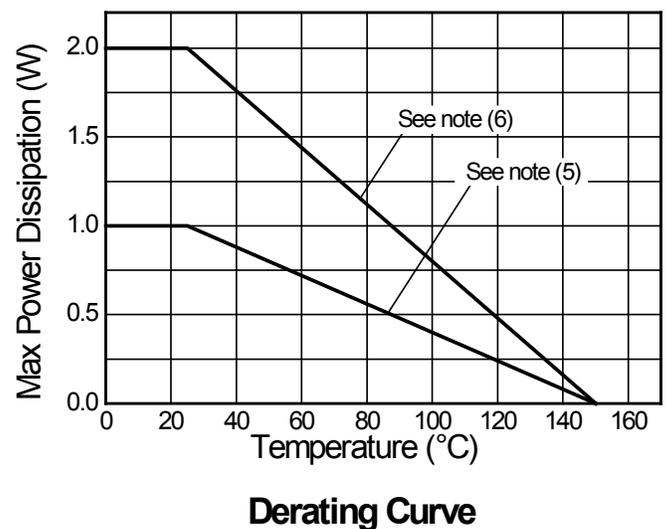
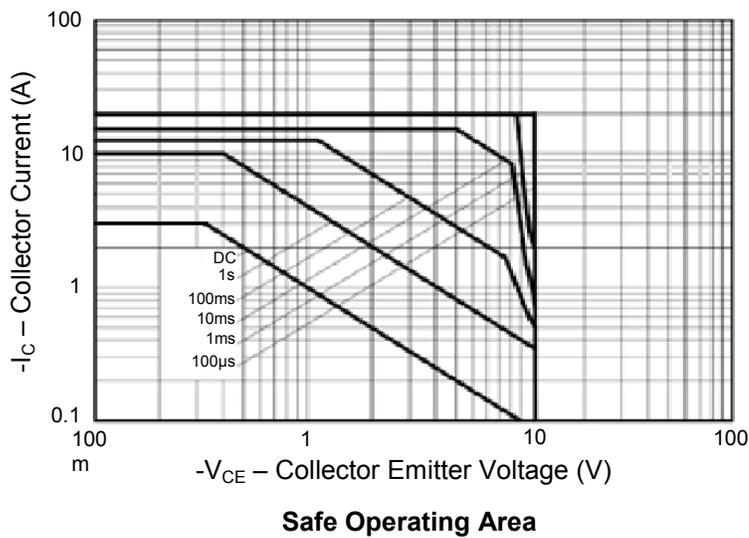
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-15	V
Collector-Emitter Voltage	V_{CEO}	-12	V
Emitter-Base Voltage	V_{EBO}	-5	V
Continuous Collector Current	I_C	-3	A
Peak Pulse Collector Current (single pulse)	I_{CM}	-20	A
Base Current	I_B	-500	mA

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

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	1	W
Power Dissipation (Note 6)	P_D	2	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

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. Same as note (5), except the device is mounted on 40mm x 40mm x 0.6mm single sided 1oz weight copper.

Thermal Characteristics and Derating

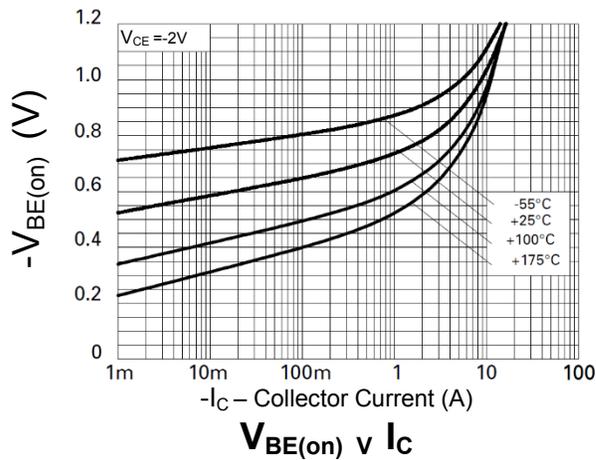
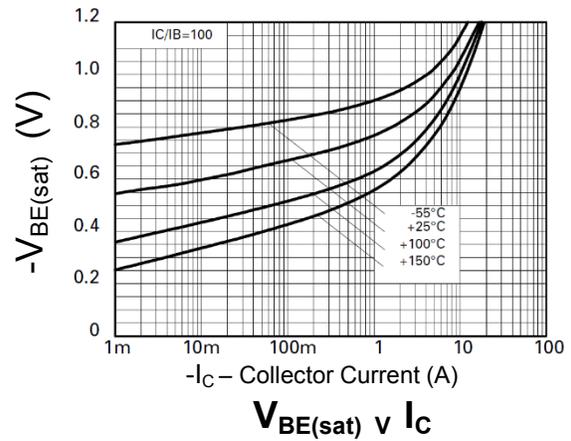
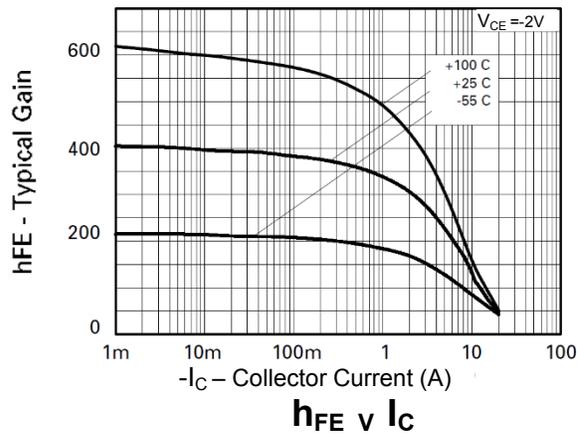
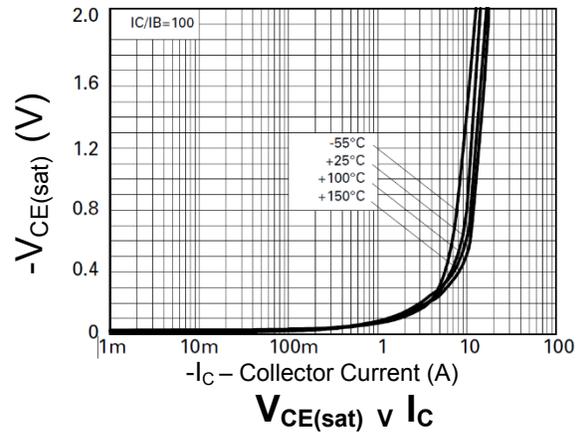
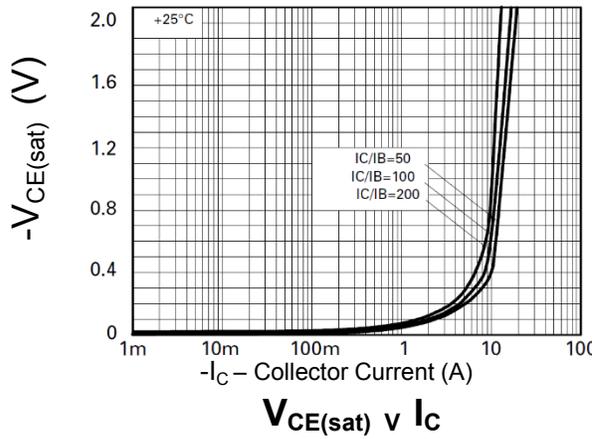


Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	-15	—	—	V	$I_C = -100\mu\text{A}$
Collector-Emitter Breakdown Voltage	BV_{CES}	-12	—	—	V	$I_C = -100\mu\text{A}$
Collector-Emitter Breakdown Voltage (Note 7)	BV_{CEO}	-12	—	—	V	$I_C = -10\text{mA}$
Collector-Emitter Breakdown Voltage	BV_{CEV}	-12	—	—	V	$I_C = -100\mu\text{A}, V_{BE} = +1\text{V}$
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	—	—	V	$I_E = -100\mu\text{A}$
Collector Cut-Off Current	I_{CBO}	—	-0.3	-10	nA	$V_{CB} = -12\text{V}$
Emitter Cut-Off Current	I_{EBO}	—	-0.3	-10	nA	$V_{EB} = -4\text{V}$
Collector Emitter Cut-Off Current	I_{CES}	—	-0.3	-10	nA	$V_{CES} = -10\text{V}$
Collector-Emitter Saturation Voltage (Note 7)	$V_{CE(sat)}$	—	-25 -70 -90 -115 -160 -250	-50 -110 -130 -170 -250 -400	mV	$I_C = -0.1\text{A}, I_B = -1\text{mA}$ $I_C = -0.5\text{A}, I_B = -2.5\text{mA}$ $I_C = -1\text{A}, I_B = -6\text{mA}$ $I_C = -2\text{A}, I_B = -20\text{mA}$ $I_C = -3\text{A}, I_B = -30\text{mA}$ $I_C = -5\text{A}, I_B = -50\text{mA}$
Base-Emitter Saturation Voltage (Note 7)	$V_{BE(sat)}$	—	-820	-1000	mV	$I_C = -3\text{A}, I_B = -30\text{mA}$
Base-Emitter Turn-On Voltage (Note 7)	$V_{BE(on)}$	—	-770	-950	mV	$I_C = -3\text{A}, V_{CE} = -2\text{V}$
DC Current Gain (Note 7)	h_{FE}	270 250 200 200 150 90 —	450 400 340 300 245 145 50	— 850 — — — — —	—	$I_C = -10\text{mA}, V_{CE} = -2\text{V}$ $I_C = -0.5\text{A}, V_{CE} = -2\text{V}$ $I_C = -2\text{A}, V_{CE} = -2\text{V}$ $I_C = -3\text{A}, V_{CE} = -2\text{V}$ $I_C = -5\text{A}, V_{CE} = -2\text{V}$ $I_C = -10\text{A}, V_{CE} = -2\text{V}$ $I_C = -20\text{A}, V_{CE} = -2\text{V}$
Transitional frequency	f_T	—	115	—	MHz	$I_C = -50\text{mA}, V_{CE} = -10\text{V}$ $f = 50\text{MHz}$
Output Capacitance	C_{obo}	—	80	—	pF	$V_{CB} = -10\text{V}, f = 1\text{MHz}$
Switching Time	t_{on}	—	150	—	ns	$I_C = -4\text{A}, V_{CC} = -10\text{V},$ $I_{B1} = -I_{B2} = -40\text{mA}$
	t_{off}	—	220	—		

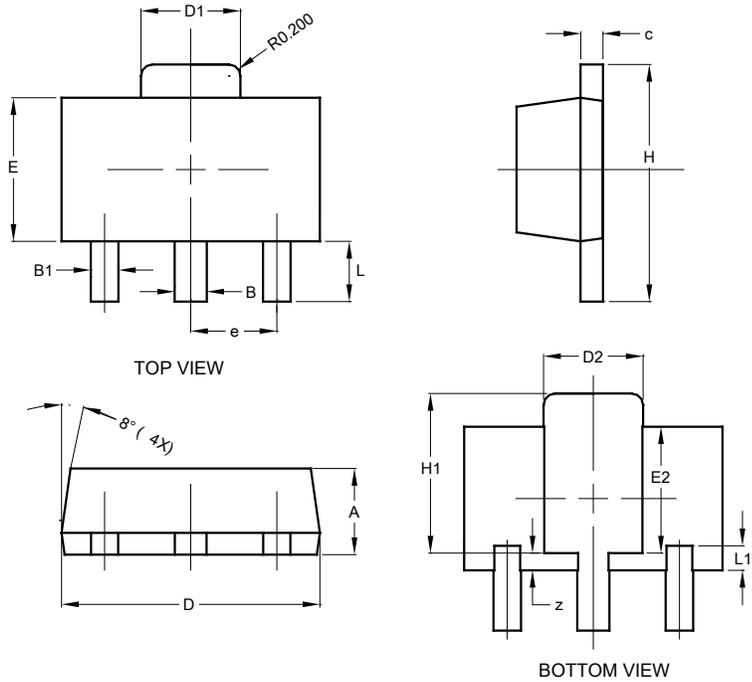
 Notes: 7. Measured under pulsed conditions. Pulse width $\leq 300\mu\text{s}$. Duty cycle $\leq 2\%$.

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



Package Outline Dimensions

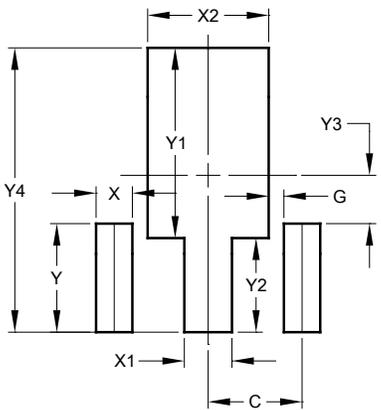
SOT89



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

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