

**160V/1.5A Switching Applications****Applications**

- Color TV audio output, converters, inverters.

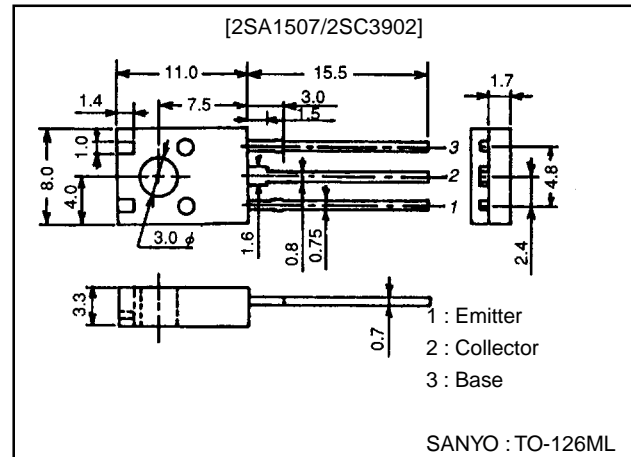
Features

- High breakdown voltage.
- Large current capacity.
- Adoption of FBET and MBIT process.
- The plastic-covered heat sink eliminates the need for an insulator when mounting the 2SA1507/2SC3902.

Package Dimensions

unit:mm

2042B



() : 2SA1507

Specifications**Absolute Maximum Ratings at Ta = 25°C**

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-)180	V
Collector-to-Emitter Voltage	V_{CE0}		(-)160	V
Emitter-to-Base Voltage	V_{EB0}		(-)6	V
Collector Current	I_C		(-)1.5	A
Peak Collector Current	I_{CP}		(-)2.5	A
Collector Dissipation	P_C	$T_c=25^\circ\text{C}$	1.5	W
			10	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CB0}	$V_{CB}=-120\text{V}, I_E=0$			(-)0.1	μA
Emitter Cutoff Current	I_{EB0}	$V_{EB}=-4\text{V}, I_C=0$			(-)0.1	μA
DC Current Gain	h_{FE1}	$V_{CE}=-5\text{V}, I_C=-10\text{mA}$	100*		400*	
	h_{FE2}	$V_{CE}=-5\text{V}, I_C=-10\text{mA}$	90			
Gain-Bandwidth Product	f_T	$V_{CE}=-10\text{V}, I_C=-50\text{mA}$		120		MHz
Output Capacitance	C_{ob}	$V_{CB}=-10\text{V}, f=1\text{MHz}$		(22)		pF
				14		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-500\text{mA}, I_B=-50\text{mA}$		(-0.2)	(-0.5)	V
				0.13	0.45	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-500\text{mA}, I_B=-50\text{mA}$		(-)0.85	(-)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CB0}$	$I_C=-10\mu\text{A}, I_E=0$	(-)180			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CE0}$	$I_C=-1\text{mA}, R_{BE}=\infty$	(-)160			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EB0}$	$I_E=-10\mu\text{A}, I_C=0$	(-)6			V
Turn-ON Time	t_{on}	See specified Test Circuit		0.04		μs
Storage Time	t_{stg}	See specified Test Circuit		(0.7)		μs
				1.2		μs
Fall Time	t_f	See specified Test Circuit		(0.04)		μs
				0.08		μs

SANYO Electric Co., Ltd. Semiconductor Business Headquarters

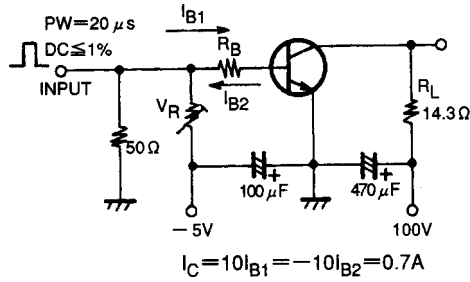
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2SA1507/2SC3902

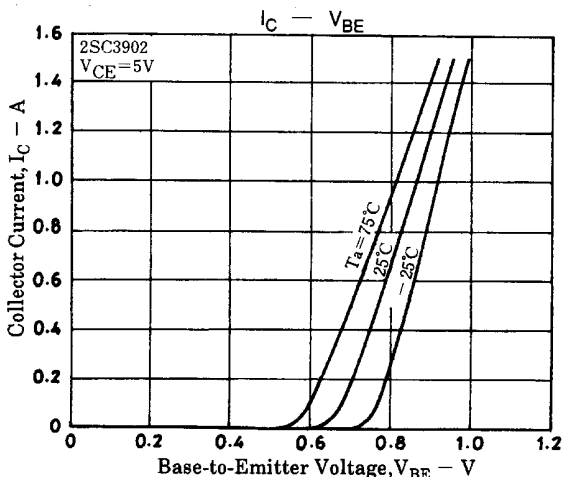
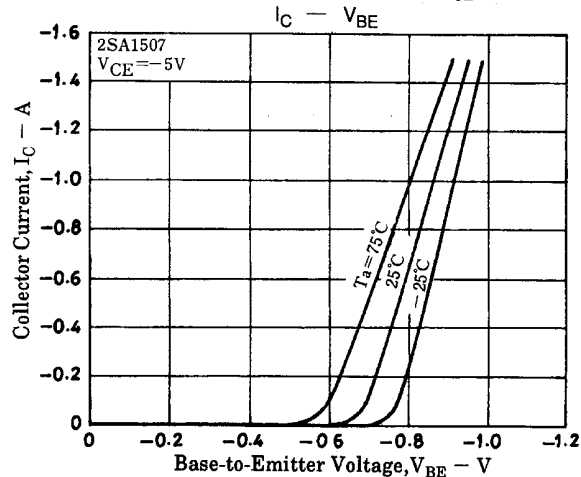
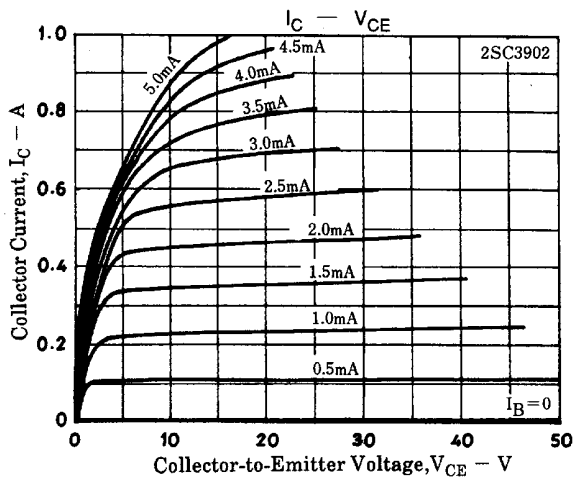
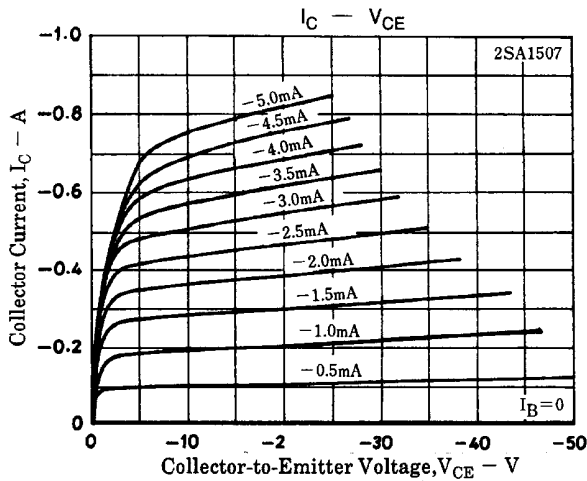
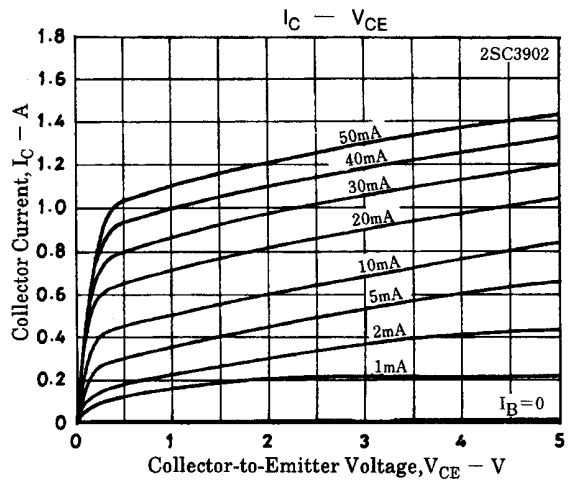
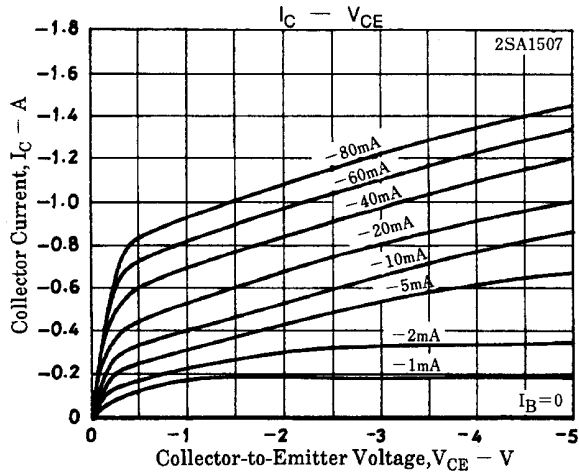
* ; The 2SA1507/2SC3902 are classified by 100mA h_{FE} as follows :

100	R	200	140	S	280	200	T	400
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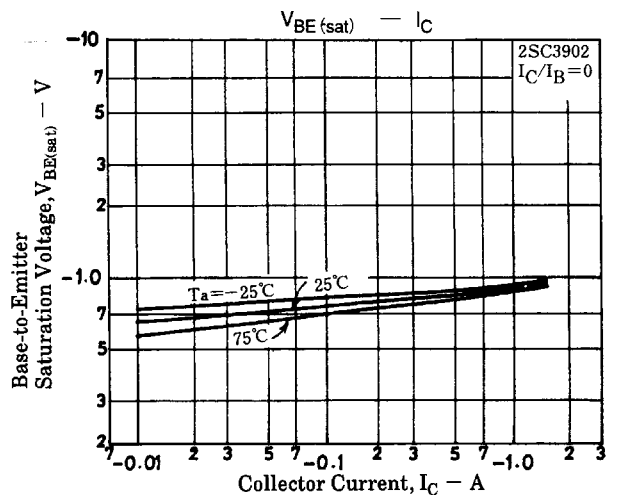
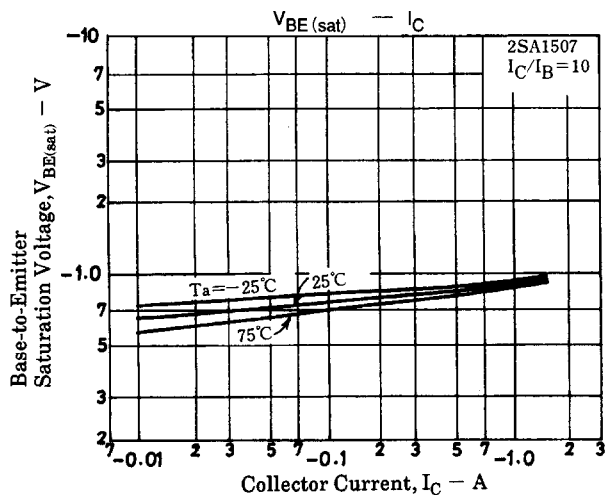
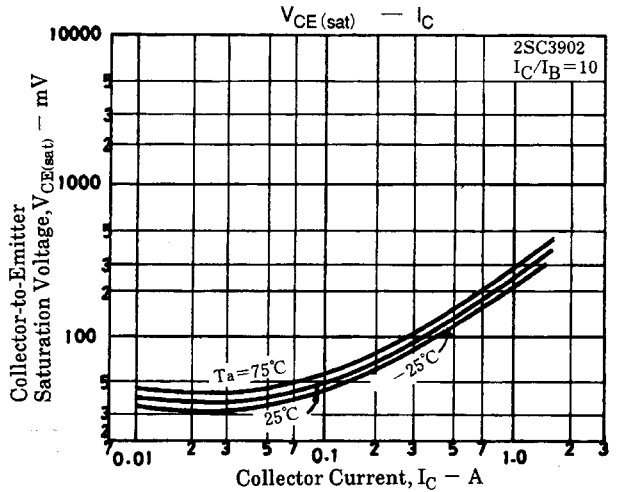
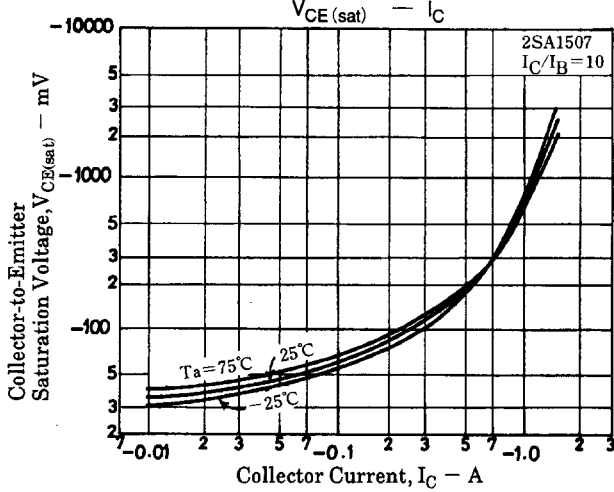
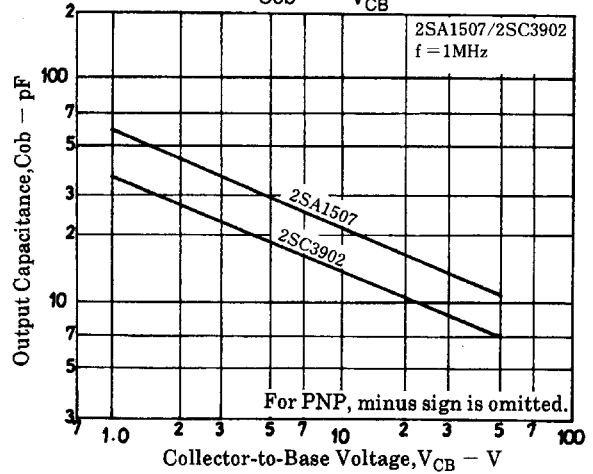
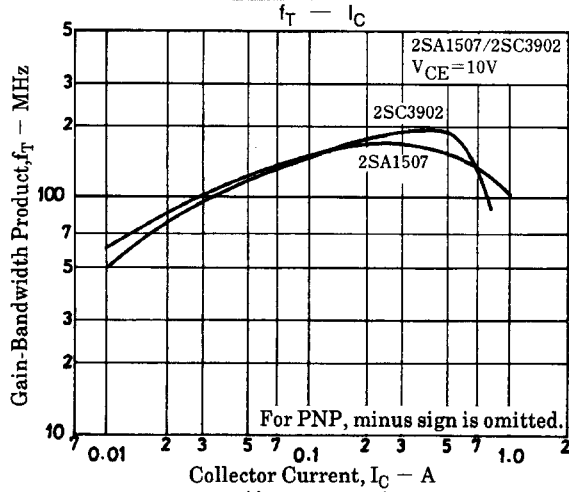
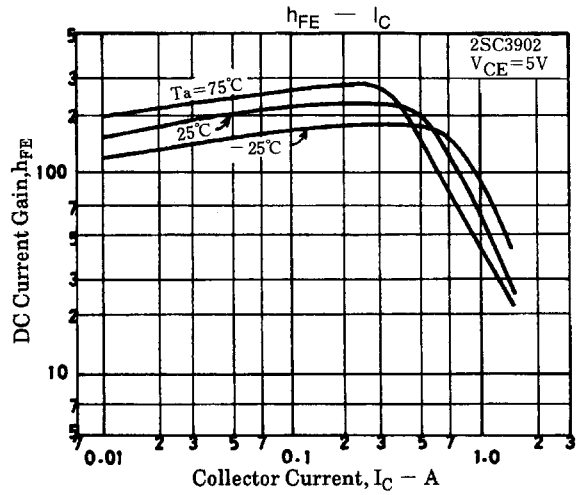
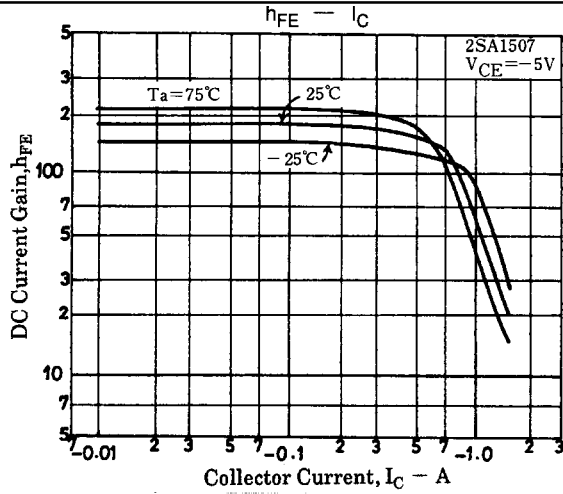
Switching Time Test Circuit



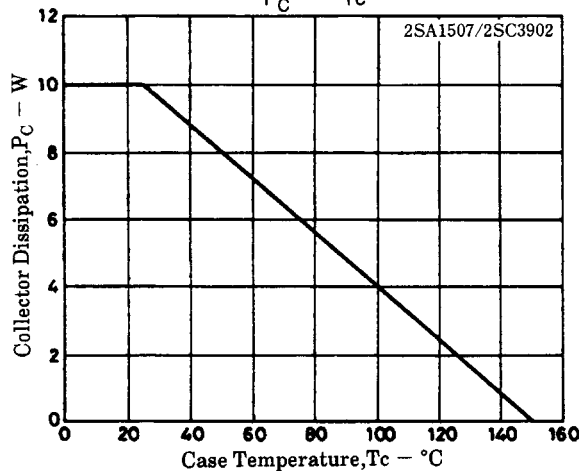
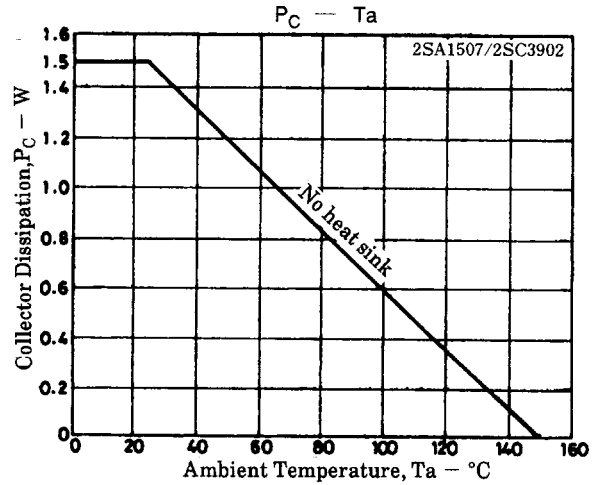
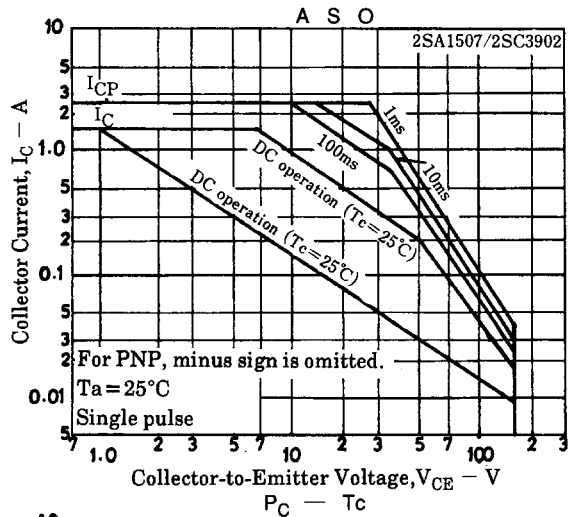
(For PNP, the polarity is reversed.)
Unit (resistance : Ω , capacitance : F)



2SA1507/2SC3902



2SA1507/2SC3902



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