



2SA1507/2SC3902

160V/1.5A Switching Applications

Applications

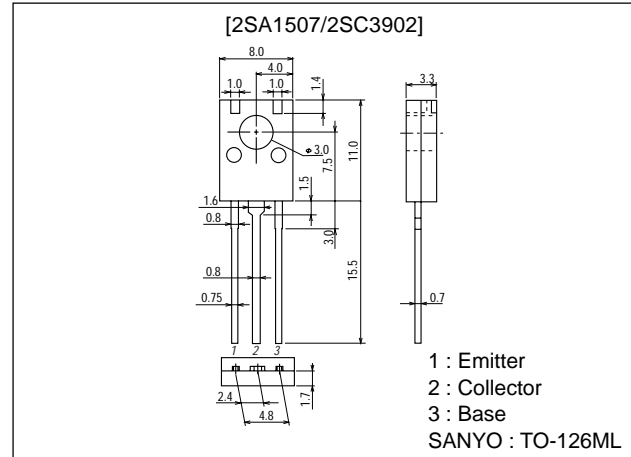
- Color TV audio output, converters, inverters.

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.

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 _{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°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} =(-)120V, I _E =0			(-)0.1	μA
Emitter Cutoff Current	I _{EBO}	V _{EB} =(-)4V, I _C =0			(-)0.1	μA
DC Current Gain	h _{FE1}	V _{CE} =(-)5V, I _C =(-)10mA	100*		400*	
	h _{FE2}	V _{CE} =(-)5V, I _C =(-)10mA	90			
Gain-Bandwidth Product	f _T	V _{CE} =(-)10V, I _C =(-)50mA		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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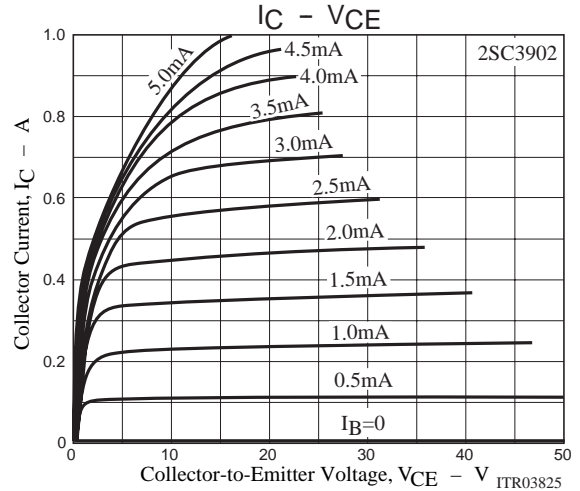
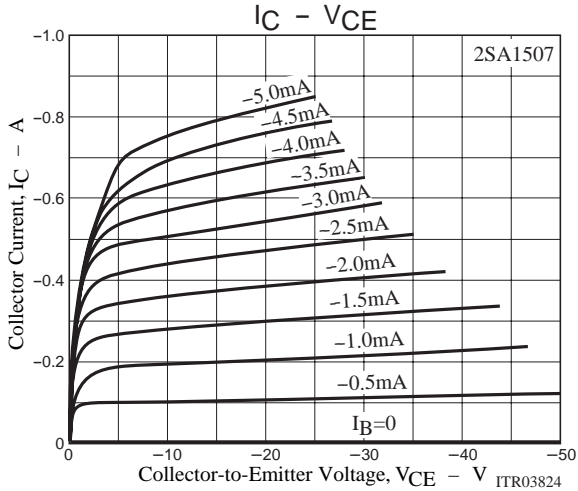
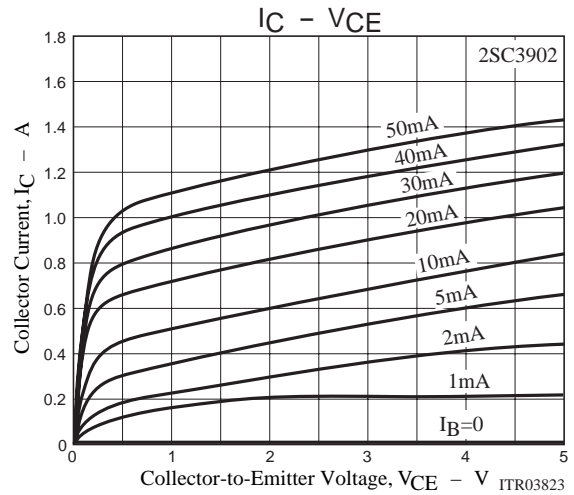
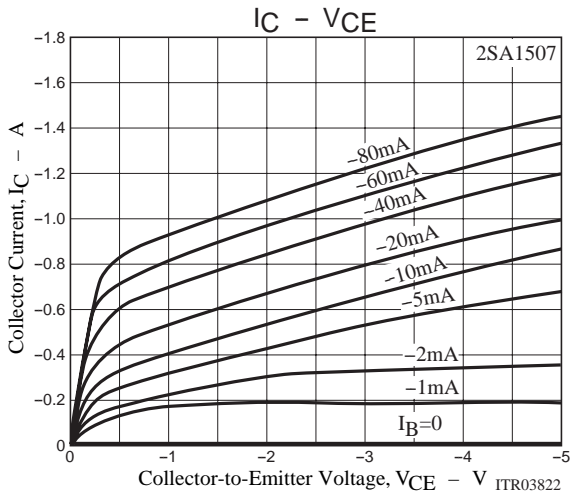
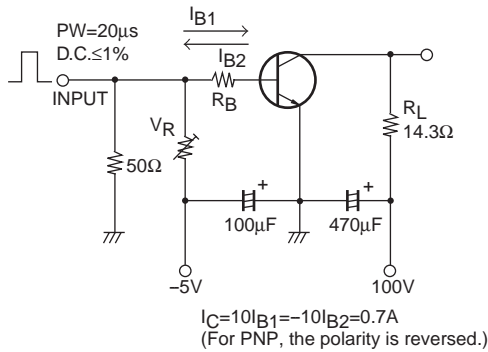
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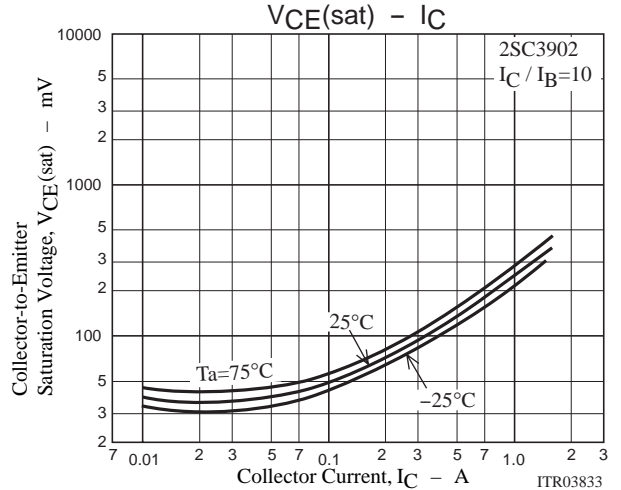
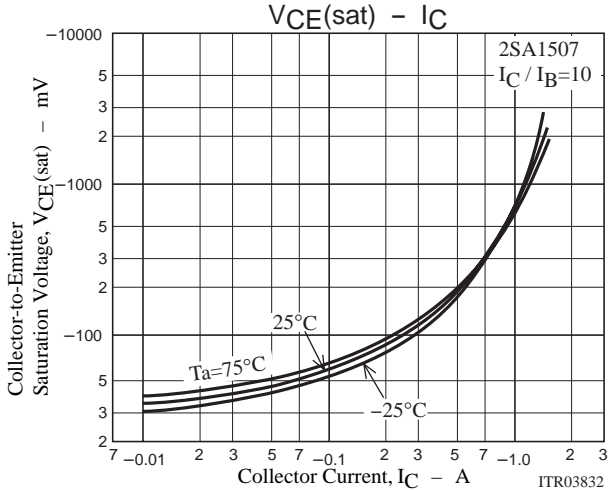
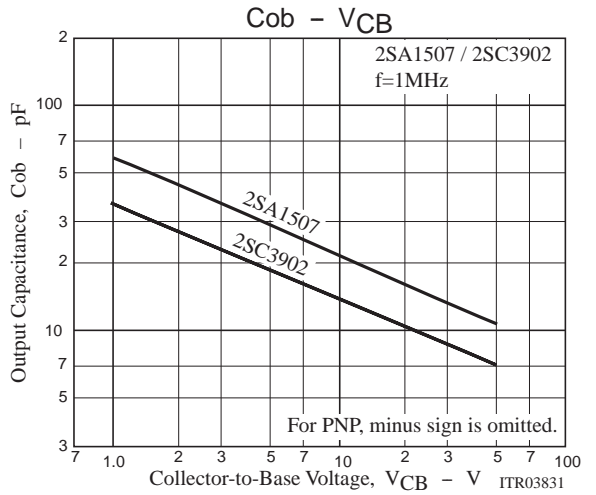
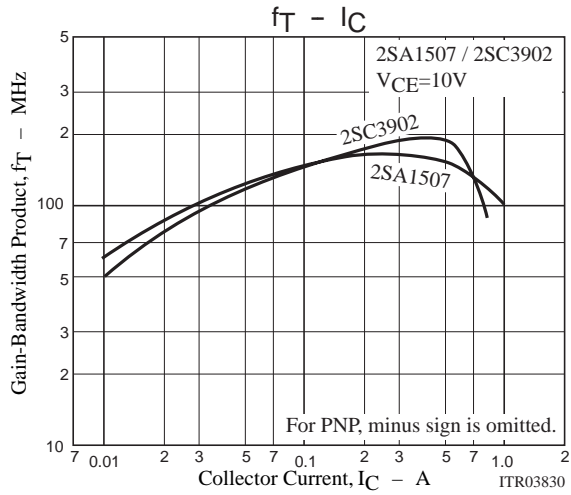
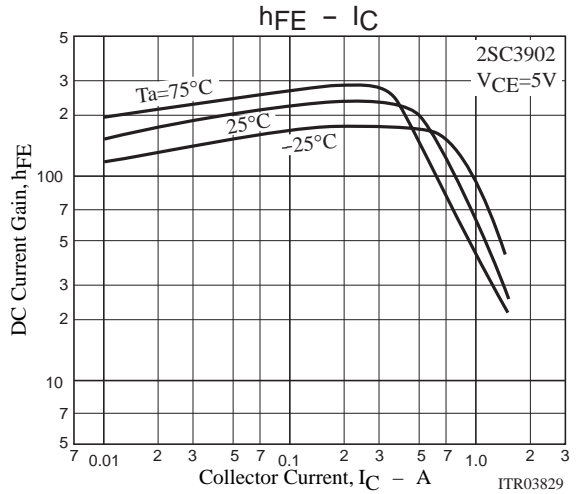
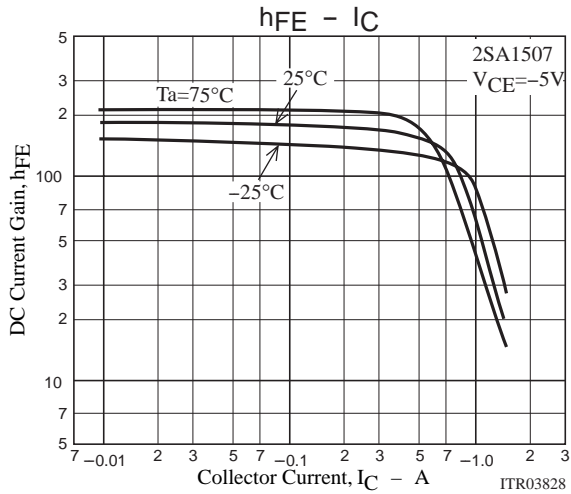
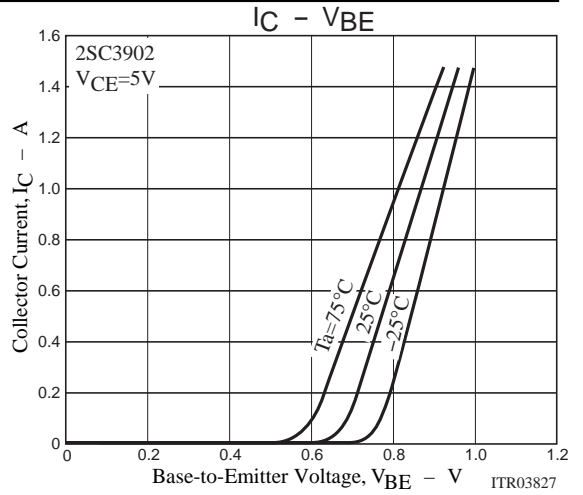
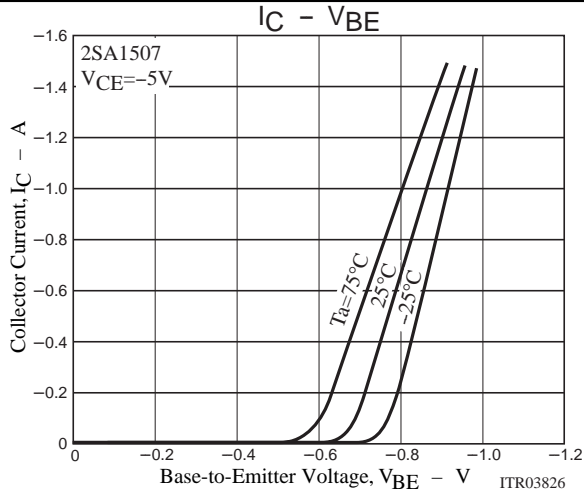
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		(22)		pF
				14		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$		(-0.2)	(-0.5)	V
Base-to-Emitter Saturation 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

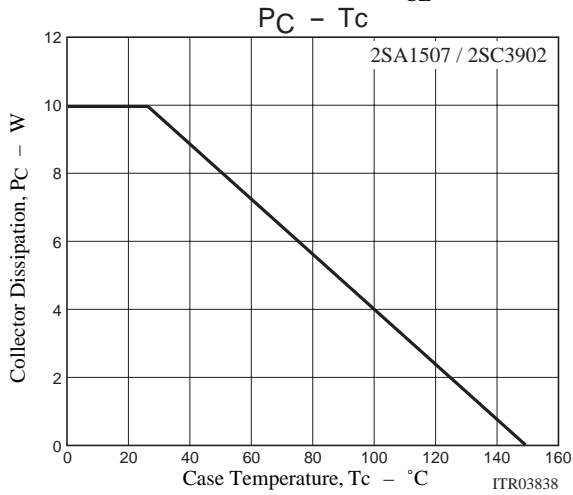
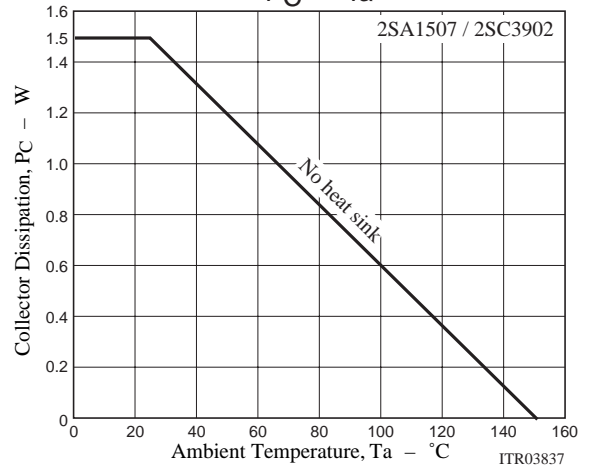
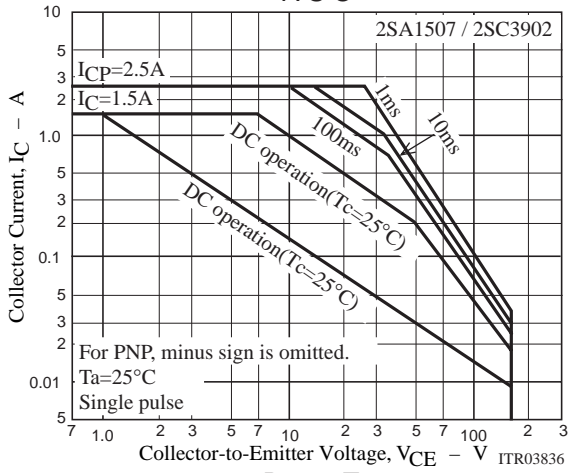
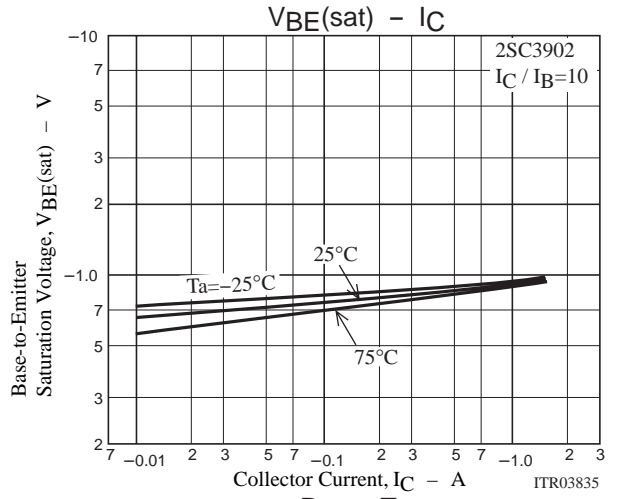
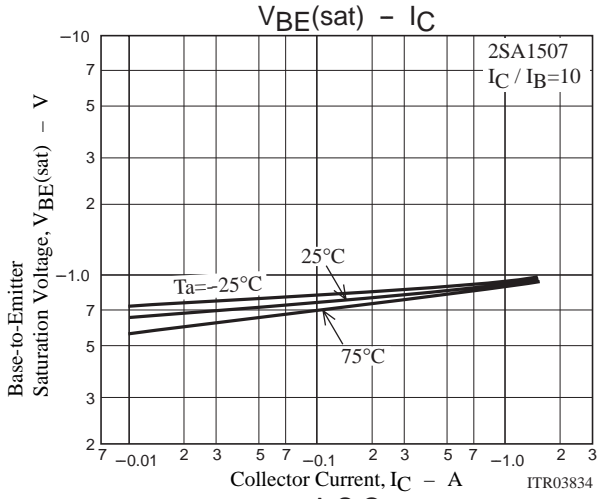
Switching Time Test Circuit



2SA1507/2SC3902



2SA1507/2SC3902



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