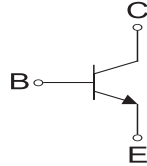
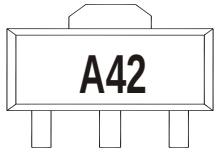
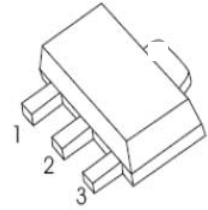


SOT-89-3L Plastic-Encapsulate Transistors**A42**

TRANSISTOR (NPN)

FEATURES

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

MARKING**Equivalent Circuit****SOT-89-3L**

1. BASE

2. COLLECTOR

3. EMITTER

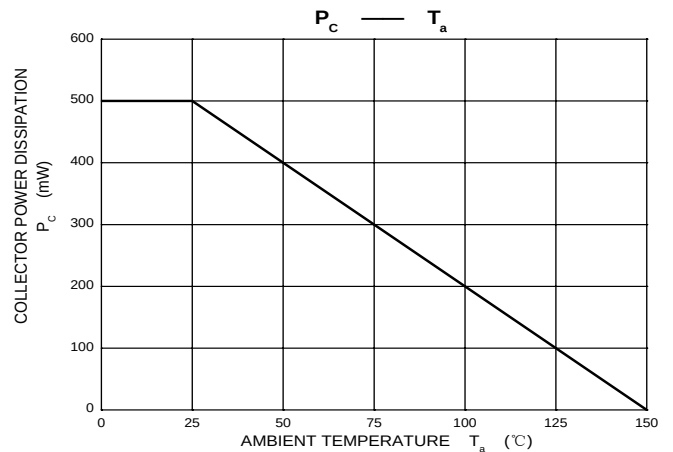
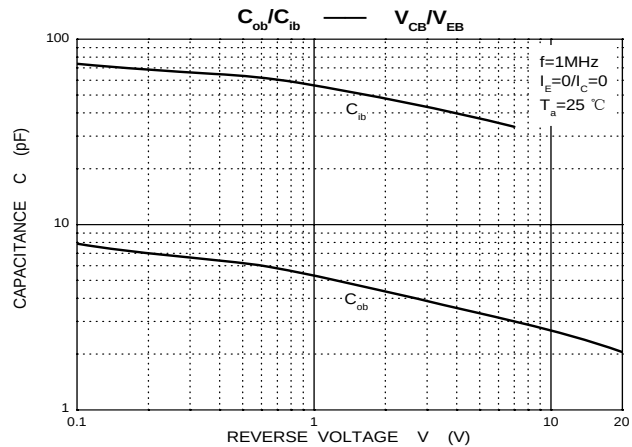
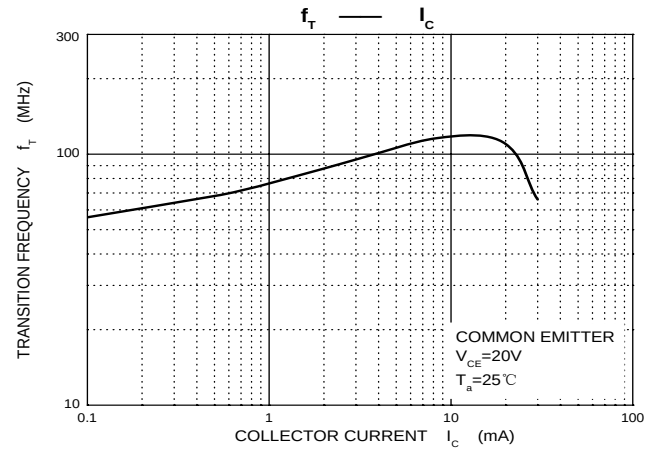
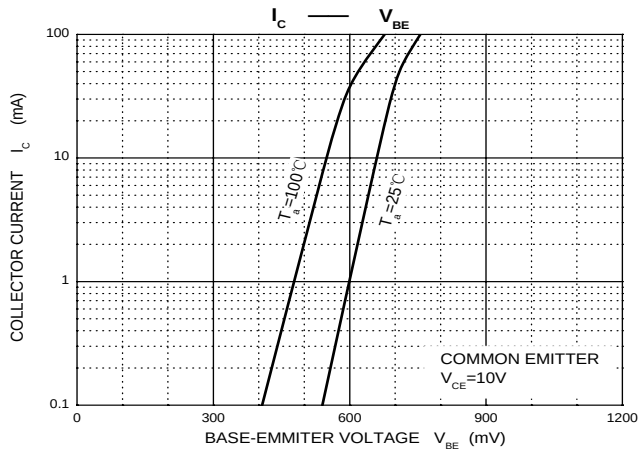
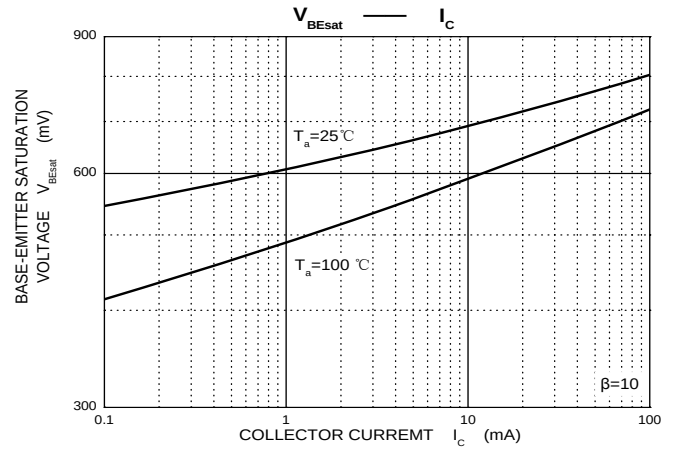
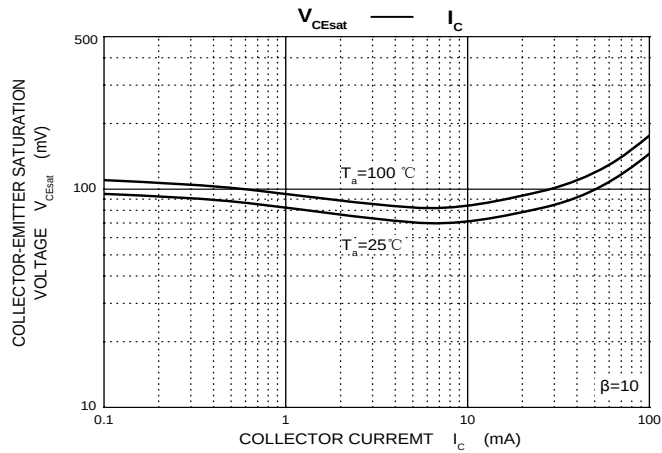
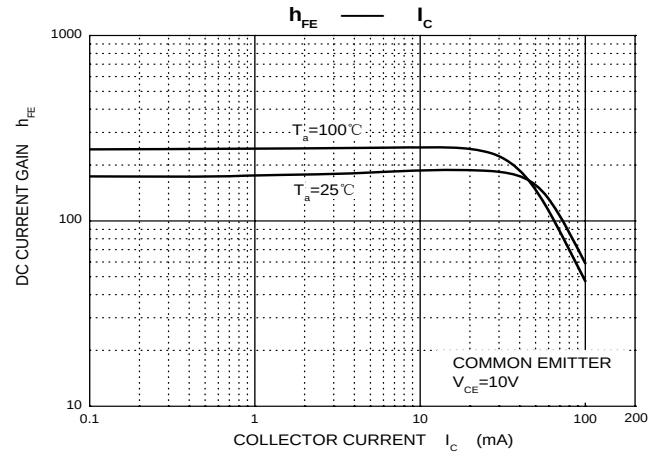
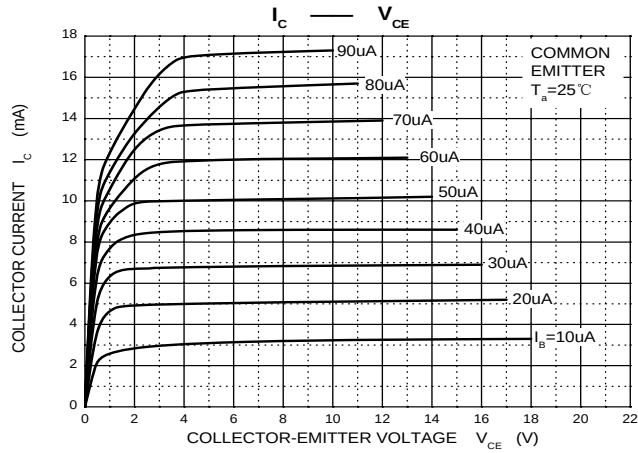
MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	310	V
V_{CEO}	Collector-Emitter Voltage	305	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	200	mA
I_{CM}	Collector Current -Pulsed	500	mA
P_C	Collector Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	250	$^{\circ}\text{C}/\text{W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

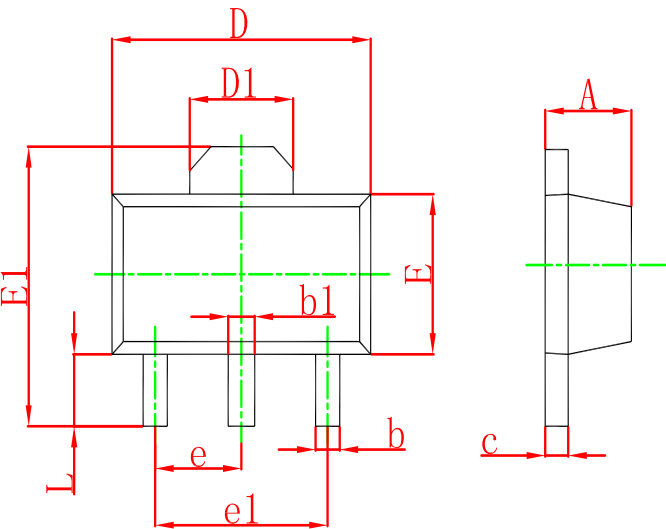
ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	310			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	305			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=200\text{V}, I_E=0$			0.25	μA
	I_{CEX}	$V_{CE}=100\text{V}, V_X=5\text{V}$			5	μA
		$V_{CE}=300\text{V}, V_X=5\text{V}$			10	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=10\text{V}, I_C=1\text{mA}$	60			
	$h_{FE(2)}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	100		300	
	$h_{FE(3)}$	$V_{CE}=10\text{V}, I_C=30\text{mA}$	75			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=20\text{mA}, I_B=2\text{mA}$			0.2	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=20\text{mA}, I_B=2\text{mA}$			0.9	V
Transition frequency	f_T	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=30\text{MHz}$	50			MHz

Typical Characteristics

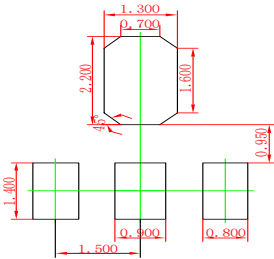


Package Outline Dimensions (SOT-89-3L)



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.