



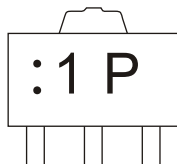
SOT-89-3L Plastic-Encapsulate Transistors

TRANSISTOR (NPN)

FEATURES

- Epitaxial planar die construction
- Complementary PNP Type available(PXT2907A)

MARKING



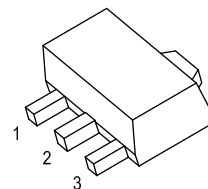
Solid dot = Green molding compound device.

SOT-89-3L

1. BASE

2. COLLECTOR

3. EMITTER



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

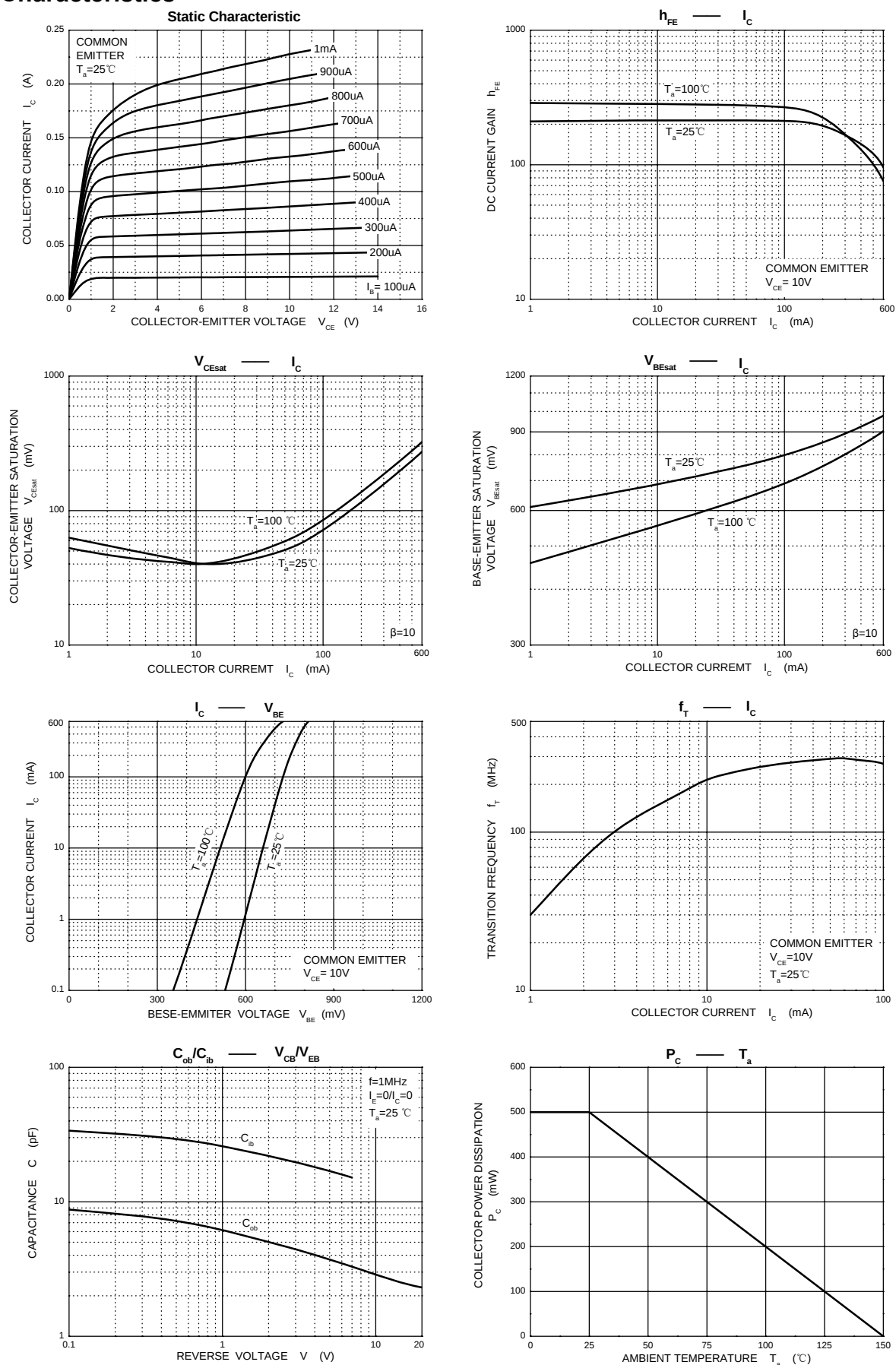
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	75	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_{C}	Collector Current -Continuous	600	mA
P_{C}	Collector Power Dissipation	0.5	W
$T_{\text{J}}, T_{\text{stg}}$	Operation Junction and Storage Temperature Range	-55 ~150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	$I_{\text{C}}=10\mu\text{A}, I_{\text{E}}=0$	75		V
Collector-emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	$I_{\text{C}}=10\text{mA}, I_{\text{B}}=0$	40		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}	$V_{\text{CB}}=60\text{V}, I_{\text{E}}=0$		0.01	μA
Emitter cut-off current	I_{EBO}	$V_{\text{EB}}=5\text{V}, I_{\text{C}}=0$		0.01	μA
DC current gain	$h_{\text{FE}(1)}$	$V_{\text{CE}}=10\text{V}, I_{\text{C}}=0.1\text{mA}$	35		
	$h_{\text{FE}(2)}$	$V_{\text{CE}}=10\text{V}, I_{\text{C}}=1\text{mA}$	50		
	$h_{\text{FE}(3)}$	$V_{\text{CE}}=10\text{V}, I_{\text{C}}=10\text{mA}$	75		
	$h_{\text{FE}(4)}$	$V_{\text{CE}}=10\text{V}, I_{\text{C}}=150\text{mA}$	100	300	
	$h_{\text{FE}(5)}$	$V_{\text{CE}}=1\text{V}, I_{\text{C}}=150\text{mA}$	50		
	$h_{\text{FE}(6)}$	$V_{\text{CE}}=10\text{V}, I_{\text{C}}=500\text{mA}$	40		
Collector-emitter saturation voltage	$V_{\text{CE(sat)}}$	$I_{\text{C}}=500\text{mA}, I_{\text{B}}=50\text{mA}$		1	V
	$V_{\text{CE(sat)}}$	$I_{\text{C}}=150\text{mA}, I_{\text{B}}=15\text{mA}$		0.3	V
Base-emitter saturation voltage	$V_{\text{BE(sat)}}$	$I_{\text{C}}=500\text{mA}, I_{\text{B}}=50\text{mA}$		2.0	V
	$V_{\text{BE(sat)}}$	$I_{\text{C}}=150\text{mA}, I_{\text{B}}=15\text{mA}$	0.6	1.2	V
Transition frequency	f_{T}	$V_{\text{CE}}=10\text{V}, I_{\text{C}}=20\text{mA}$ $f=100\text{MHz}$	300		MHz
Output Capacitance	C_{ob}	$V_{\text{CB}}=10\text{V}, I_{\text{E}}=0, f=1\text{MHz}$		8	pF
Delay time	t_{d}	$V_{\text{CC}}=30\text{V}, I_{\text{C}}=150\text{mA}$		10	ns
Rise time	t_{r}	$V_{\text{BE(off)}}=0.5\text{V}, I_{\text{B1}}=15\text{mA}$		25	ns
Storage time	t_{s}	$V_{\text{CC}}=30\text{V}, I_{\text{C}}=150\text{mA}$		225	ns
Fall time	t_{f}	$I_{\text{B1}}=-I_{\text{B2}}=15\text{mA}$		60	ns

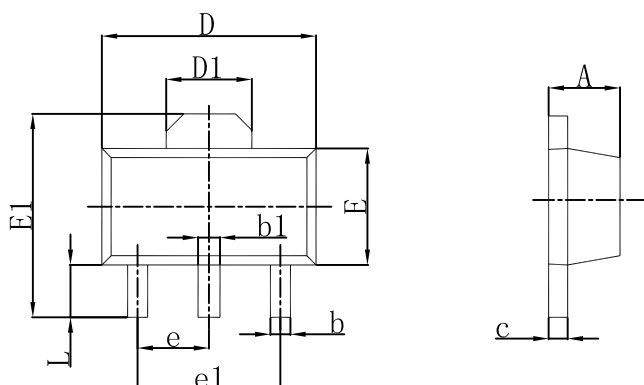


Typical Characteristics



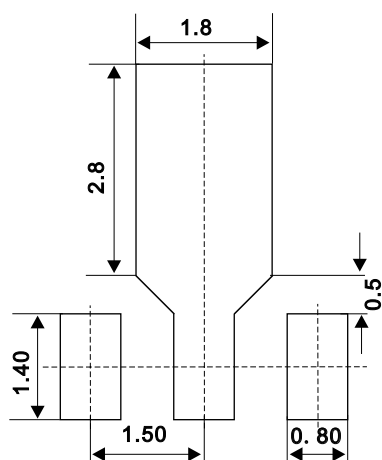


SOT-89-3L Package Outline Dimensions



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.