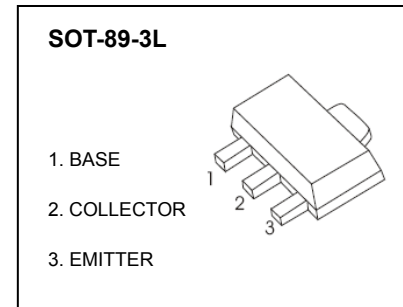
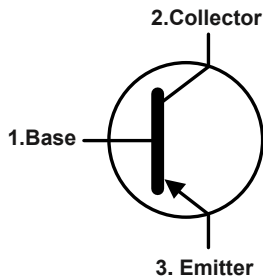


### PNP Epitaxial Planar Silicon Transistors

**● Features**

- 1) Low saturation voltage, typically  
 $V_{CE(sat)} = -400\text{mV (Max.)}$   
 $(I_C/I_B = -500\text{mA}/-25\text{mA})$
- 2) High speed switching

**● Inner circuit**



**Marking Code : MC**

**● Absolute maximum ratings ( $T_a = 25^\circ\text{C}$ )**

Parameter	Symbol	Values	Unit
Collector-base voltage	$V_{CBO}$	-50	V
Collector-emitter voltage	$V_{CEO}$	-50	V
Emitter-base voltage	$V_{EBO}$	-6	V
Collector current	$I_C$	-1	A
	$I_{CP}^{*1}$	-2	A
Power dissipation	$P_D^{*2}$	0.5	W
	$P_D^{*3}$	2.0	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Range of storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

● **Electrical characteristics** ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Collector-base breakdown voltage	$BV_{CBO}$	$I_C = -100\mu\text{A}$	-50	-	-	V
Collector-emitter breakdown voltage	$BV_{CEO}$	$I_C = -1\text{mA}$	-50	-	-	V
Emitter-base breakdown voltage	$BV_{EBO}$	$I_E = -100\mu\text{A}$	-6	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -50\text{V}$	-	-	-1.0	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -4\text{V}$	-	-	-1.0	$\mu\text{A}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500\text{mA}, I_B = -25\text{mA}$	-	-	-400	mV
DC current gain	$h_{FE}$	$V_{CE} = -2\text{V}, I_C = -50\text{mA}$	180	-	450	-
Transition frequency	$f_T^{*4}$	$V_{CE} = -10\text{V}, I_E = 200\text{mA},$ $f = 100\text{MHz}$	-	400	-	MHz
Output capacitance	$C_{ob}$	$V_{CB} = -10\text{V}, I_E = 0\text{A},$ $f = 1\text{MHz}$	-	12	-	pF
Turn-On time	$t_{on}$	$I_C = -500\text{mA},$ $I_{B1} = -50\text{mA},$	-	40	-	ns
Storage time	$t_{stg}$	$I_{B2} = 50\text{mA},$ $V_{CC} \approx -10\text{V},$	-	250	-	ns
Fall time	$t_f$	$R_L = 20\Omega$ See test circuit	-	35	-	ns

\*1  $P_w = 10\text{ms}$ , Single Pulse

\*2 Each terminal mounted on a reference land.

\*3 Mounted on a ceramic board. (40×40×0.7mm)

\*4 Pulsed

● **Electrical characteristic curves** ( $T_a = 25^\circ\text{C}$ )

Fig.1 Ground Emitter Propagation Characteristics

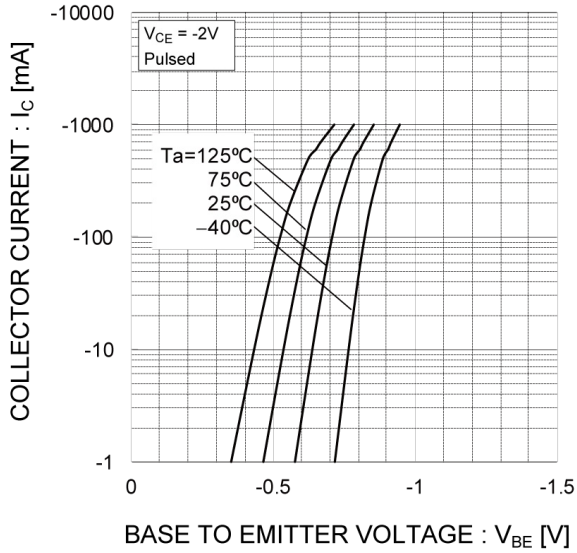


Fig.2 Typical Output Characteristics

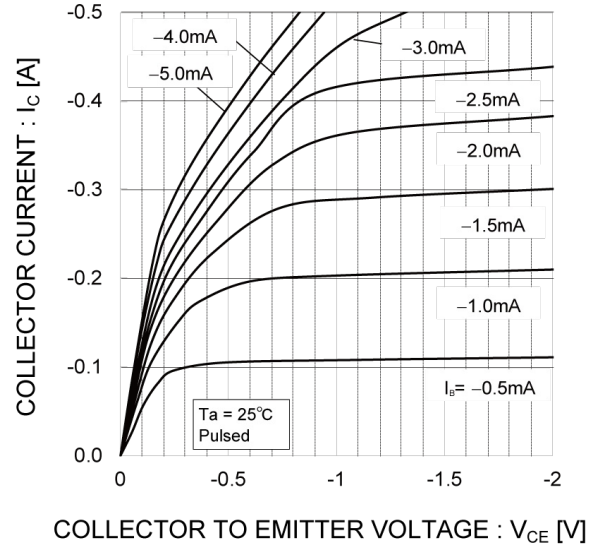


Fig.3 DC Current Gain vs. Collector Current ( $I_c$ )

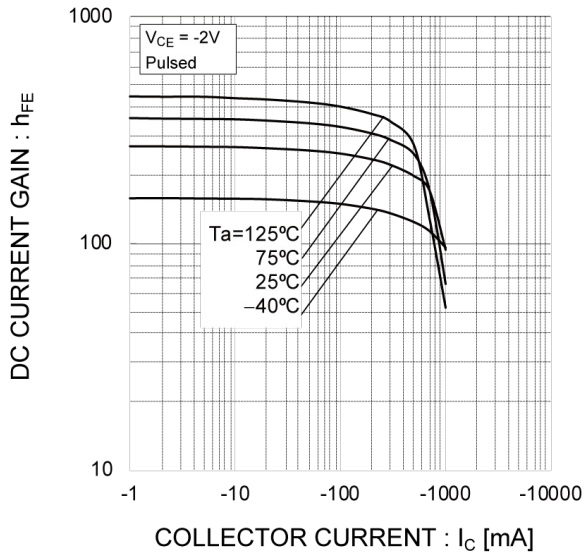
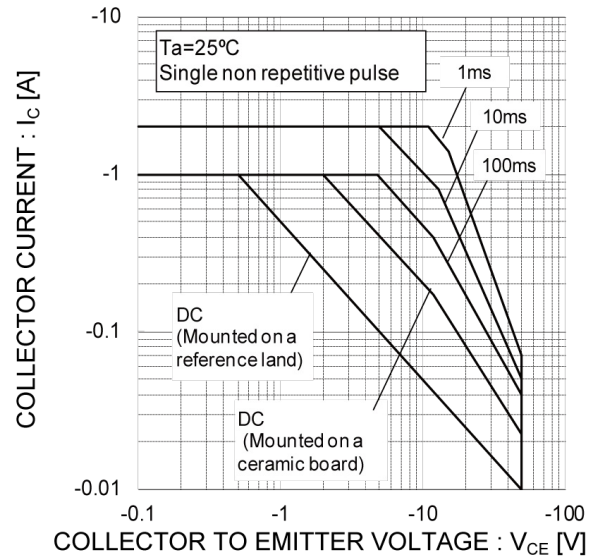
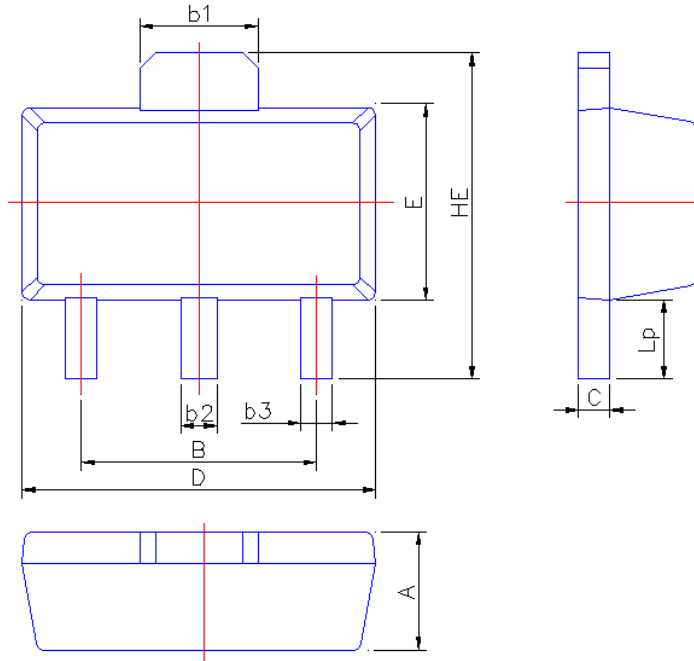


Fig.4 Safe Operating Area



### 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