SANYO

No.2101B

2SA1507/2SC3902

PNP/NPN Epitaxial Planar Silicon Transistors

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

Absolute Maximum Ratings at Ta = 25°C

				unit
Collector-to-Base Voltage	V_{CBO}		(−)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
Collector Current (Pulse)	I_{CP}		(−)2.5	A
Collector Dissipation	P_C		1.5	W
		Tc = 25°C	10	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Electrical Characteristics at Ta = 25°C

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB} = (−)120V, I_E = 0			(−)1.0	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} = (−)4V, I_C = 0			(−)1.0	μA
DC Current Gain	$h_{FE}(1)$	V_{CE} = (−)5V, I_C = (−)100mA	100※		400※	
	$h_{FE}(2)$	V_{CE} = (−)5V, I_C = (−)10mA	90			
Gain-Bandwidth Product	f_T	V_{CE} = (−)10V, I_C = (−)50mA		120		MHz
Output Capacitance	Cob	V_{CB} = (−)10V, f = 1MHz		(22)		pF
				14		pF
C-E Saturation Voltage	$V_{CE(sat)}$	I_C = (−)500mA, I_B = (−)50mA		(−0.2)	(−0.5)	V
				0.13	0.45	V
B-E Saturation Voltage	$V_{BE(sat)}$	I_C = (−)500mA, I_B = (−)50mA		(−)0.85	(−)1.2	V

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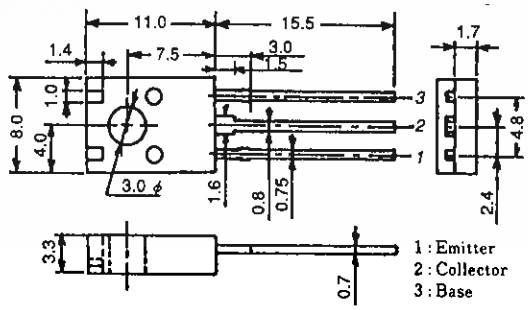
※ : The 2SA1507/2SC3902 are classified by 100mA h_{FE} as follows :

100 R 200	140 S 280	200 T 400

Package Dimensions 2042B

(unit : mm)



SANYO : TO126ML

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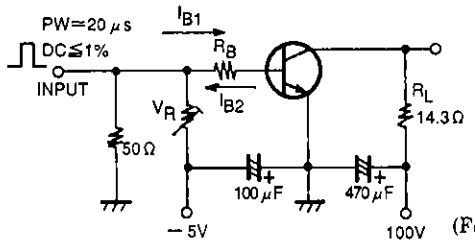
			min	typ	max	unit
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A$, $I_E=0$	(−)180			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA$, $R_{BE}=\infty$	(−)160			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A$, $I_C=0$	(−)6			V
Turn-ON Time	t_{on}	See specified Test Circuit.		0.04		μs
Storage Time	t_{stg}	//		(0.7)		μs
		//		1.2		μs
Fall Time	t_f	//		(0.04)		μs
		//		0.08		μs

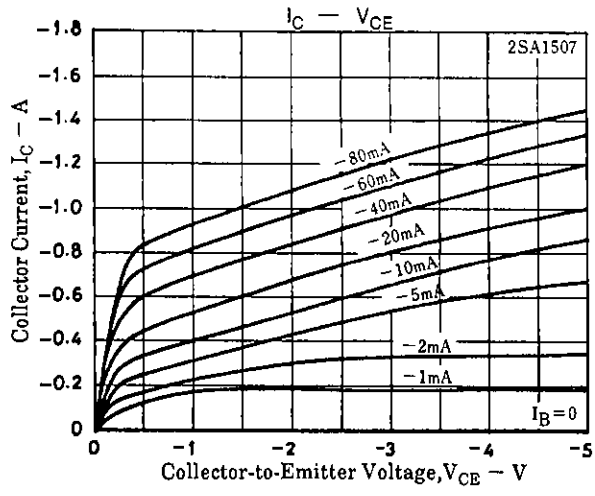
Switching Time Test Circuit

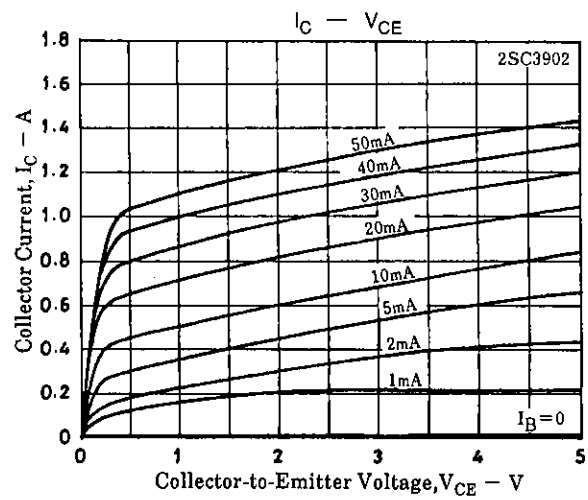


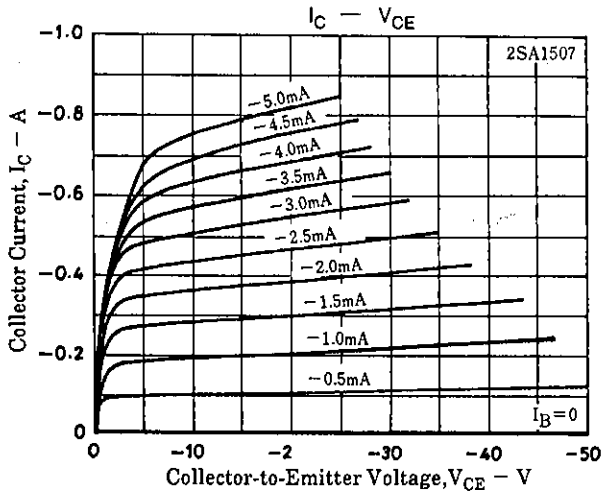
(For PNP, the polarity is reversed.)

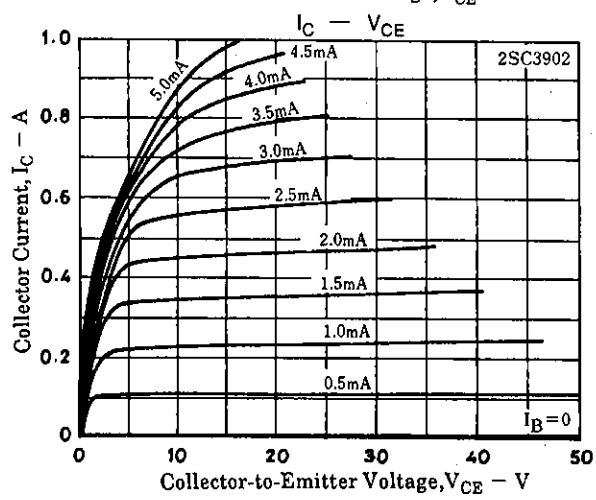
$I_C=10I_{B1}=-10I_{B2}=0.7A$

Unit (Resistance : Ω, Capacitance : F)

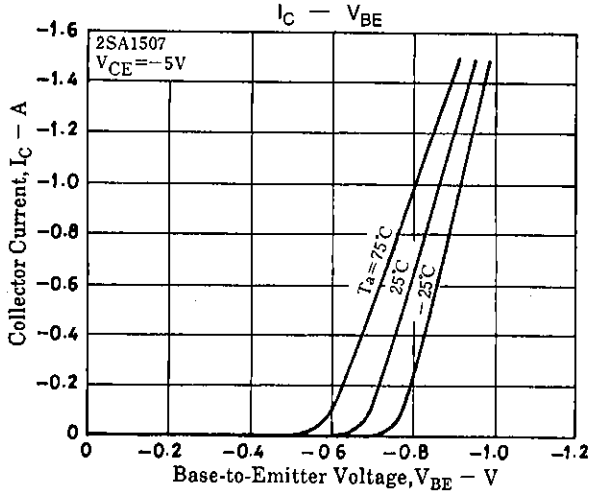




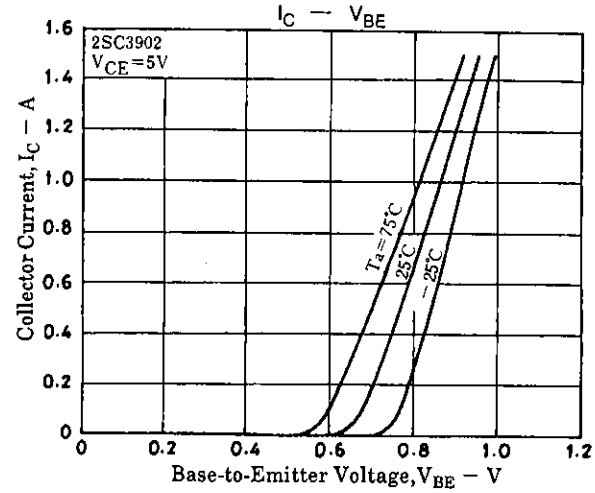




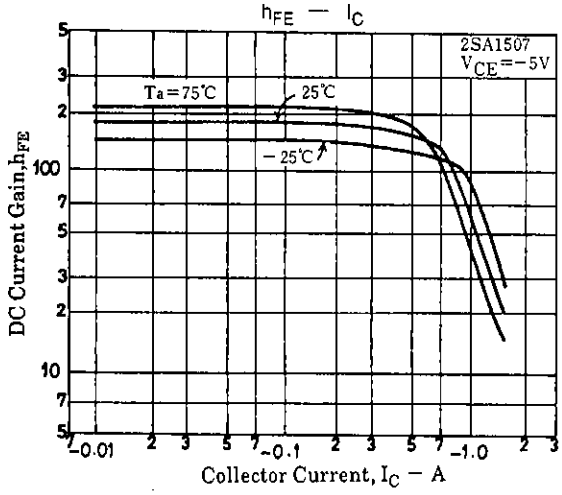
I_C — V_{BE}



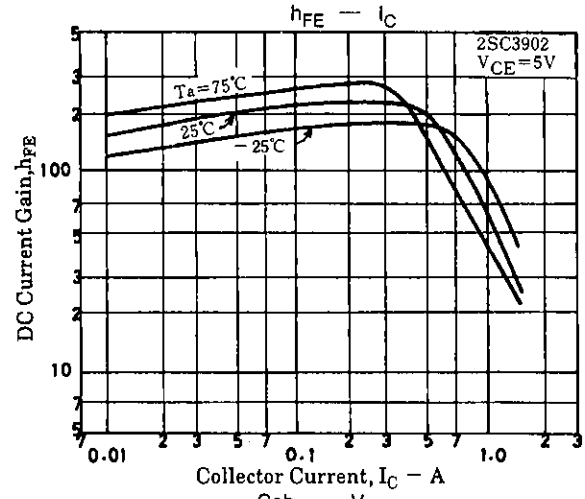
I_C — V_{BE}



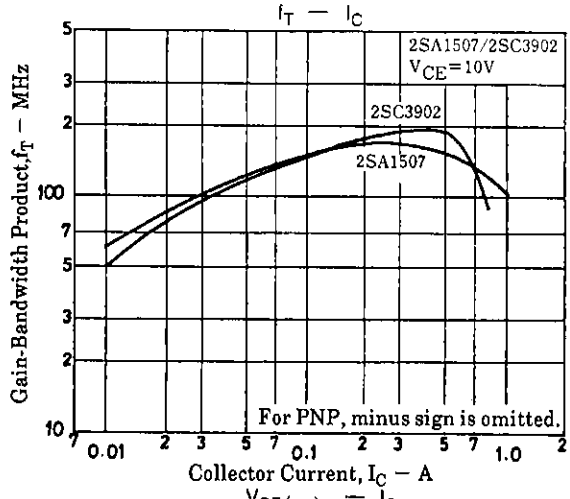
h_{FE} — I_C



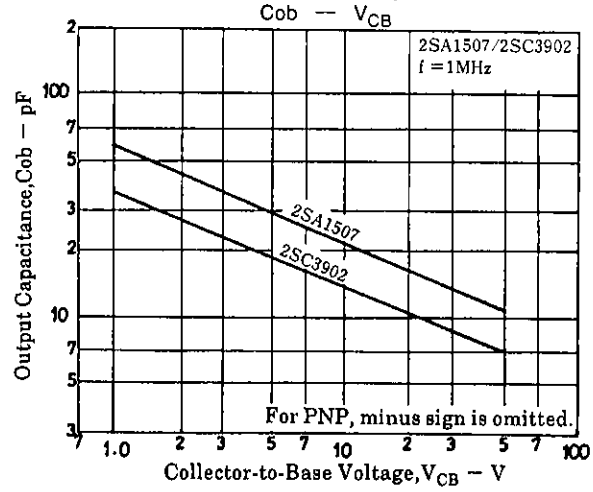
h_{FE} — I_C



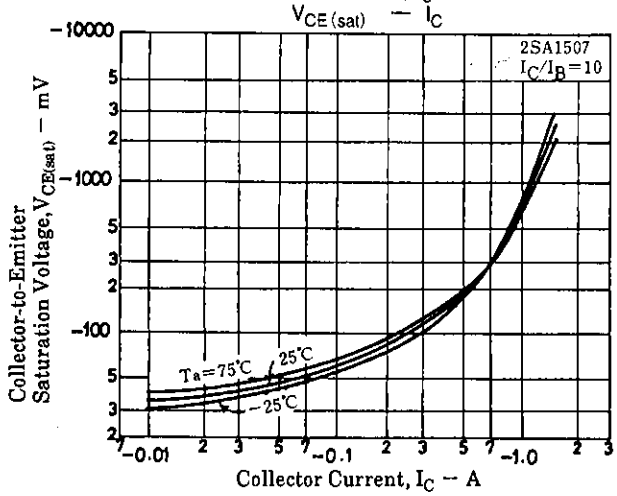
f_T — I_C



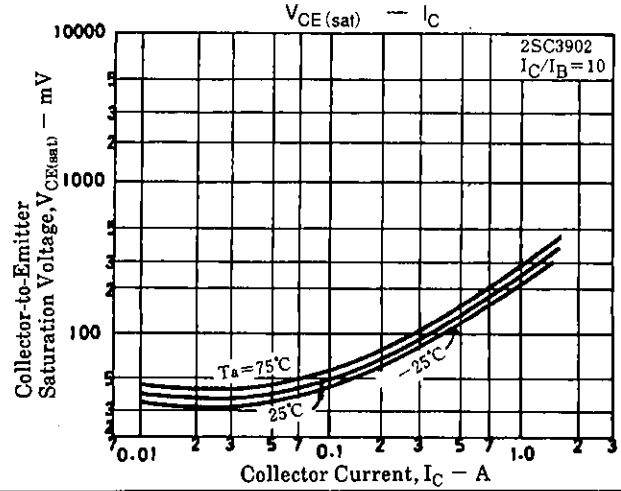
Cob — V_{CB}



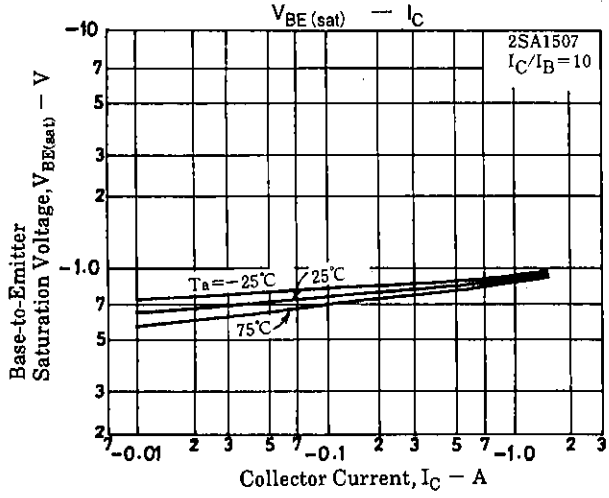
$V_{CE(sat)}$ — I_C



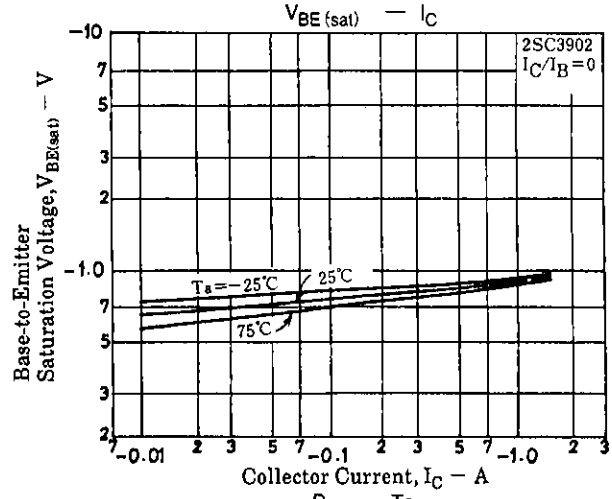
$V_{CE(sat)}$ — I_C



$V_{BE(sat)}$ — I_C



$V_{BE(sat)}$ — I_C



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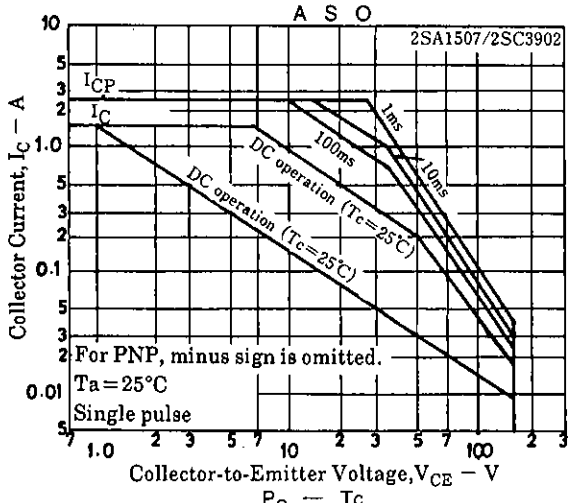
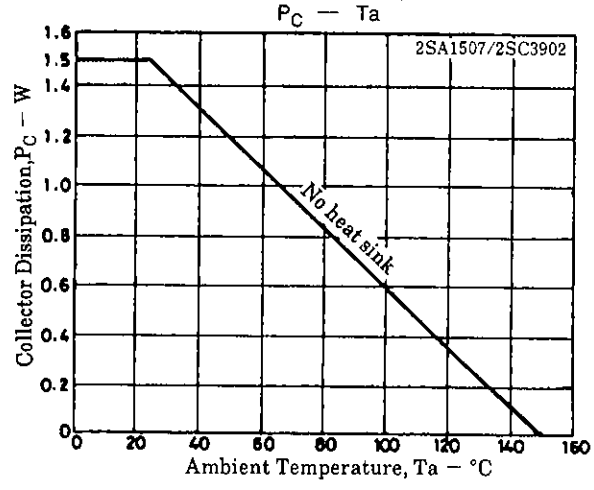
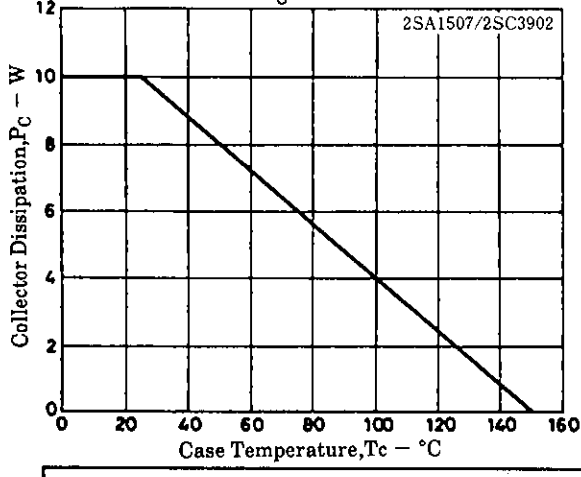


P_C — Ta



P_C — Tc



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