



## PRODUCT DATA SHEET

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**Datasheet**



**Resources**





**Samples**

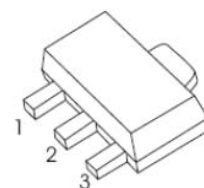
Please note: Please check the JINGAO Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at [www.jg-semi.cn](http://www.jg-semi.cn). Please email any questions regarding the system integration to [JINGAO\\_questions@jgsemi.com](mailto:JINGAO_questions@jgsemi.com).

## FEATURES

Power dissipation

## MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	40	V
V <sub>CEO</sub>	Collector-Emitter Voltage	30	V
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>C</sub>	Collector Current -Continuous	3	A
P <sub>C</sub>	Collector Power Dissipation	0.5	W
R <sub>θJA</sub>	Thermal Resistance from  Junction to Ambient	Å25€	°C/W
R <sub>θJC</sub>	Thermal Resistance from  Junction to Case	Å35	°C/W
T <sub>J</sub> , T <sub>stg</sub>	Operation Junction and Storage Temperature Range	-55~150	°C



**SOT-89-3L**

1. BASE

2. COLLECTOR

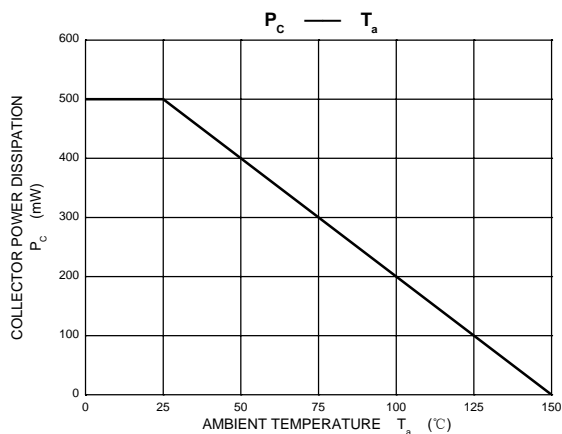
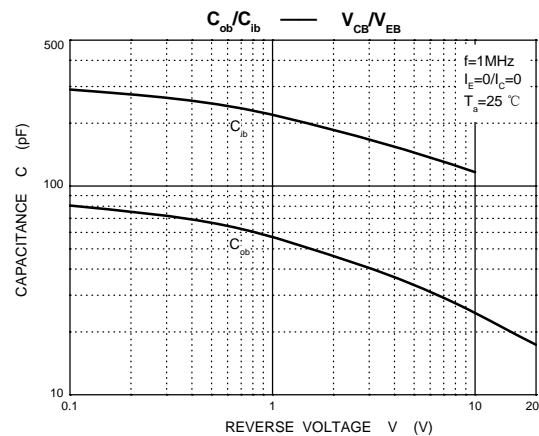
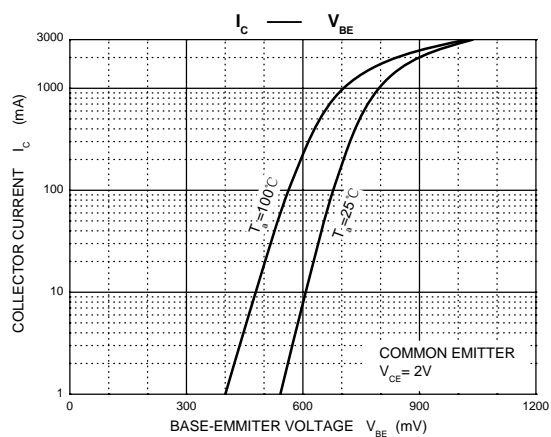
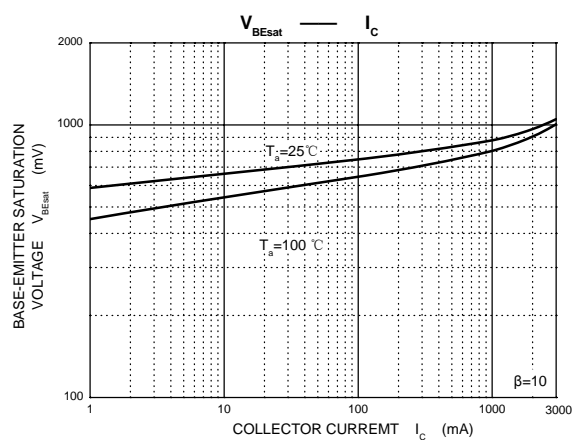
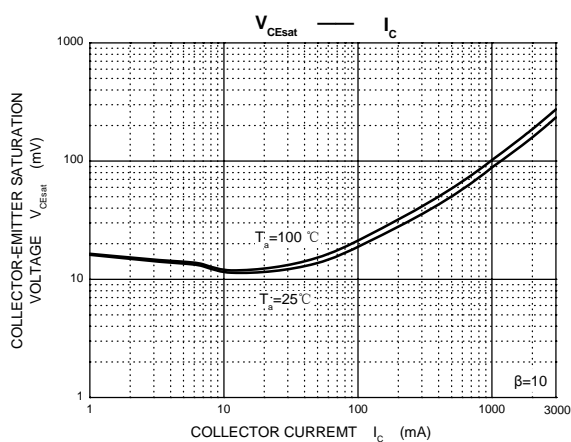
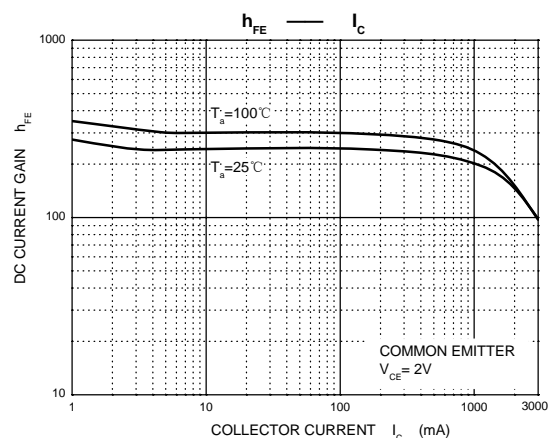
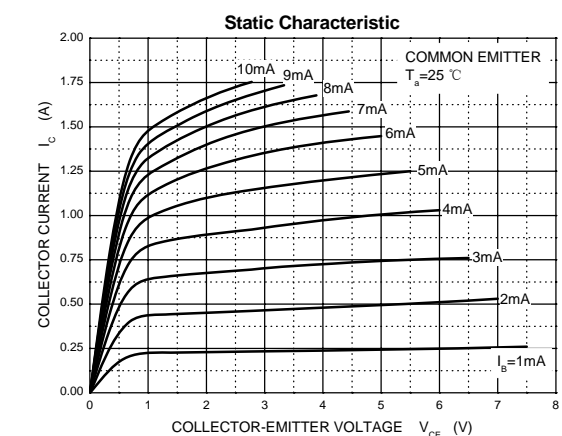
3. EMITTER

## ELECTRICAL CHARACTERISTICS(T<sub>a</sub>=25°C unless otherwise specified)

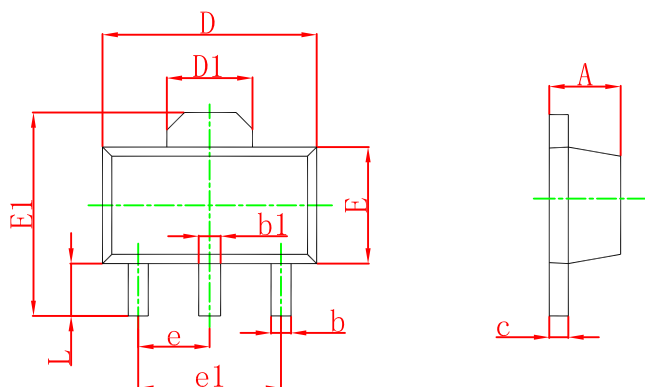
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 100µA, I <sub>E</sub> =0	40			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> =0	30			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 100µA, I <sub>C</sub> =0	6			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = 40V, I <sub>E</sub> =0			1	µA
Collector cut-off current	I <sub>CEO</sub>	V <sub>CE</sub> = 30V, I <sub>B</sub> =0			10	µA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 6V, I <sub>C</sub> =0			1	µA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> = 1A	60		400	
	h <sub>FE(2)</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> = 100mA	32			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 2A, I <sub>B</sub> = 0.2 A			0.5	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 2A, I <sub>B</sub> = 0.2 A			1.5	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 5V , I <sub>C</sub> =0.1A f =10MHz	50			MHz

## CLASSIFICATION OF h<sub>FE(1)</sub>

Rank	R	O	Y	GR
Range	60-120	100-200	160-320	200-400

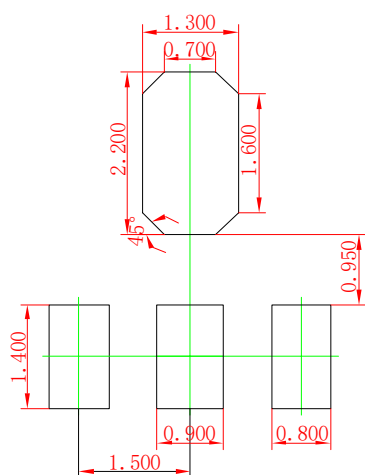


## SOT-89-3L Package Outline Dimensions



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

## SOT-89-3L Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

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