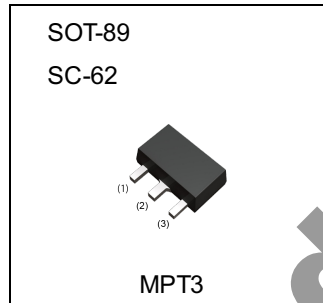


Parameter	Value
$V_{CEO}$	80V
$I_C$	2.5A

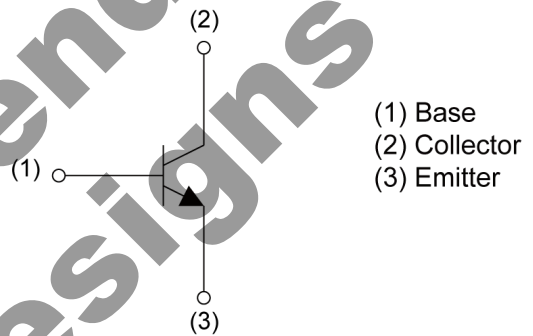
●Outline



●Features

- 1) Low saturation voltage, typically  $V_{CE(sat)}=300\text{mV}(\text{Max.})$  ( $I_C/I_B=1\text{A}/50\text{mA}$ )
- 2) High speed switching

●Inner circuit



●Application

LOW FREQUENCY AMPLIFIER, HIGH SPEED SWITCHING

●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	Marking
2SCR544P	SOT-89 (MPT3)	4540	T100	180	12	1000	NS

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

Parameter	Symbol	Values	Unit
Collector-base voltage	$V_{\text{CBO}}$	80	V
Collector-emitter voltage	$V_{\text{CEO}}$	80	V
Emitter-base voltage	$V_{\text{EBO}}$	6	V
Collector current	$I_{\text{C}}$	2.5	A
	$I_{\text{CP}}^{*1}$	5	A
Power dissipation	$P_{\text{D}}^{*2}$	0.5	W
	$P_{\text{D}}^{*3}$	2.0	W
Junction temperature	$T_{\text{j}}$	150	$^\circ\text{C}$
Range of storage temperature	$T_{\text{stg}}$	-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	$BV_{\text{CBO}}$	$I_{\text{C}} = 100\mu\text{A}$	80	-	-	V
Collector-emitter breakdown voltage	$BV_{\text{CEO}}$	$I_{\text{C}} = 1\text{mA}$	80	-	-	V
Emitter-base breakdown voltage	$BV_{\text{EBO}}$	$I_{\text{E}} = 100\mu\text{A}$	6	-	-	V
Collector cut-off current	$I_{\text{CBO}}$	$V_{\text{CB}} = 80\text{V}$	-	-	1.0	$\mu\text{A}$
Emitter cut-off current	$I_{\text{EBO}}$	$V_{\text{EB}} = 4\text{V}$	-	-	1.0	$\mu\text{A}$
Collector-emitter saturation voltage	$V_{\text{CE(sat)}}$	$I_{\text{C}} = 1\text{A}, I_{\text{B}} = 50\text{mA}$	-	100	300	mV
DC current gain	$h_{\text{FE}}$	$V_{\text{CE}} = 3\text{V}, I_{\text{C}} = 100\text{mA}$	120	-	390	-
Transition frequency	$f_{\text{T}}$	$V_{\text{CE}} = 10\text{V}, I_{\text{E}} = -500\text{mA}, f = 100\text{MHz}$	-	280	-	MHz
Output capacitance	$C_{\text{ob}}$	$V_{\text{CB}} = 10\text{V}, I_{\text{E}} = 0\text{A}, f = 1\text{MHz}$	-	16	-	pF
Turn-On time	$t_{\text{on}}$	$I_{\text{C}} = 1.3\text{A}, I_{\text{B1}} = 130\text{mA}$	-	50	-	ns
Storage time	$t_{\text{stg}}$	$I_{\text{B2}} = -130\text{mA}, V_{\text{CC}} \approx 10\text{V}$	-	700	-	ns
Fall time	$t_{\text{f}}$	$R_{\text{L}} = 7.5\Omega$ See test circuit	-	40	-	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)

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

Fig.1 Ground Emitter Propagation Characteristics

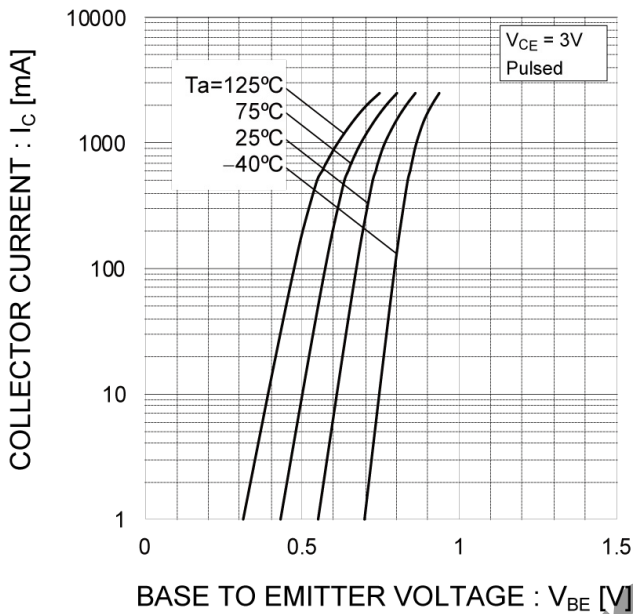


Fig.2 Typical Output Characteristics

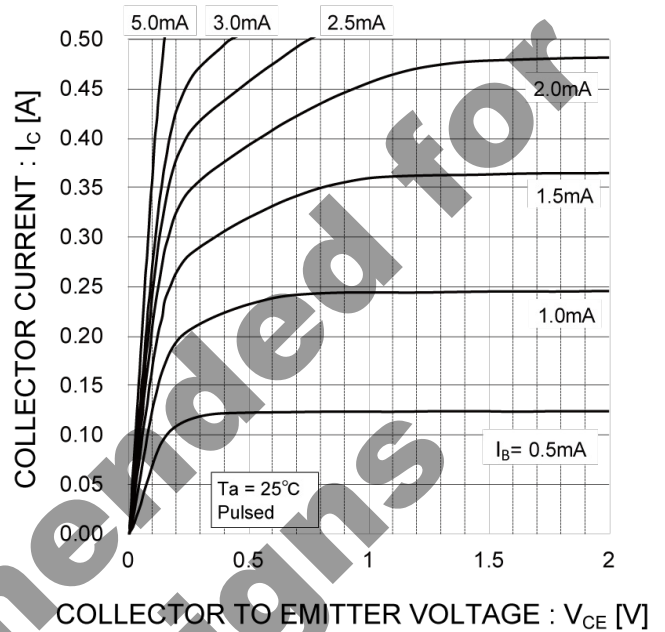


Fig.3 DC Current Gain vs. Collector Current (I)

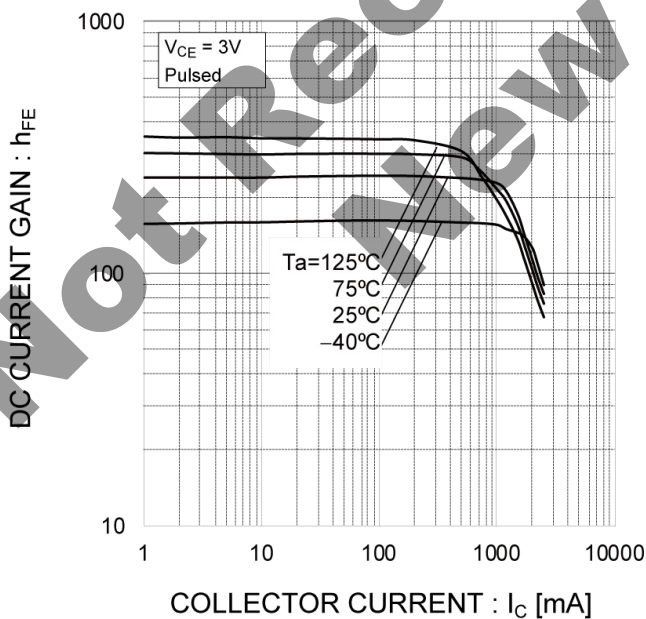
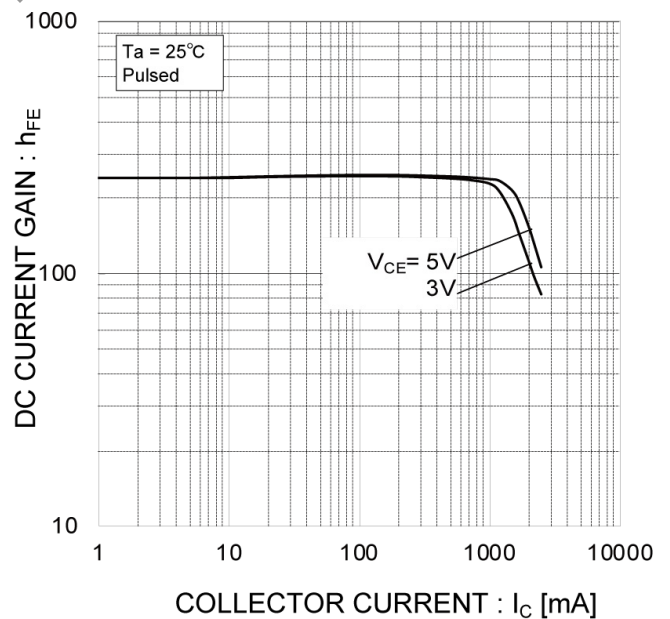


Fig.4 DC Current Gain vs. Collector Current (II)



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

Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (I)

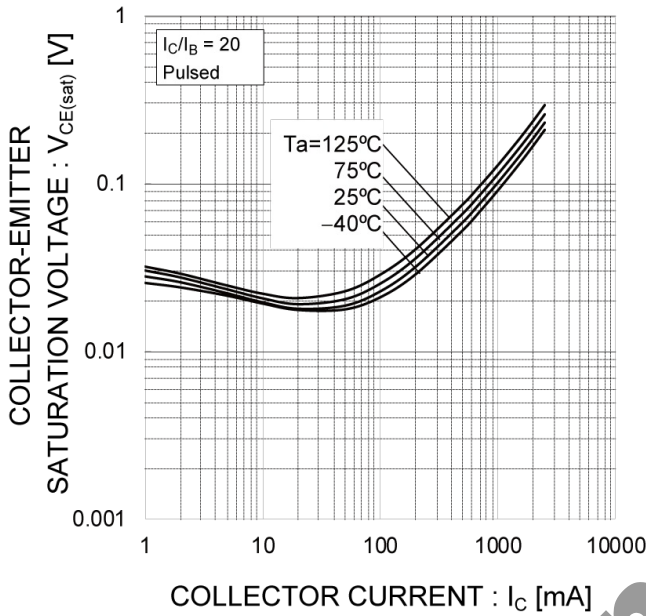


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

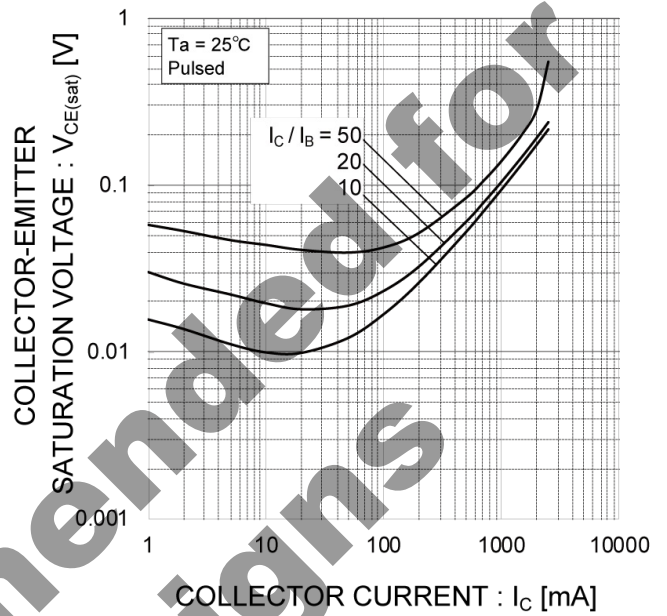


Fig.7 Base-Emitter Saturation Voltage vs. Collector Current

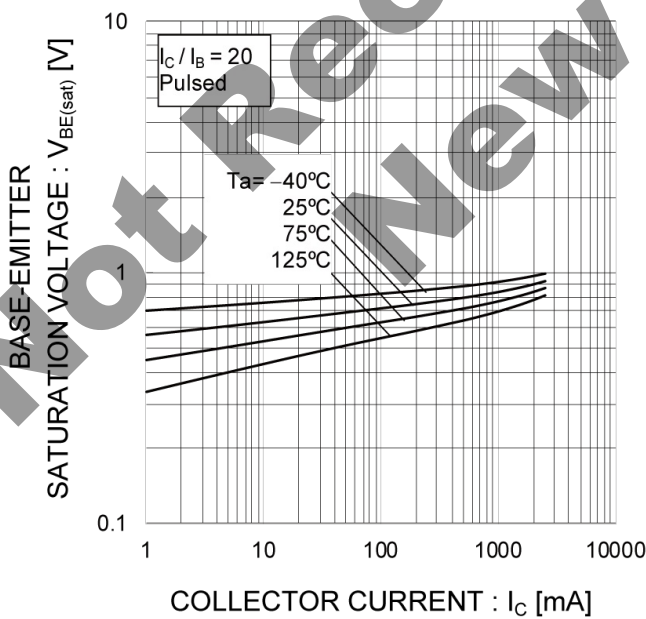
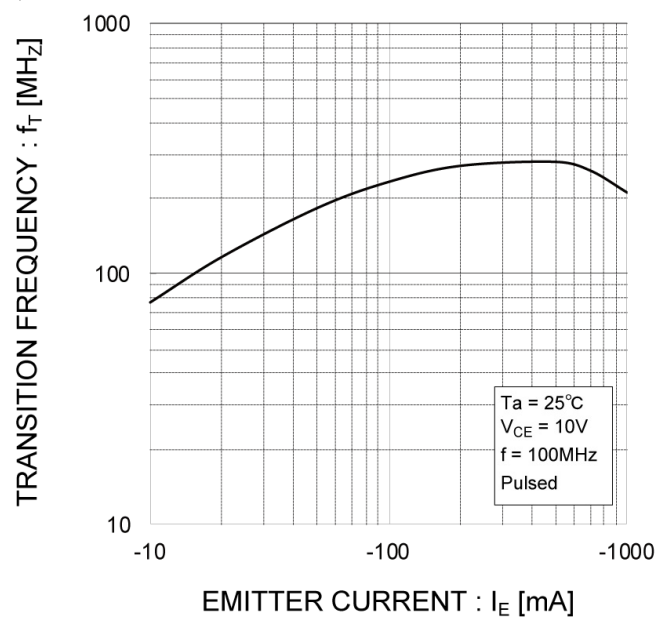


Fig.8 Gain Bandwidth Product vs. Emitter Current



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

Fig.9 Emitter Input Capacitance vs. Emitter-Base Voltage  
Collector Output Capacitance vs. Collector-Base Voltage

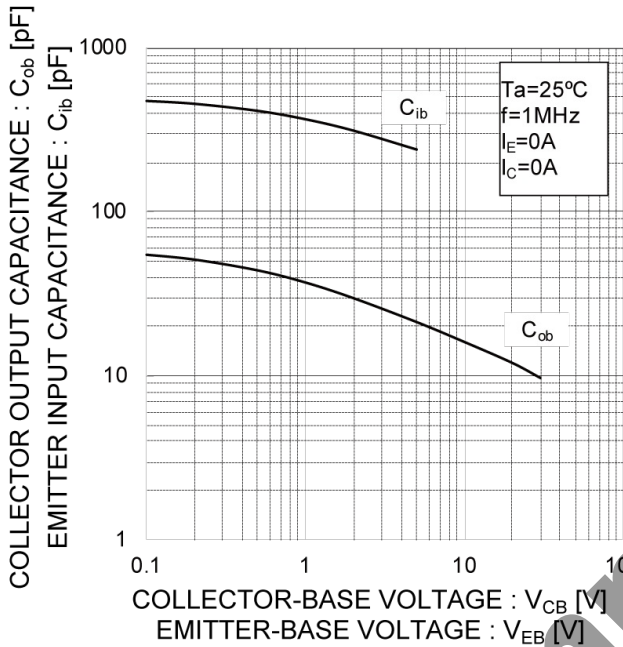
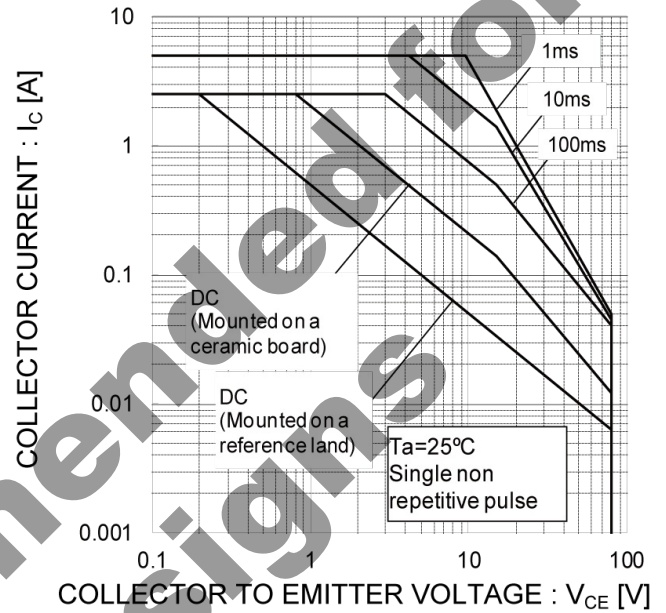
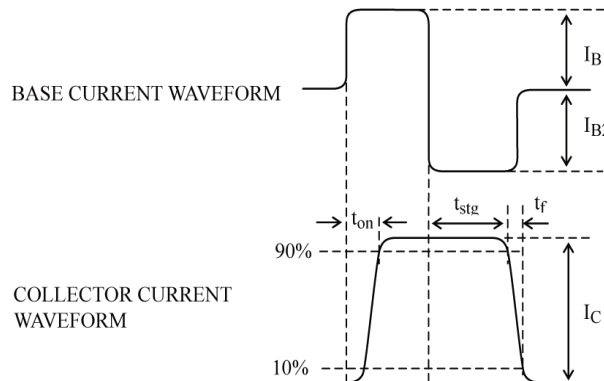
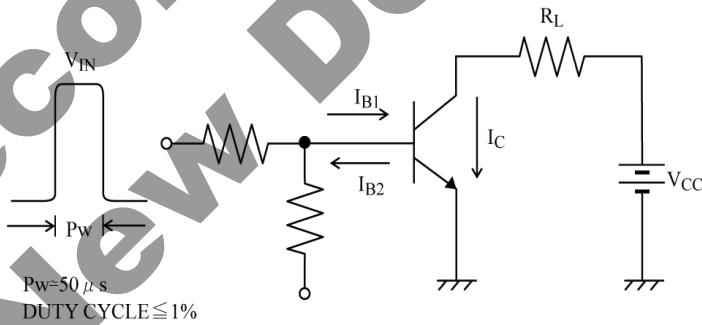


Fig.10 Safe Operating Area



SWITCHING TIME TEST CIRCUIT





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