



2SA1507/2SC3902

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.

() : 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_{CEO}		(-)160	V
Emitter-to-Base Voltage	V_{EBO}		(-)6	V
Collector Current	I_C		(-)1.5	A
Peak Collector Current	I_{CP}		(-)2.5	A
Collector Dissipation	P_C		1.5	W
		$T_c=25^\circ\text{C}$	10	W
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°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_{EBO}	$V_{EB} = (-)4\text{V}, I_C = 0$			(-)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

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

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Rank	R	S	T
h_{FE}	100 to 200	140 to 280	200 to 400

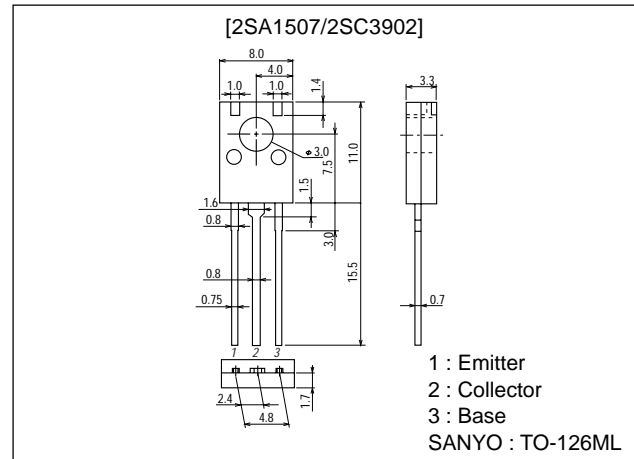
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Package Dimensions

unit:mm

2042B

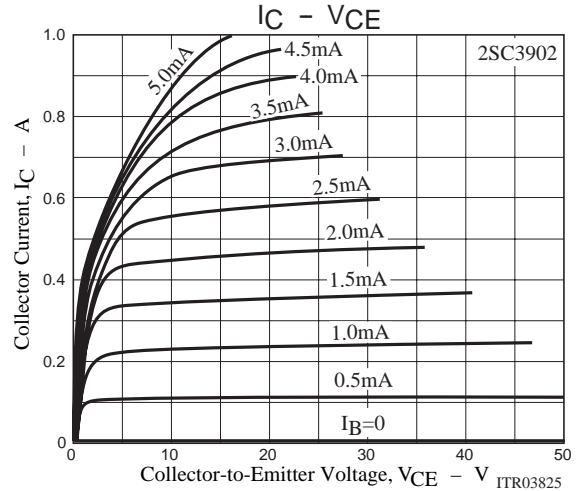
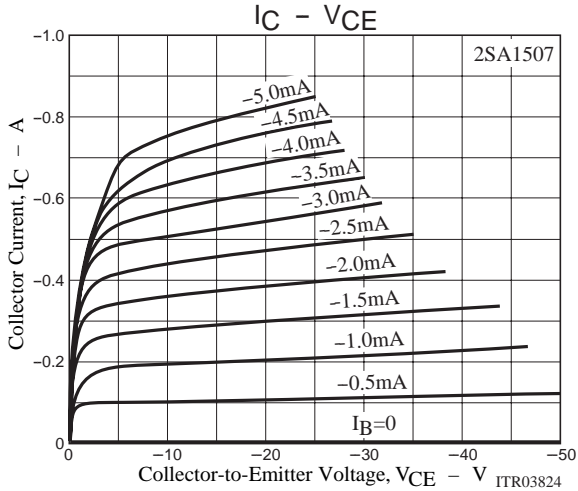
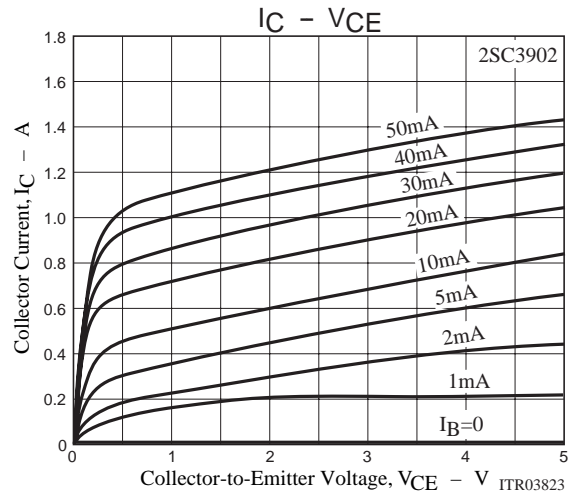
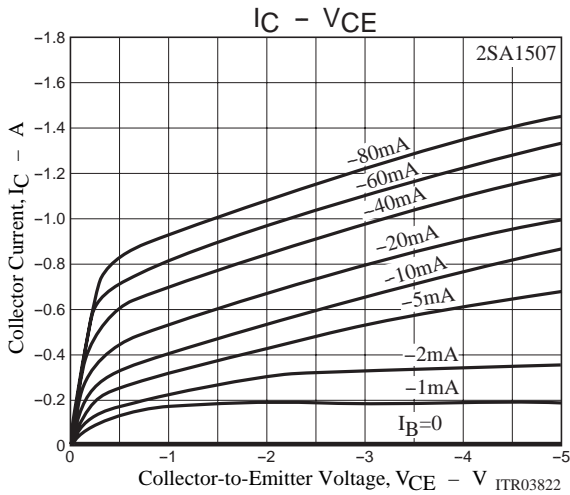
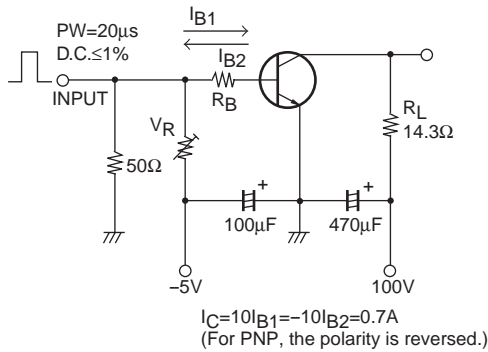


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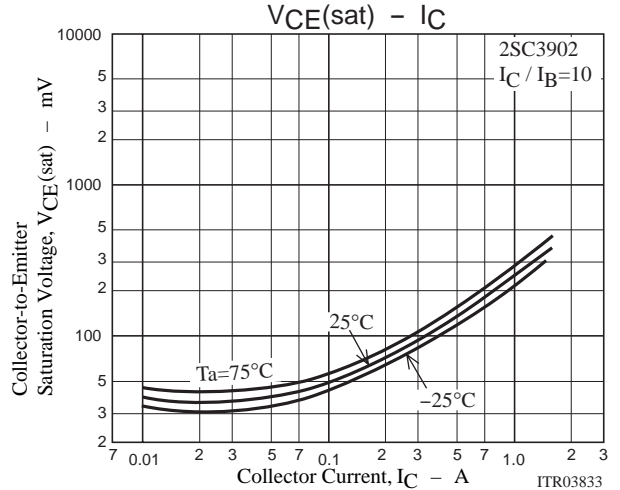
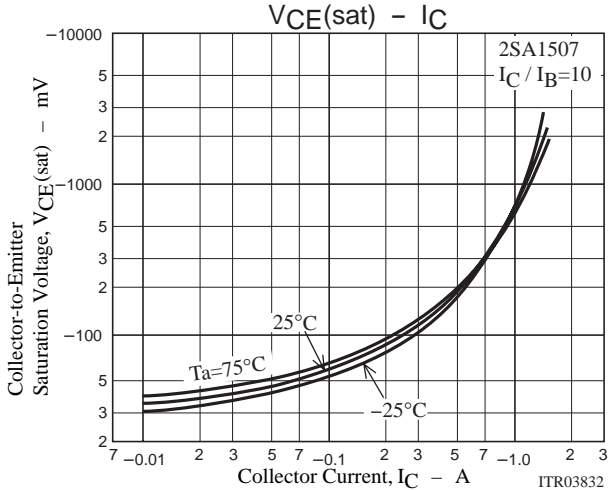
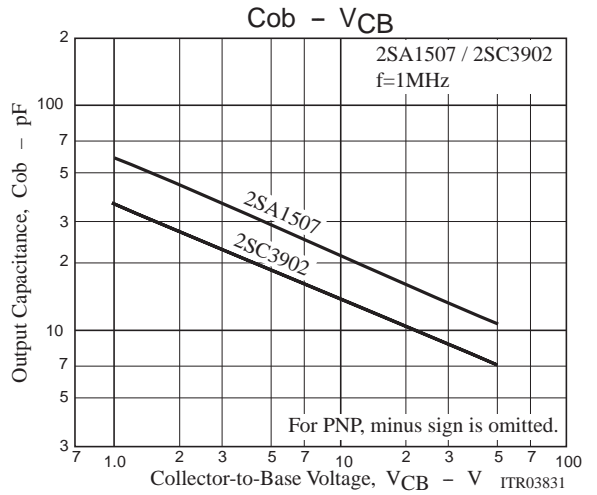
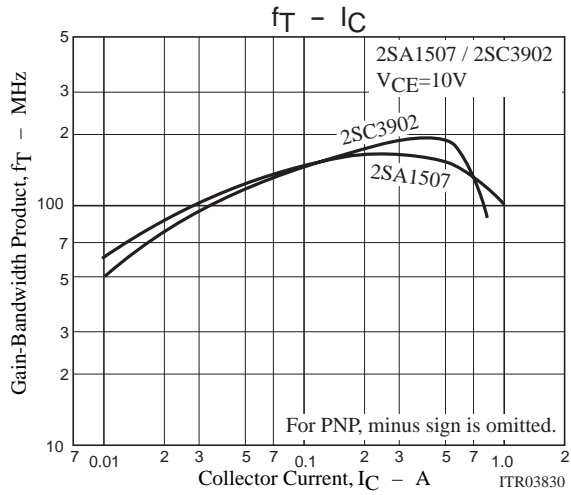
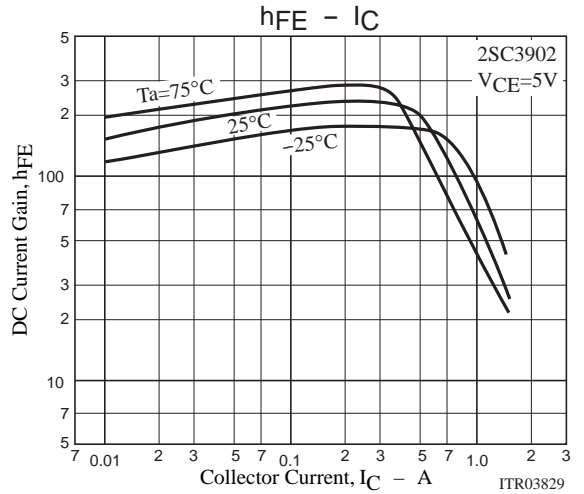
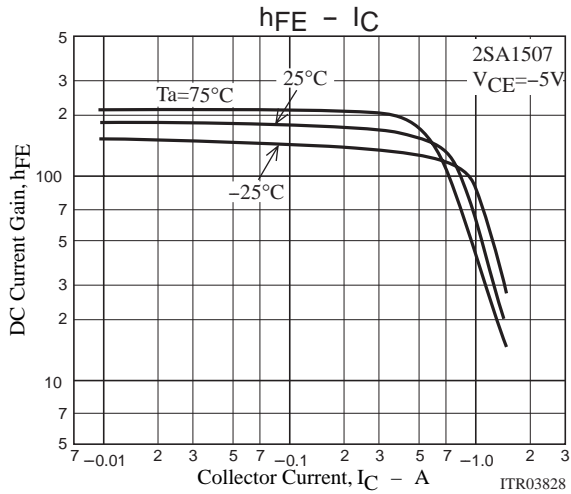
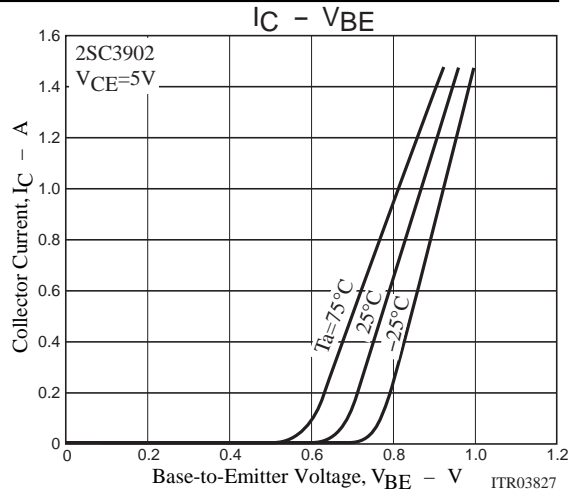
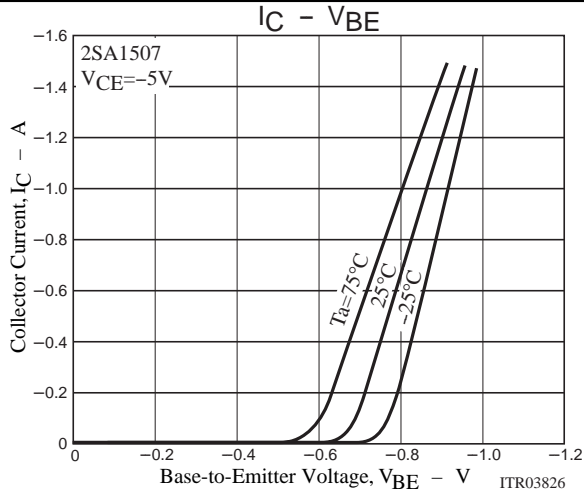
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		(22)		pF
				14		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$		(-0.2)	(-0.5)	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$		0.13	0.45	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-)	180		V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)	160		V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$	(-)	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

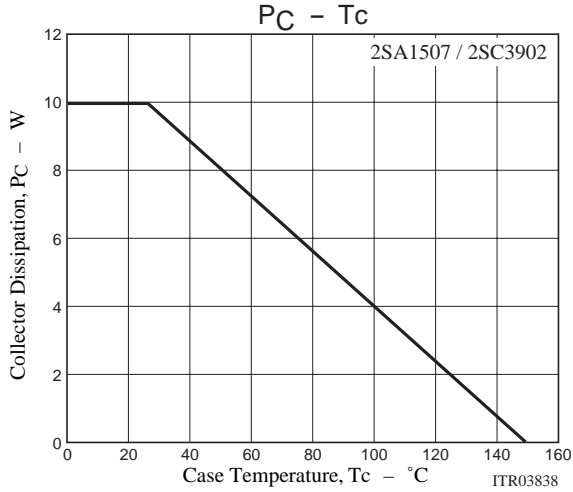
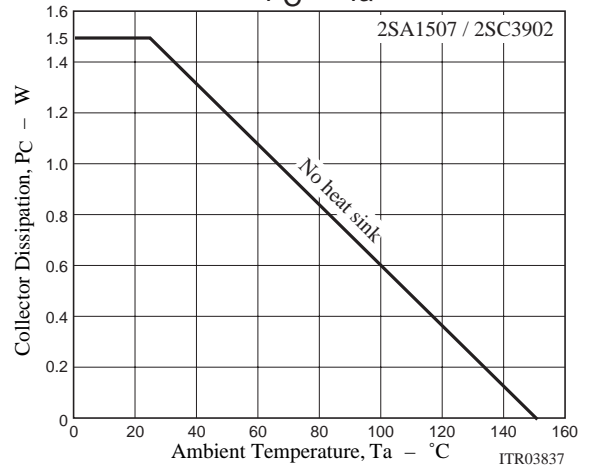
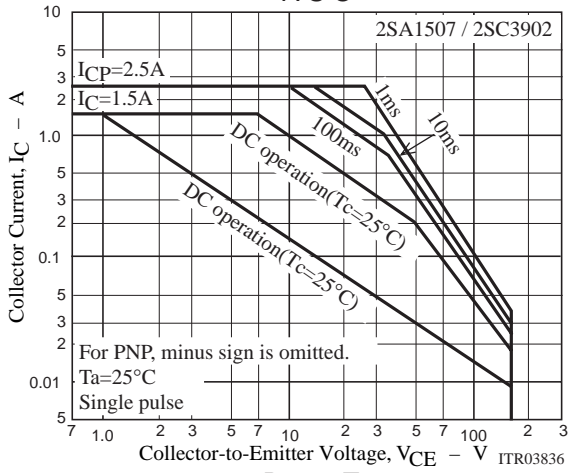
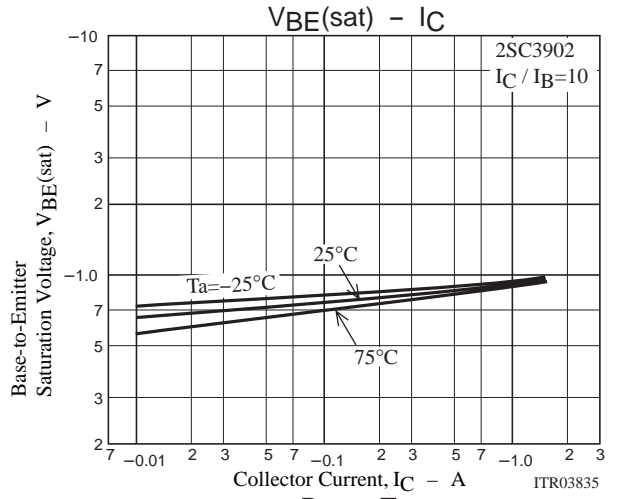
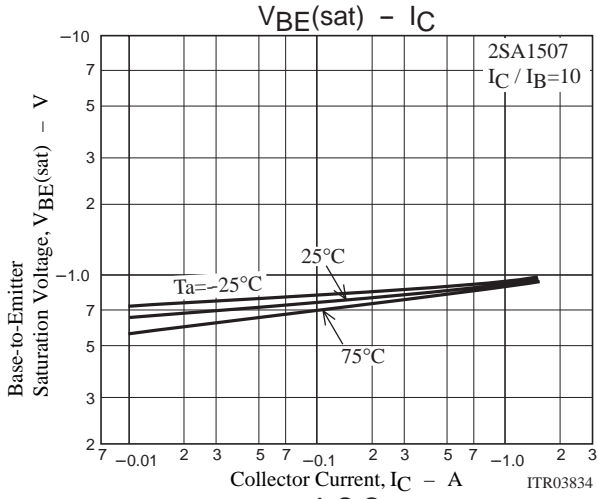
Switching Time Test Circuit



2SA1507/2SC3902



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