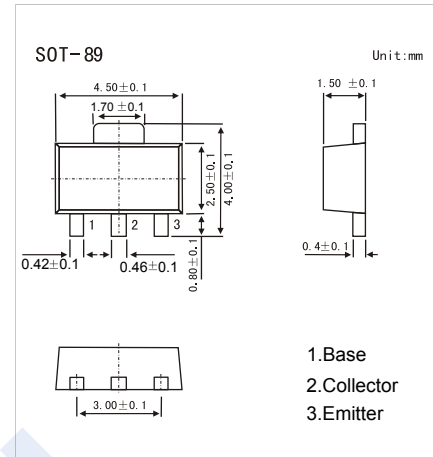


PNP Transistors

2SA1812

■ Features

- High breakdown voltage, $BV_{CEO}=-400V$.
- High switching speed, typically $t_f:1\mu s$ at $I_C=-100mA$.
- High-voltage Switching Transistor

■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	-400	V
Collector - Emitter Voltage	V_{CEO}	-400	
Emitter - Base Voltage	V_{EBO}	-7	
Collector Current - Continuous	I_C	-0.5	A
Collector Current - Pulse	I_{CP}	-1	
Collector Power Dissipation	P_C	0.5	W
		2	
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature range	T_{stg}	-55 to 150	

Note.1: When mounted on a 40X40X0.7mm ceramic board.

■ Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_C = -100 \mu A, I_E = 0$	-400			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C = -1 mA, I_B = 0$	-400			
Emitter - base breakdown voltage	V_{EBO}	$I_E = -100 \mu A, I_C = 0$	-7			
Collector-base cut-off current	I_{CBO}	$V_{CB} = -400 V, I_E = 0$			-10	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -6 V, I_C = 0$			-10	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -100 mA, I_B = -10 mA$			-1	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = -100 mA, I_B = -10 mA$			-1.2	
DC current gain	h_{FE}	$V_{CE} = -5 V, I_C = -50 mA$	82		270	
Turn-on time	t_{on}	$I_C = -100 mA, R_L = 1.5 k\Omega$ $I_{B1} = -I_{B2} = -10 mA$ $V_{CC} = 0 \text{ to } -150 V$		0.6		μs
Storage time	t_{stg}			2.7		
Fall time	t_f			1		
Collector output capacitance	C_{ob}	$V_{CB} = -10 V, I_E = 0, f = 1 MHz$		18		pF
Transition frequency	f_T	$V_{CE} = -5 V, I_E = 50 mA, f = 5 MHz$		12		MHz

■ Marking

Marking	AJ*
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PNP Transistors

2SA1812

■ Typical Characteristics

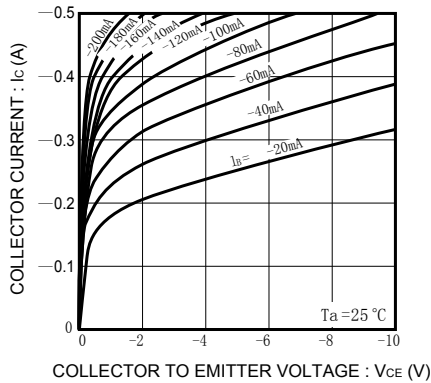


Fig.1 Grouded emitter output characteristics

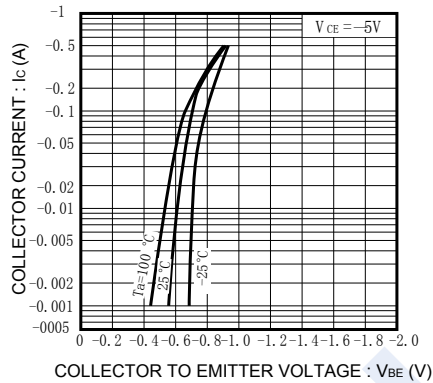


Fig.2 Grouded emitter propagation characteristics

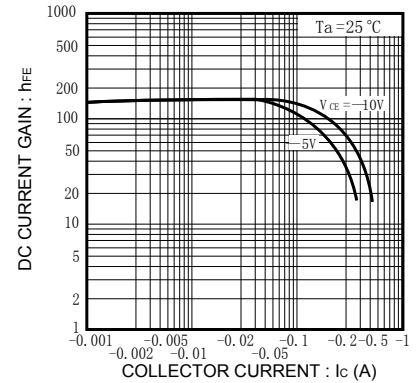


Fig.3 DC current gain vs. collector current (I)

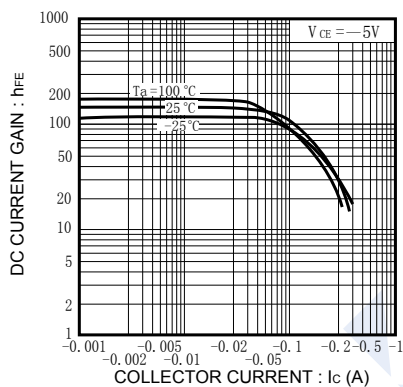


Fig.4 DC current gain vs. collector current (II)

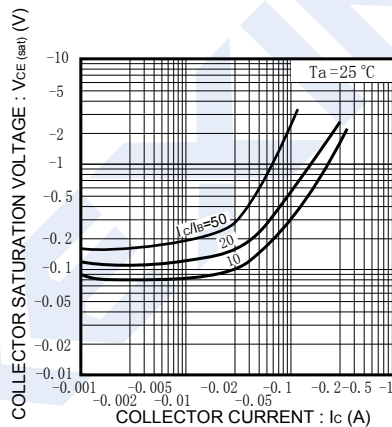


Fig.5 Collector-emitter saturation voltage vs. collector current

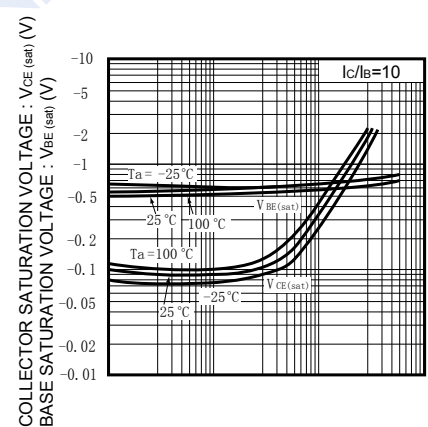
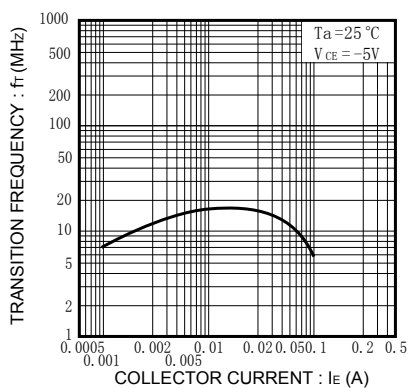
Fig.6 Collector-emitter saturation voltage vs. collector current
Base-emitter saturation voltage vs. collector current

Fig.7 TRANSITION FREQUENCY vs. EMITTER CURRENT

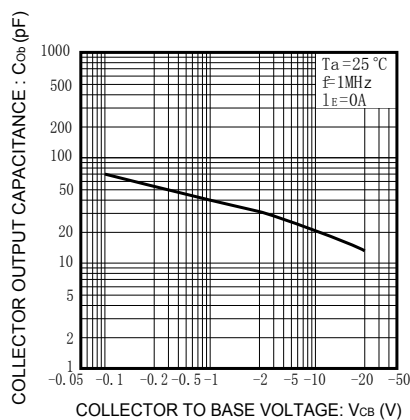


Fig.8 Collector output capacitance vs. collector-base voltage

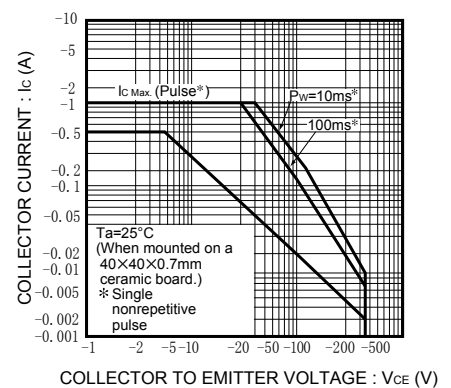


Fig.9 Safe operating area (2SA1812)

PNP Transistors

2SA1812

■ Typical Characteristics

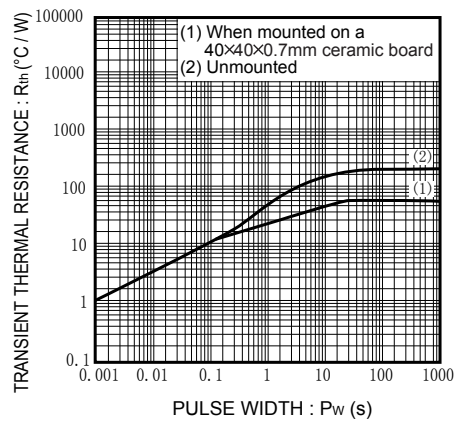


Fig.10 TRANSIENT THERMAL RESISTANCE (2SA1812)

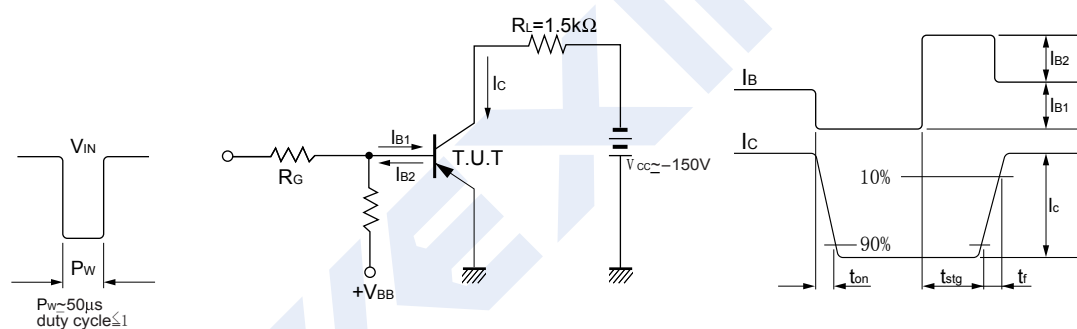


Fig.11 Switching characteristic measurement circuit