

2SC4960

Silicon NPN triple diffusion planar type

For power switching

■ Features

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

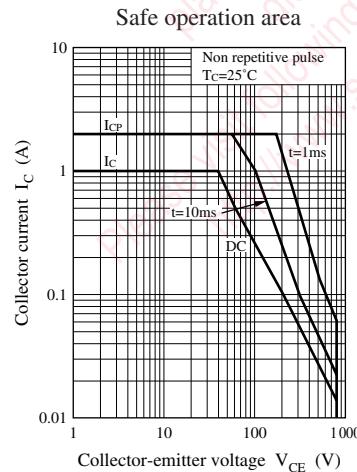
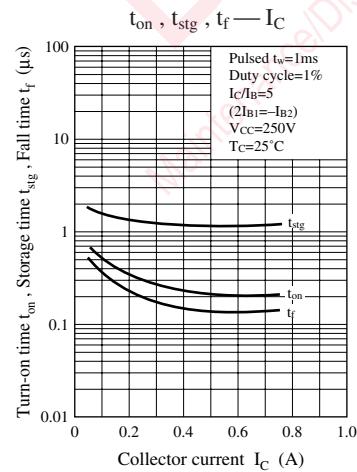
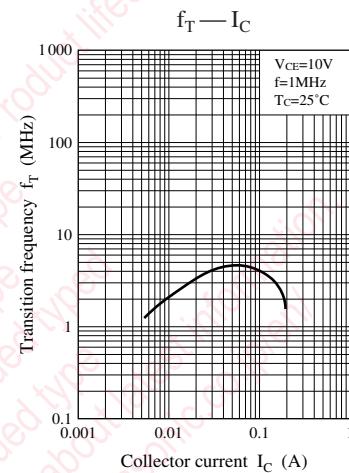
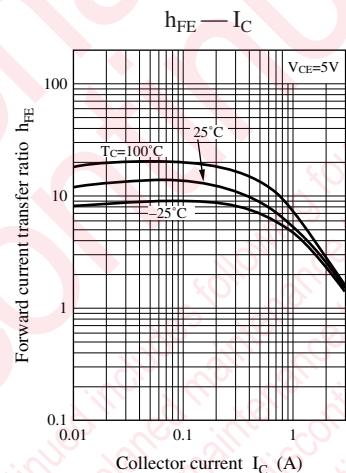
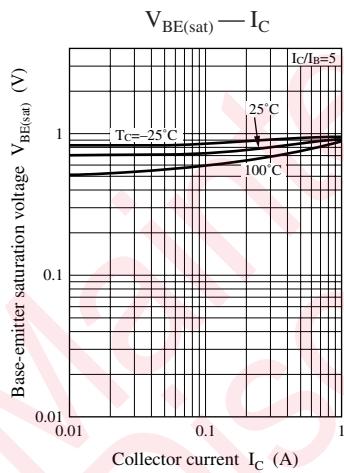
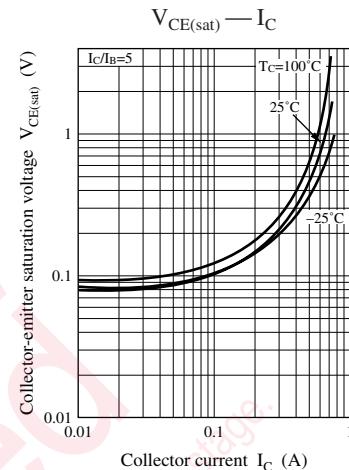
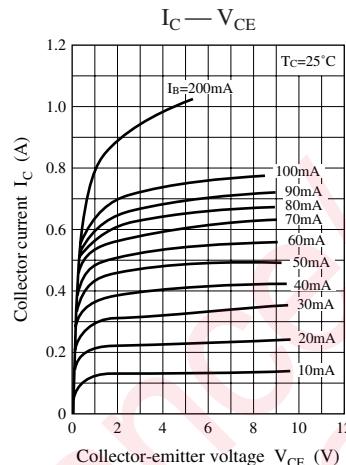
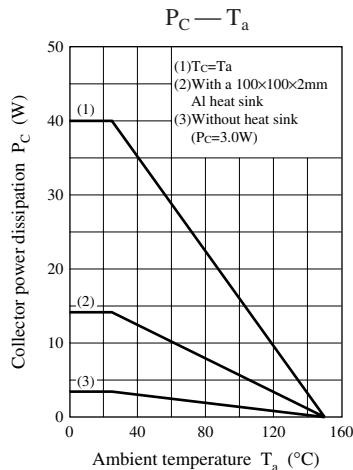
■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	900	V
Collector-emitter voltage (E-B short)	V_{CES}	900	V
Collector-emitter voltage (Base open)	V_{CEO}	800	V
Emitter-base voltage (Collector open)	V_{EBO}	7	V
Base current	I_B	0.3	A
Collector current	I_C	1	A
Peak collector current	I_{CP}	2	A
Collector power dissipation	P_C	40	W
$T_a = 25^\circ\text{C}$		3.0	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

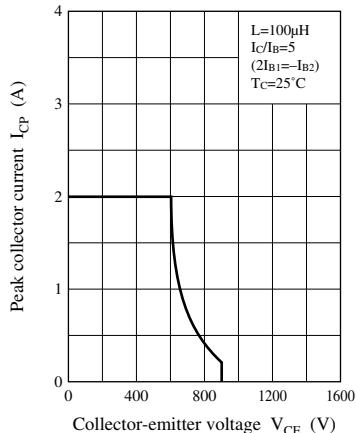
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 1 \text{ mA}, I_B = 0$	800			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 900 \text{ V}, I_E = 0$			50	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 7 \text{ V}, I_C = 0$			50	μA
Forward current transfer ratio	h_{FE1}	$V_{CE} = 5 \text{ V}, I_C = 0.05 \text{ A}$	6			—
	h_{FE2}	$V_{CE} = 5 \text{ V}, I_C = 0.5 \text{ A}$	3			—
Collector-emitter saturation voltage	$V_{CE(\text{sat})}$	$I_C = 0.2 \text{ A}, I_B = 0.04 \text{ A}$			1.5	V
Base-emitter saturation voltage	$V_{BE(\text{sat})}$	$I_C = 0.2 \text{ A}, I_B = 0.04 \text{ A}$			1.0	V
Transition frequency	f_T	$V_{CE} = 10 \text{ V}, I_C = 0.05 \text{ A}, f = 1 \text{ MHz}$		4		MHz
Turn-on time	t_{on}	$I_C = 0.2 \text{ A}$ $I_{B1} = 0.04 \text{ A}, I_{B2} = -0.08 \text{ A}$ $V_{CC} = 250 \text{ V}$			1.0	μs
Storage time	t_{stg}				3.0	μs
Fall time	t_f				1.0	μs

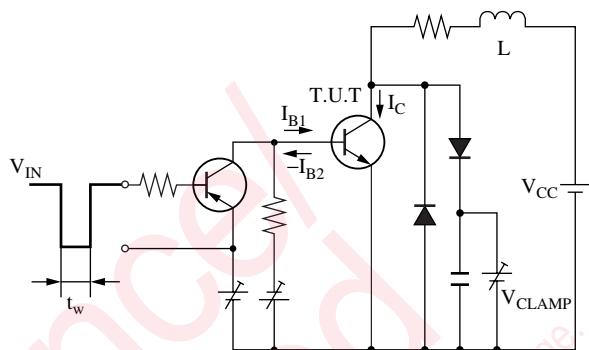
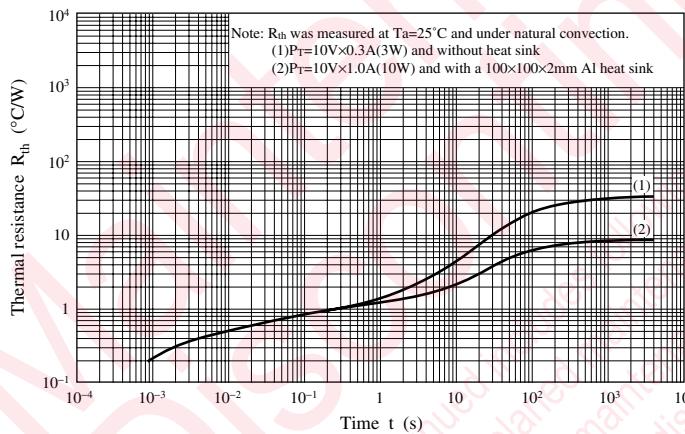
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.



Safe operation area (Reverse bias)



Safe operation area (Reverse bias) measuring circuit

 $R_{th} - t$ 

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