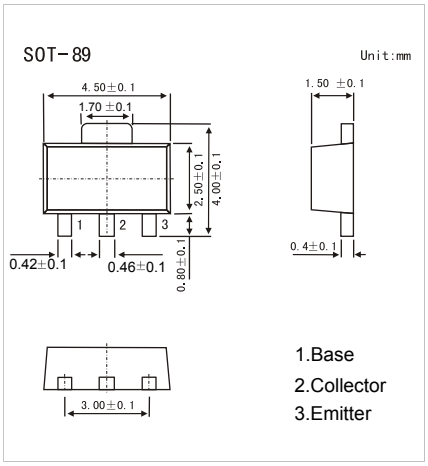
PNP Transistors

2SA1812



■ Features

- High breakdown voltage, BV_{CEO}=-400V.
- High switching speed, typically tf :1us at I_C =-100mA.
- High-voltage Switching Transistor

■ Absolute Maximum Ratings Ta = 25℃

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	℃
Storage Temperature range	T_{stg}	-55 to 150	

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

■ Electrical Characteristics Ta = 25℃

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

■ Marking

Marking	AJ*

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■ Typical Characterisitics

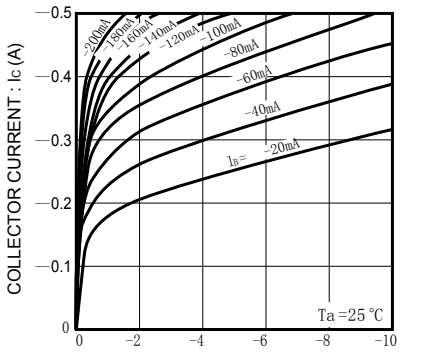

Fig.1 Grouded emitter output characteristics

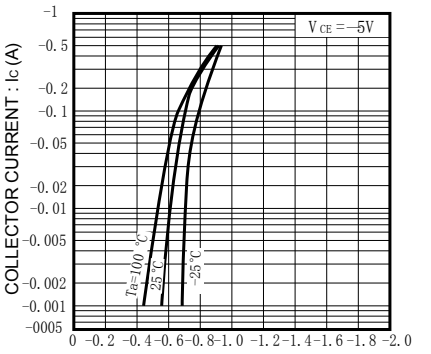

Fig.2 Grounded emitter propagation characteristics

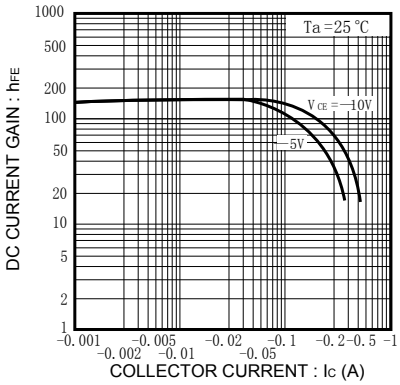

Fig.3 DC current gain vs. collector current (I)

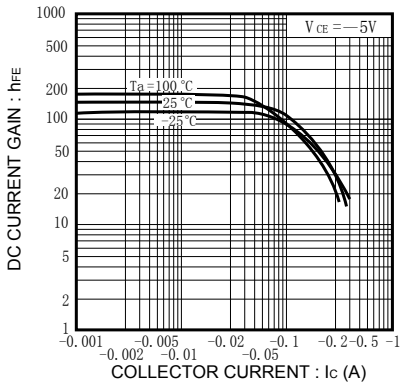

Fig.4 DC current gain vs. collector current (II)

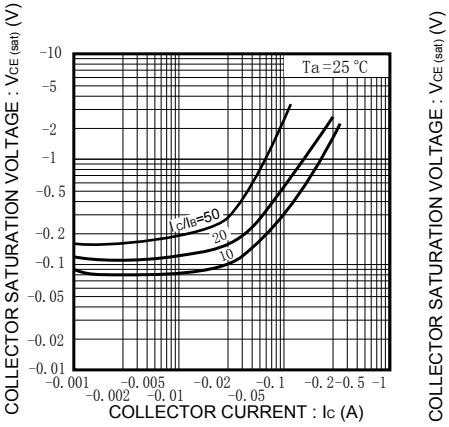

Fig.5 Collector-emitter saturation voltage vs. collector current

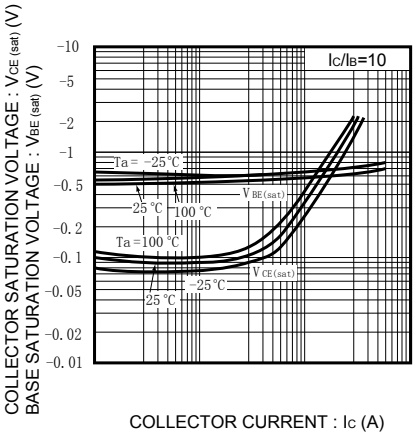

Fig.6 Collector-emitter saturation voltage vs. collector current Base-emitter saturation voltage vs. collector current

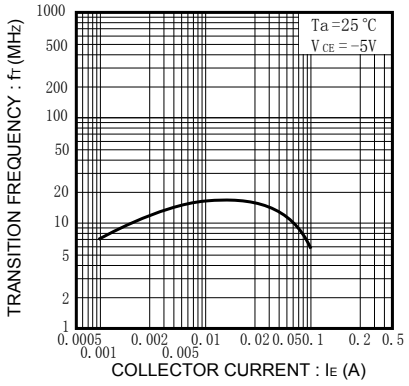

Fig.7 TRANSITION FREQUENCY vs. EMITTER CURRENT

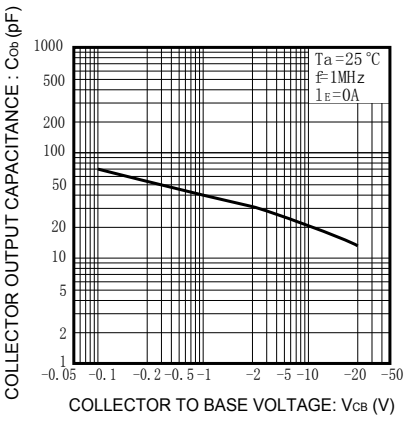

Fig.8 Collector output capacitance vs. collector-base voltage

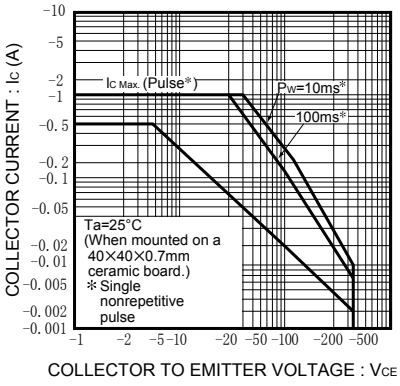

Fig.9 Safe operating area (2SA1812)

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■ Typical Characterisitics

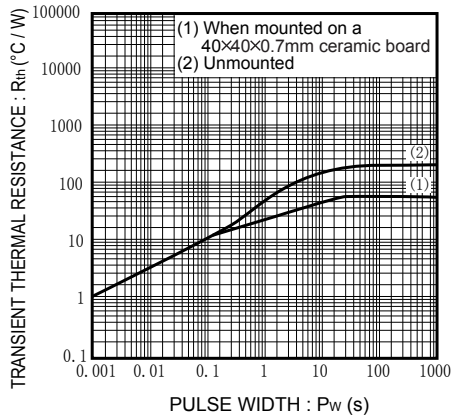

Fig.10 TRANSIENT THERMAL RESISTANCE (2SA1812)

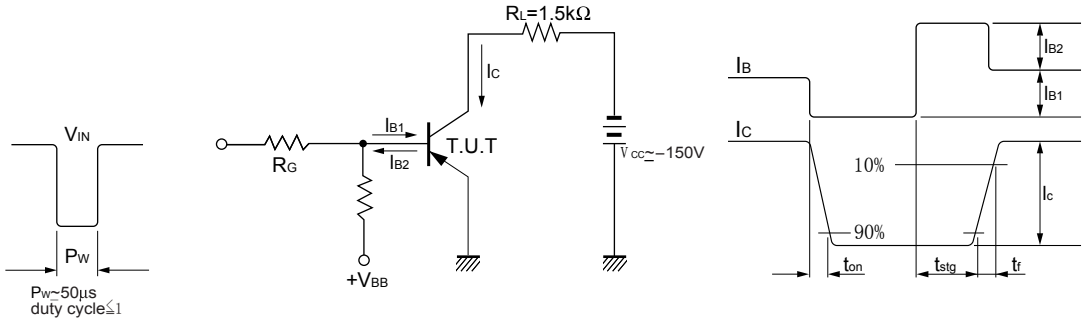

Fig.11 Switching characteristic measurement circuit