

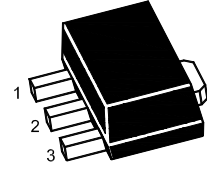


Plastic-Encapsulate Transistors

TRANSISTOR (NPN)

FEATURES

- Low voltage
- Complementary to 2SA1203U



1.Base 2.Collector 3.Emitter
SOT-89 Plastic Package

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CB0}	Collector-Base Voltage	30	V
V_{CE0}	Collector-Emitter Voltage	30	V
V_{EB0}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	1.5	A
P_C	Collector Power Dissipation	0.5	W
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55-150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CB0}$	$I_C=1\text{mA}, I_E=0$	30			V
Collector-emitter breakdown voltage	$V_{(BR)CE0}$	$I_C=10\text{mA}, I_B=0$	30			V
Emitter-base breakdown voltage	$V_{(BR)EB0}$	$I_E=1\text{mA}, I_C=0$	5			V
Collector cut-off current	I_{CB0}	$V_{CB}=30\text{V}, I_E=0$			0.1	μA
Emitter cut-off current	I_{EB0}	$V_{EB}=5\text{V}, I_C=0$			0.1	μA
DC current gain	h_{FE}	$V_{CE}=2\text{V}, I_C=0.5\text{A}$	100		320	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=1.5\text{A}, I_B=30\text{mA}$			2	V
Base-emitter voltage	V_{BE}	$V_{CE}=2\text{V}, I_C=0.5\text{A}$			1	V
Transition frequency	f_T	$V_{CE}=2\text{V}, I_C=500\text{mA}$		120		MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$			40	pF

CLASSIFICATION OF h_{FE}

Rank	O	Y
Range	100-200	160-320
Marking	GO	GY

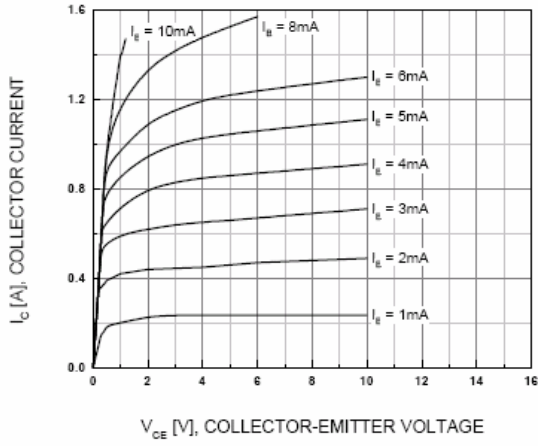


Figure 1. Static Characteristics

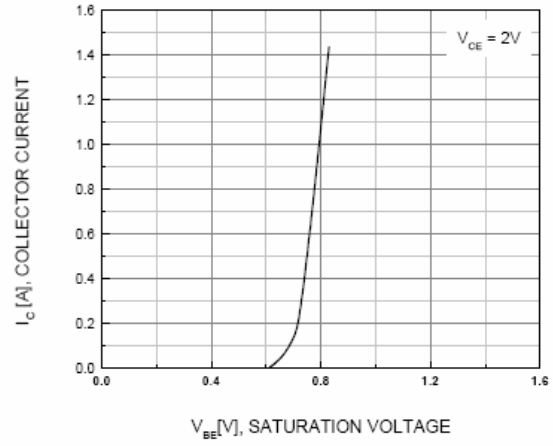


Figure 2. Base-Emitter On Voltage

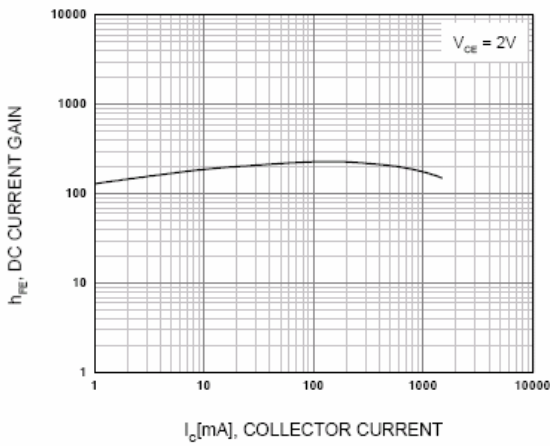


Figure 3. DC Current Gain

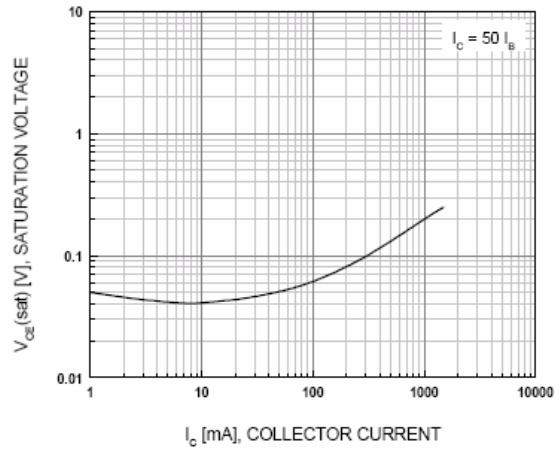


Figure 4. Collector-Emitter Saturation Voltage

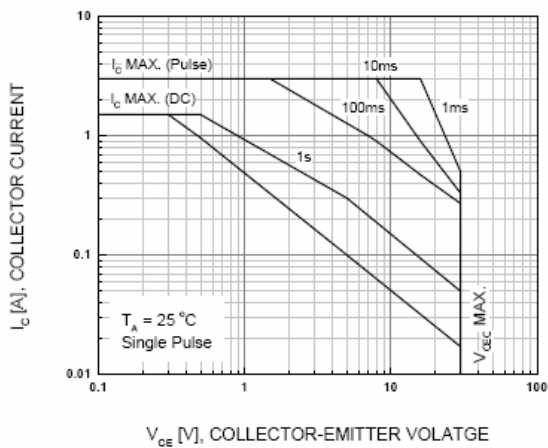


Figure 5. Safe Operating Area

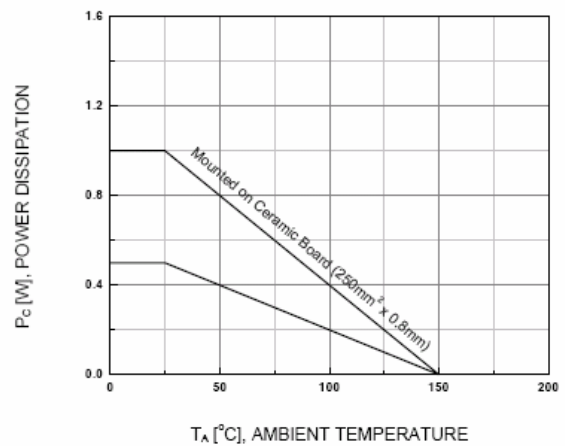


Figure 6. Power Derating

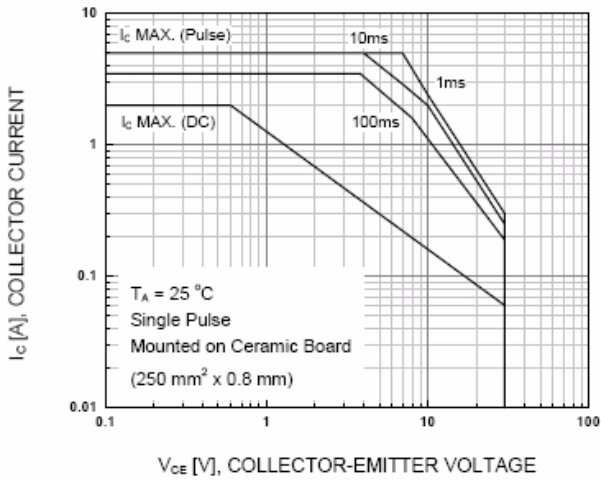


Figure 7. Safe Operating Area

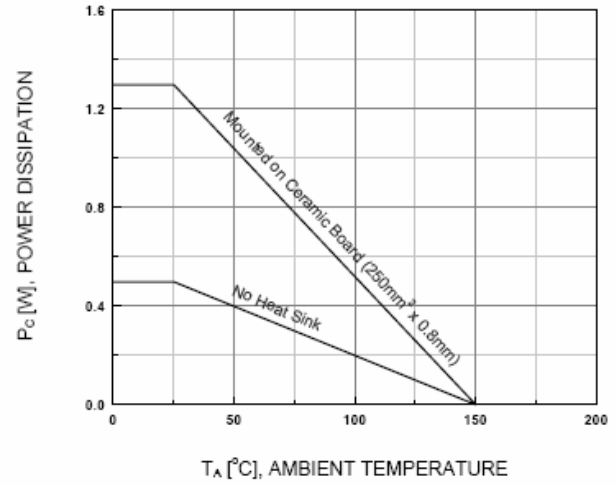
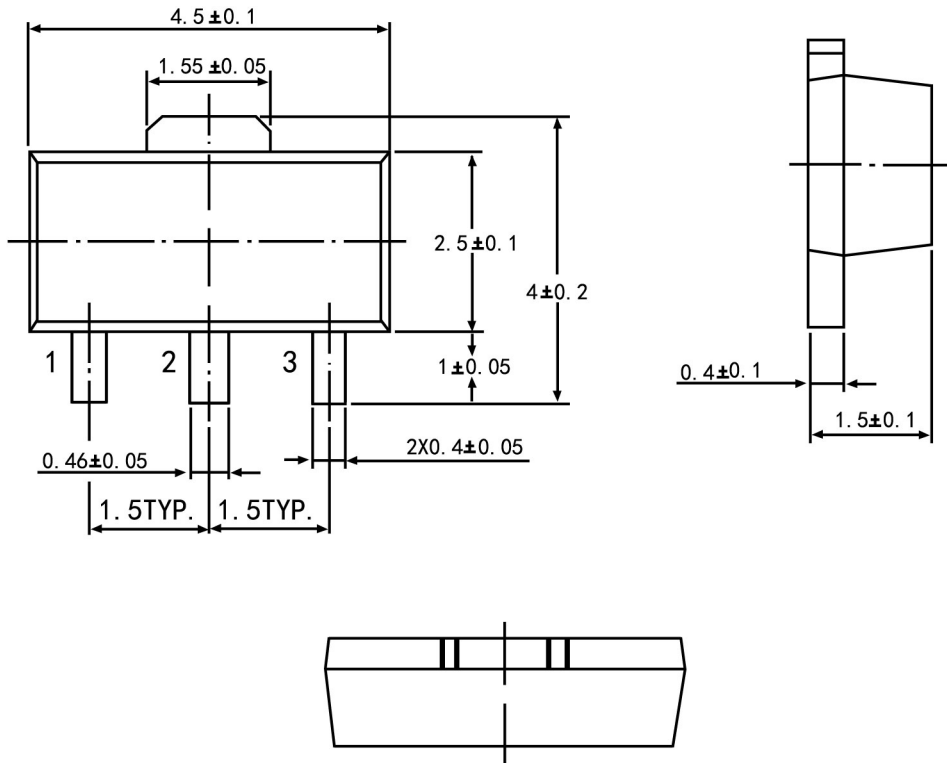


Figure 8. Power Derating



SOT-89 PACKAGE OUTLINE



Symbol	Dimension in Millimeters	
	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