

Plastic-Encapsulate Transistors

TRANSISTOR (NPN)

FEATURES

- Epitaxial planar die construction
- Complementary PNP Type available(2N2907A)

MARKING: 1P

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

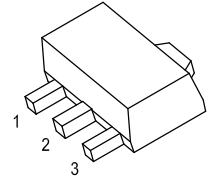
Symbol	Parameter	Value	Unit
V_{CB0}	Collector-Base Voltage	75	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	600	mA
P_C	Collector Power Dissipation	0.5	W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55 ~150	$^{\circ}\text{C}$

SOT-89

1. BASE

2. COLLECTOR

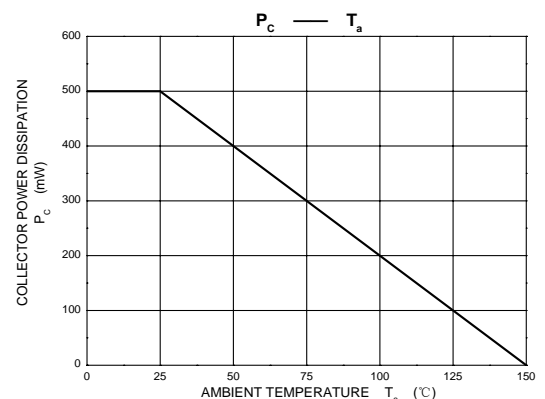
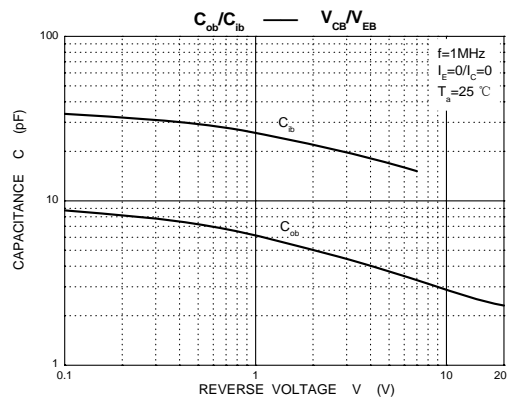
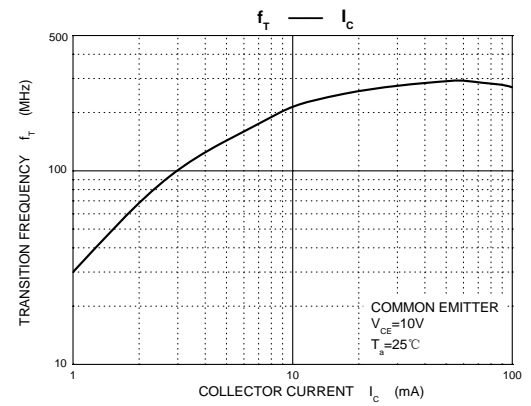
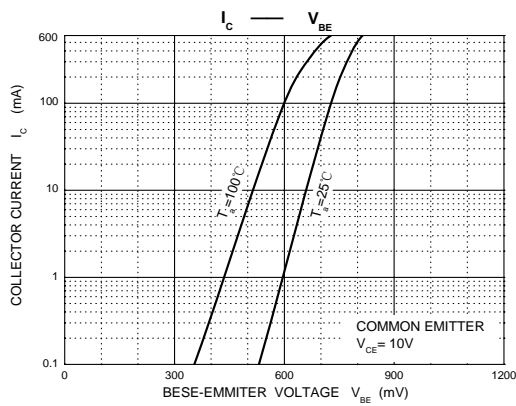
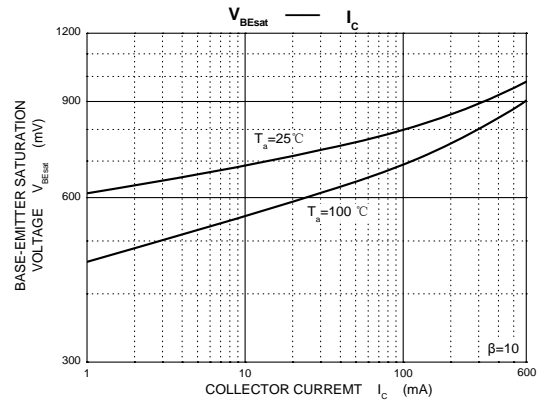
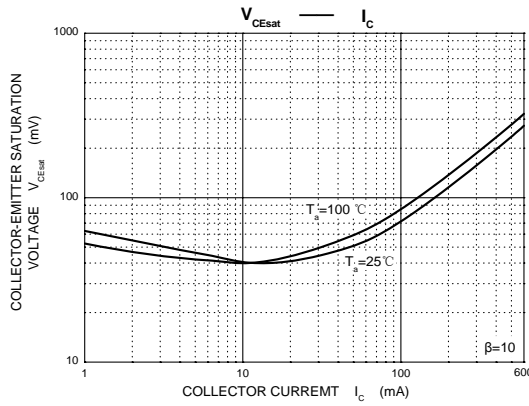
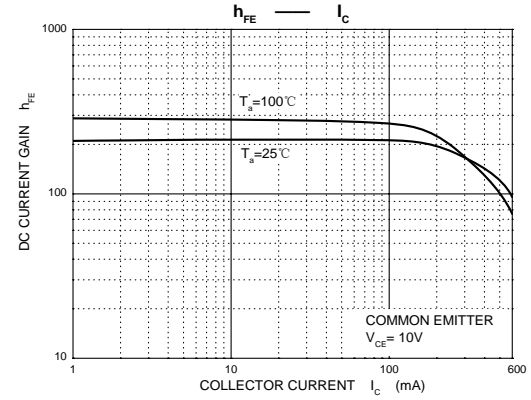
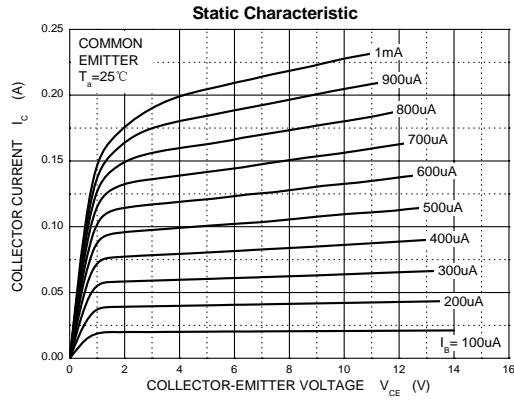
3. EMITTER



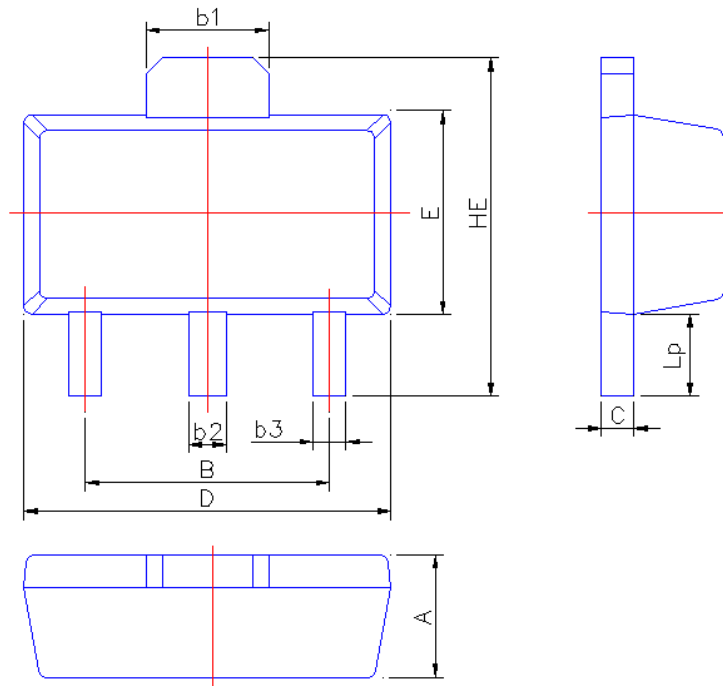
ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

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

Typical Characteristics



SOT-89 PACKAGE OUTLINE



Symbol	Dimension in Millimeters	
	Min	Max
A	1.40	1.60
B	2.95	3.05
b1	1.45	1.70
b2	0.45	0.56
b3	0.35	0.50
C	0.35	0.50
D	4.40	4.60
E	2.35	2.55
HE	3.90	4.40
Lp	0.90	1.10