

# 2SC3507

## Silicon NPN triple diffusion planar type

For high breakdown voltage high-speed switching

### ■ Features

- High-speed switching
- High collector to base voltage  $V_{CBO}$
- Satisfactory linearity of forward current transfer ratio  $h_{FE}$
- Full-pack package which can be installed to the heat sink with one screw

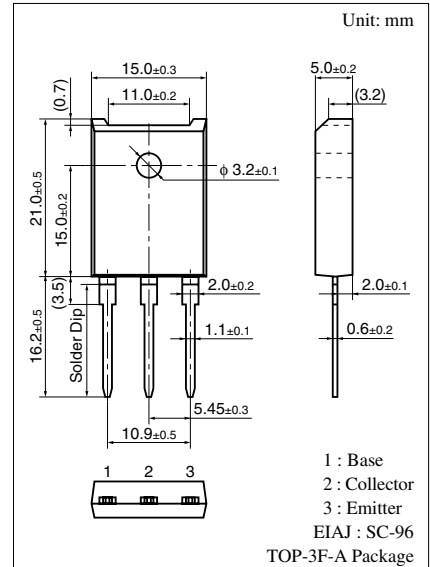
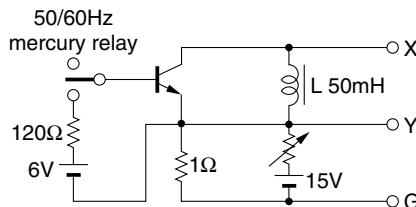
### ■ Absolute Maximum Ratings $T_C = 25^\circ C$

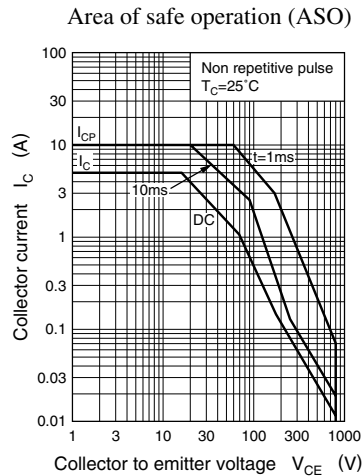
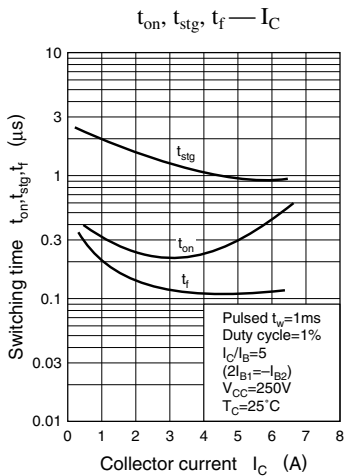
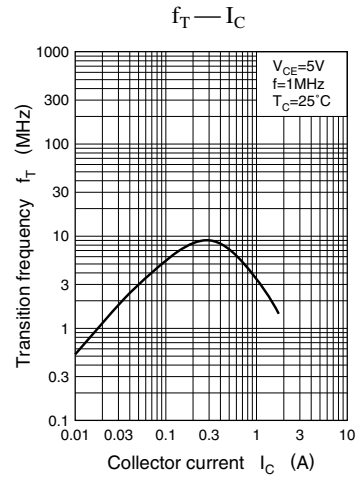
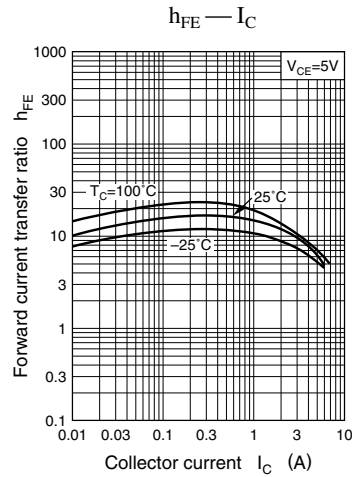
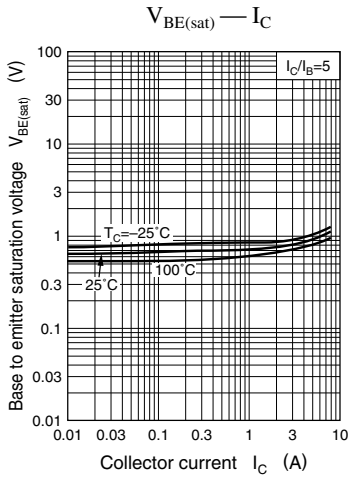
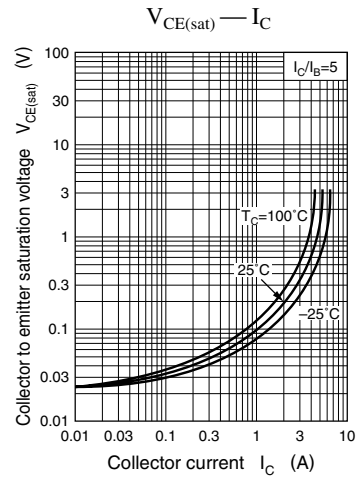
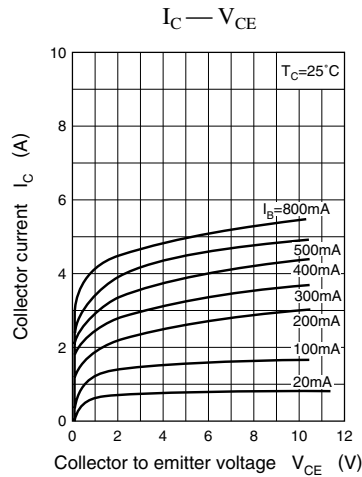
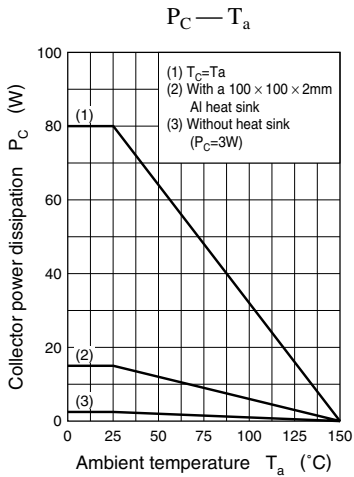
Parameter	Symbol	Rating	Unit	
Collector to base voltage	$V_{CBO}$	1 000	V	
Collector to emitter voltage	$V_{CES}$	1 000	V	
	$V_{CEO}$	800	V	
Emitter to base voltage	$V_{EBO}$	7	V	
Peak collector current	$I_{CP}$	10	A	
Collector current	$I_C$	5	A	
Base current	$I_B$	3	A	
Collector power dissipation	$P_C$	$T_C = 25^\circ C$	80	W
		$T_a = 25^\circ C$	3	
Junction temperature	$T_j$	150	$^\circ C$	
Storage temperature	$T_{stg}$	-55 to +150	$^\circ C$	

### ■ Electrical Characteristics $T_C = 25^\circ C$

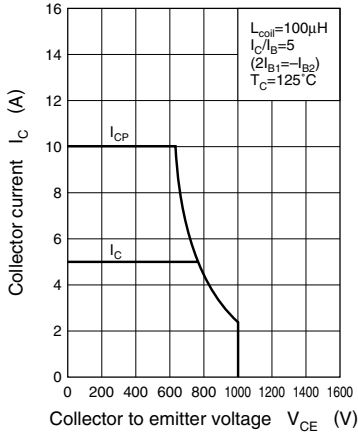
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 1\ 000\ V, I_E = 0$			50	$\mu A$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 7\ V, I_C = 0$			50	$\mu A$
Collector to emitter voltage *	$V_{CEO(sus)}$	$I_C = 0.5\ A, L = 50\ mH$	800			V
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 5\ V, I_C = 3\ A$	6			
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3\ A, I_B = 0.6\ A$			1.5	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 3\ A, I_B = 0.6\ A$			1.5	V
Transition frequency	$f_T$	$V_{CE} = 5\ V, I_C = 0.5\ A, f = 1\ MHz$		6		MHz
Turn-on time	$t_{on}$	$V_{CC} = 250\ V$			1	$\mu s$
Storage time	$t_{stg}$				2.5	$\mu s$
Fall time	$t_f$				0.5	$\mu s$

Note) \*:  $V_{CEO(sus)}$  Test circuit

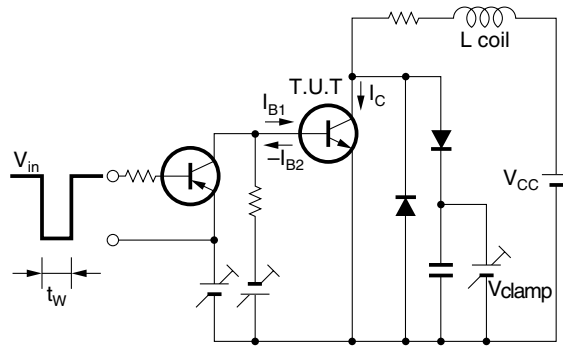




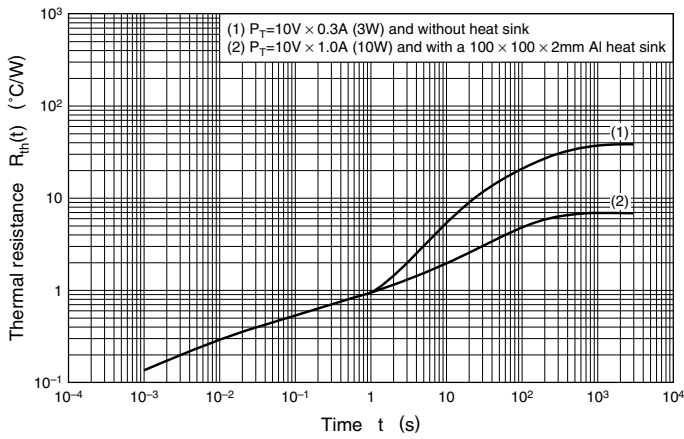
Area of safe operation, reverse bias ASO



Reverse bias ASO measuring circuit



$R_{th(t)} - t$



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