Ordering number:EN2101B

PNP/NPN Epitaxial Planar Silicon Transistors

2SA1507/2SC3902

160V/1.5A Switching Applications

Applications

· Color TV audio output, converters, inverters.

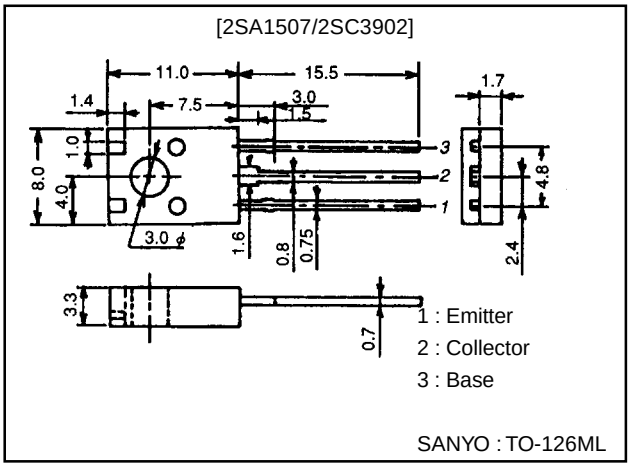
Features

· 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_{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
Peak Collector Current	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

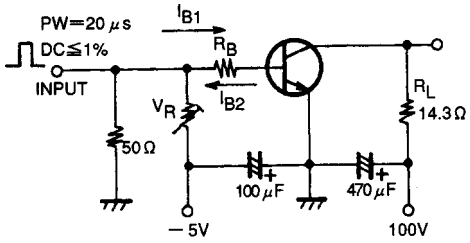
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=(–)120V, I_E=0			(–)0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)4V, I_C=0			(–)0.1	μA
DC Current Gain	$h_{FE}1$	V_{CE}=(–)5V, I_C=(–)10mA	100*		400*	
	$h_{FE}2$	V_{CE}=(–)5V, I_C=(–)10mA	90			
Gain-Bandwidth Product	f_T	V_{CE}=(–)10V, I_C=(–)50mA		120		MHz
Output Capacitance	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
				0.13	0.45	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)500mA, I_B=(–)50mA		(–)0.85	(–)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)10μA, I_E=0	(–)180			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)160			V
Emitter-to-Base Breakdown Votage	$V_{(BR)EBO}$	I_E=(–)10μA, 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 Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

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

100 R 200	140 S 280	200 T 400

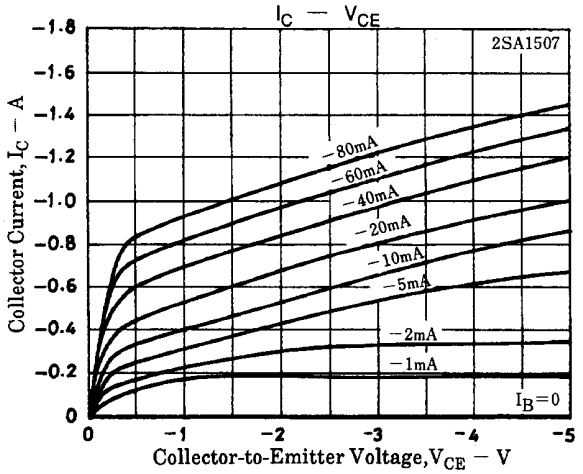
Switching Time Test Circuit

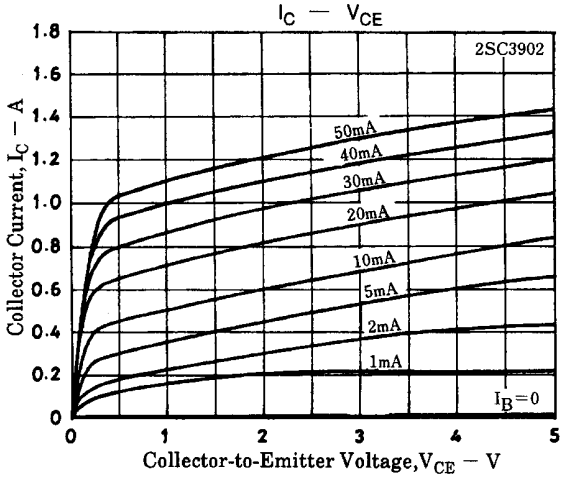


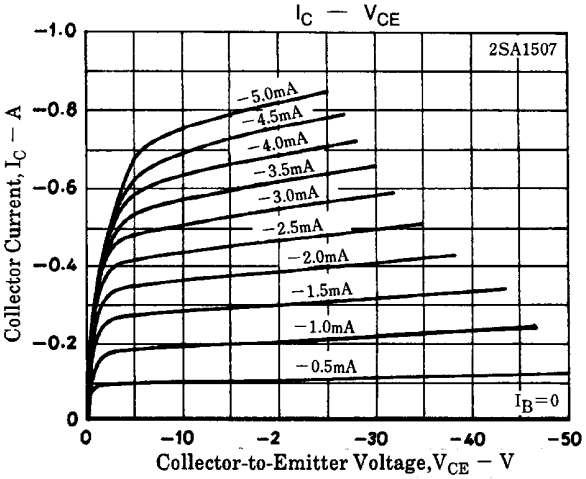
$I_C = 10I_{B1} = -10I_{B2} = 0.7A$

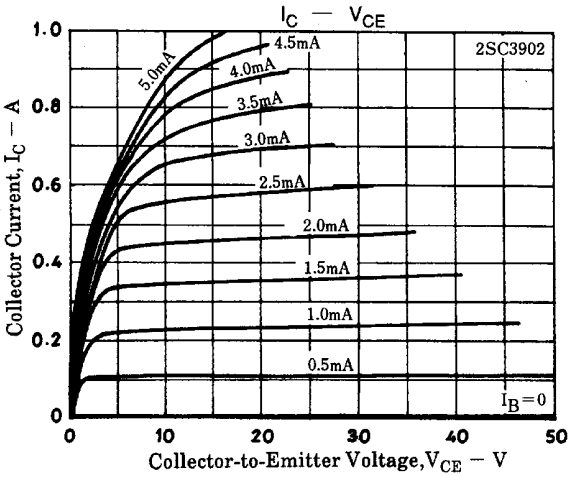
(For PNP, the polarity is reversed.)

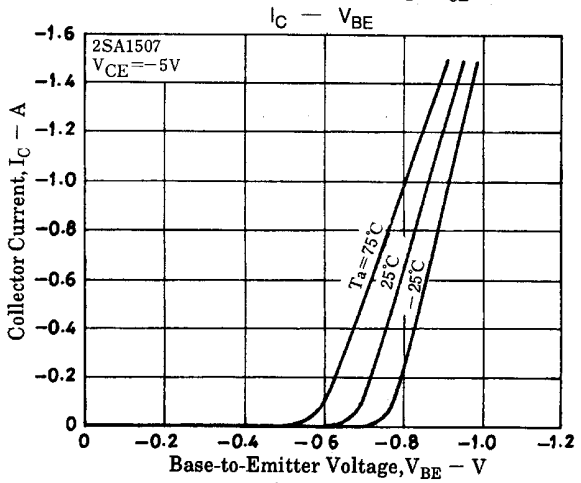
Unit (resistance :Ω, capacitance : F)

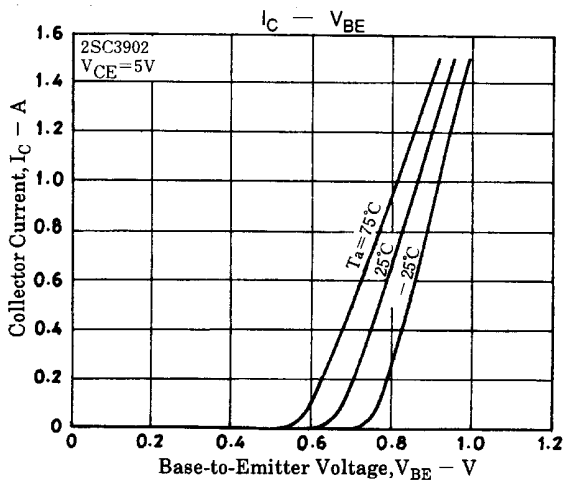




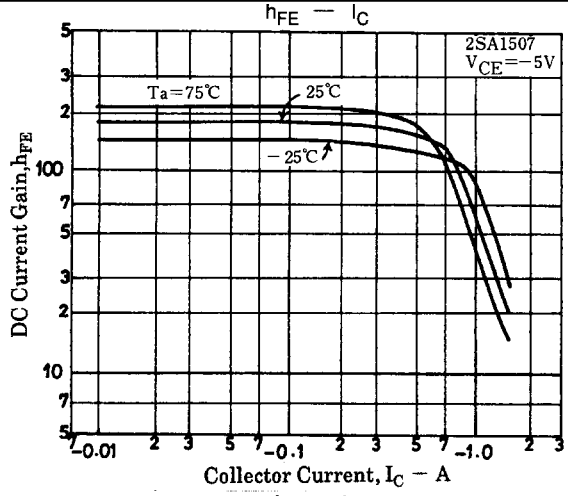




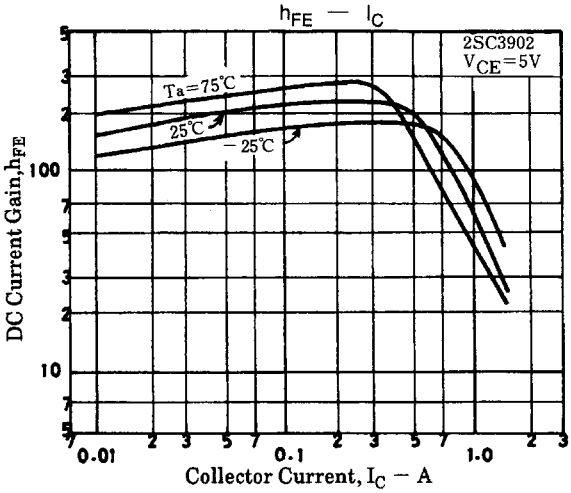




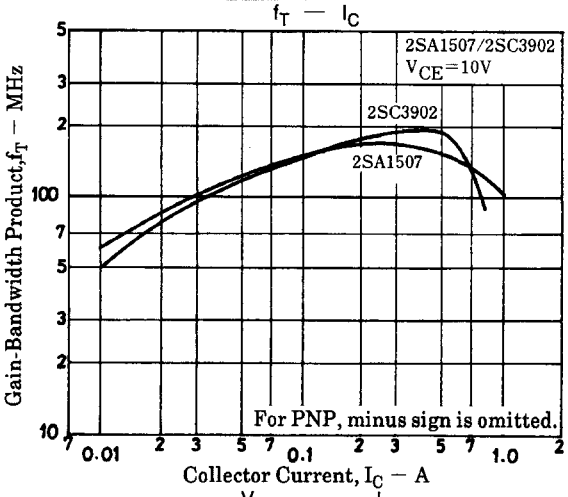
h_{FE} — I_C



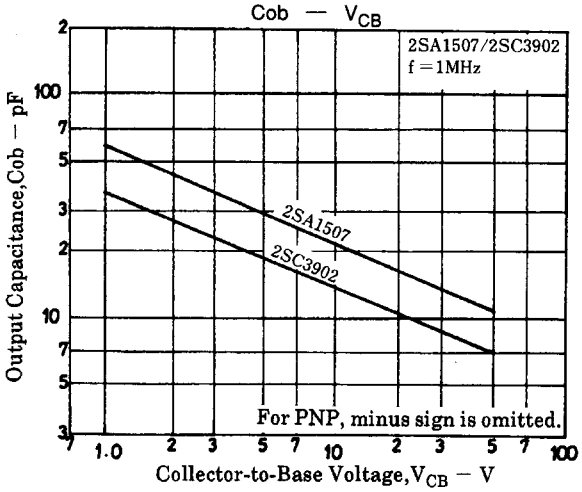
h_{FE} — I_C



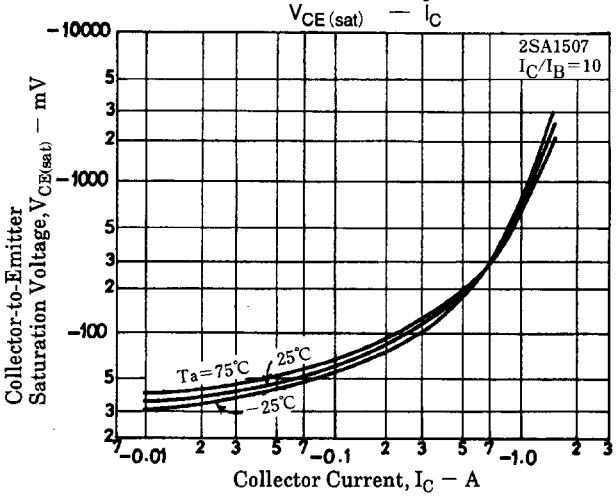
f_T — I_C



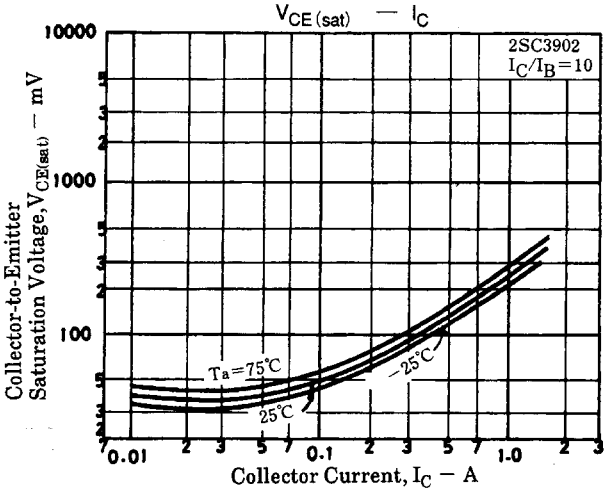
Cob — V_{CB}



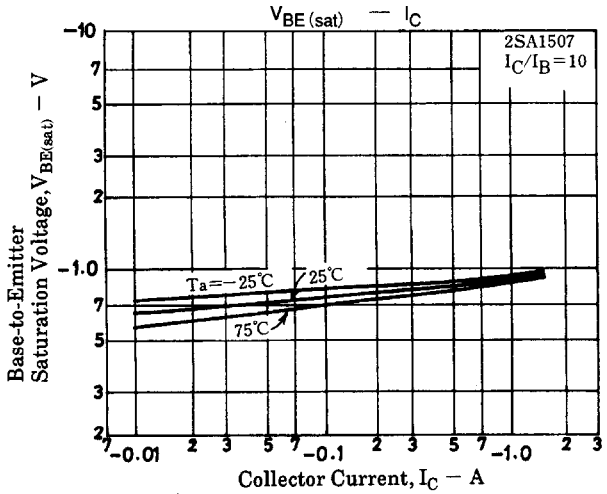
$V_{CE(sat)}$ — I_C



$V_{CE(sat)}$ — I_C



$V_{BE(sat)}$ — I_C



$V_{BE(sat)}$ — I_C