

SOT-89-3L Plastic-Encapsulate Transistors**A44****TRANSISTOR (NPN)****FEATURES**

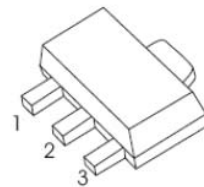
- High break down voltage
- Low collector-emitter saturation voltage

MARKING:A44**SOT-89-3L**

1. BASE

2. COLLECTOR

3. EMITTER

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

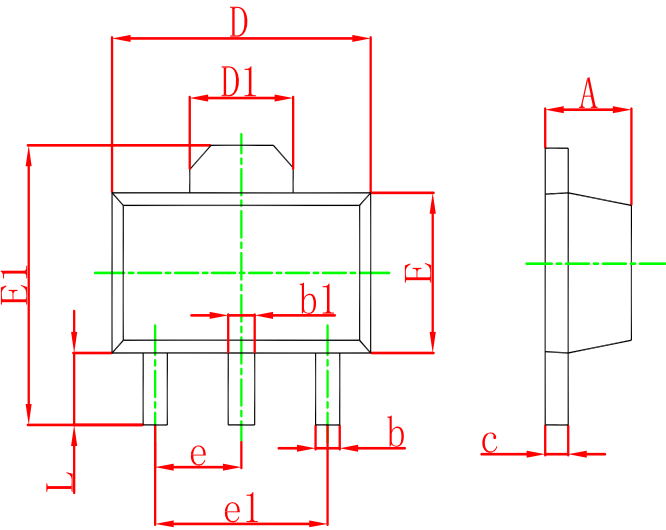
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	400	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	6	V
I_{C}	Collector Current -Continuous	200	mA
I_{CM}	Collector Current -Pulsed	300	mA
P_{C}	Collector Power Dissipation	500	mW
$R_{\theta\text{JA}}$	Thermal Resistance from Junction to Ambient	250	$^{\circ}\text{C/W}$
$T_{\text{J}}, T_{\text{stg}}$	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	$I_{\text{C}}=100\mu\text{A}, I_{\text{E}}=0$	400			V
Collector-emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}^{*}$	$I_{\text{C}}=1\text{mA}, I_{\text{B}}=0$	400			V
Emitter-base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	$I_{\text{E}}=10\mu\text{A}, I_{\text{C}}=0$	6			V
Collector cut-off current	I_{CBO}	$V_{\text{CB}}=400\text{V}, I_{\text{E}}=0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{\text{EB}}=4\text{V}, I_{\text{C}}=0$			0.1	μA
DC current gain	$h_{\text{FE}(1)}^{*}$	$V_{\text{CE}}=10\text{V}, I_{\text{C}}=1\text{mA}$	40			
	$h_{\text{FE}(2)}^{*}$	$V_{\text{CE}}=10\text{V}, I_{\text{C}}=10\text{mA}$	50		200	
	$h_{\text{FE}(3)}^{*}$	$V_{\text{CE}}=10\text{V}, I_{\text{C}}=50\text{mA}$	45			
	$h_{\text{FE}(4)}^{*}$	$V_{\text{CE}}=10\text{V}, I_{\text{C}}=100\text{mA}$	40			
Collector-emitter saturation voltage	$V_{\text{CE(sat)}}^{*}$	$I_{\text{C}}=1\text{mA}, I_{\text{B}}=0.1\text{mA}$			0.4	V
		$I_{\text{C}}=10\text{mA}, I_{\text{B}}=1\text{mA}$			0.5	V
		$I_{\text{C}}=50\text{mA}, I_{\text{B}}=5\text{mA}$			0.75	V
Base-emitter saturation voltage	$V_{\text{BE(sat)}}^{*}$	$I_{\text{C}}=10\text{mA}, I_{\text{B}}=1\text{mA}$			0.75	V
Collector output capacitance	C_{ob}	$V_{\text{CB}}=20\text{V}, I_{\text{E}}=0, f=1\text{MHz}$			7	pF
Emitter input capacitance	C_{ib}	$V_{\text{BE}}=0.5\text{V}, I_{\text{C}}=0, f=1\text{MHz}$			130	pF

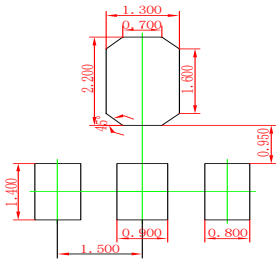
*Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycles $\leq 2.0\%$.

Package Outline Dimensions (SOT-89-3L)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

Suggested Pad Layout (SOT-89-3L)



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.