

2SC3824, 2SC3824A

Silicon NPN triple diffusion planar type

For high breakdown voltage high-speed switching

■ Features

- High-speed switching
- High collector-base voltage (Emitter open) V_{CBO}
- I type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment

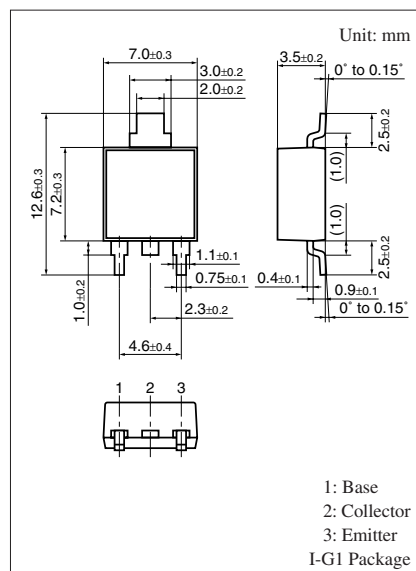
■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

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)	2SC3824	V _{CEO}	800	V
	2SC3824A		900	
Emitter-base voltage (Collector open)		V _{EBO}	7	V
Collector current		I _C	1	A
Peak collector current		I _{CP}	2	A
Collector power		P _C	15	W
dissipation	T _a = 25°C		1.3	
Junction temperature		T _J	150	°C
Storage temperature		T _{stg}	−55 to +150	°C

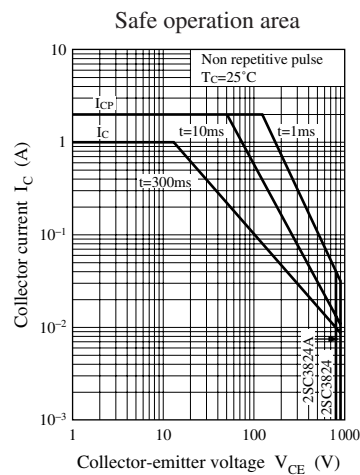
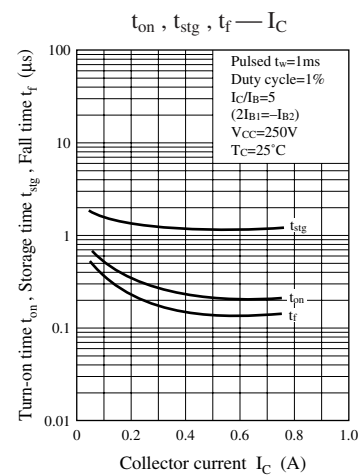
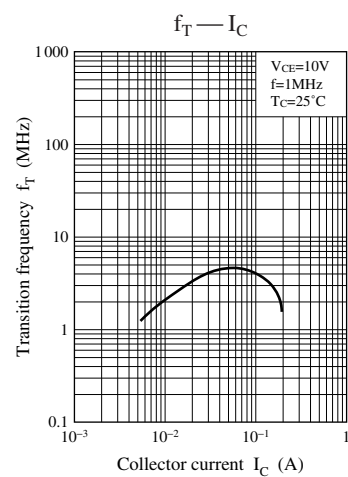
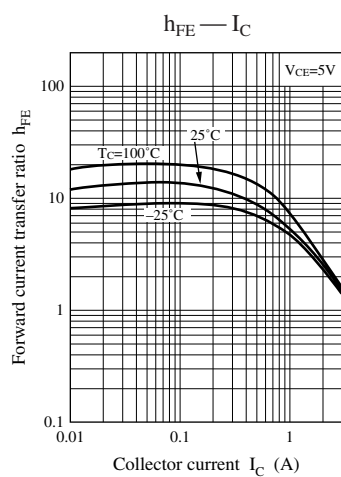
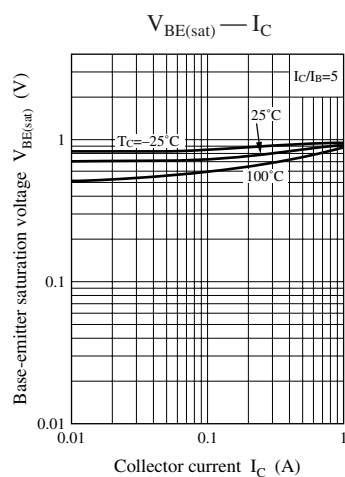
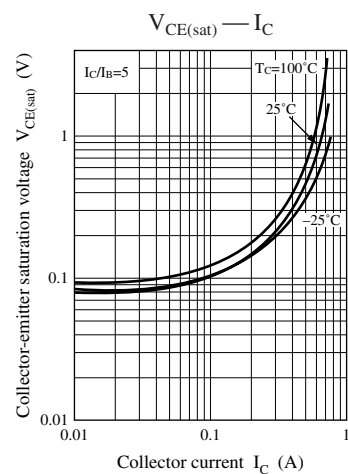
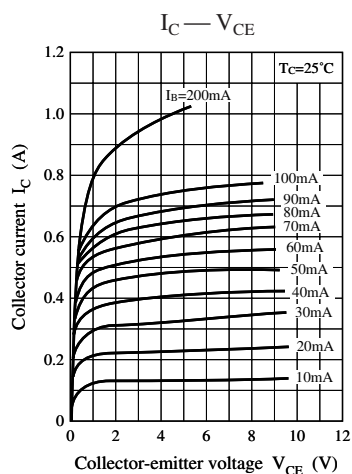
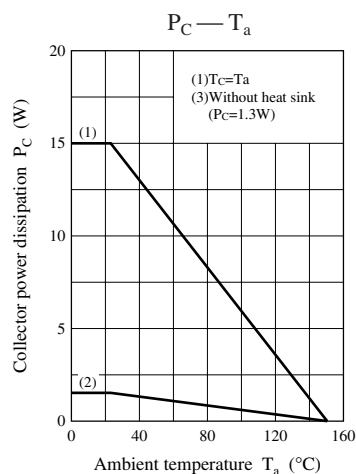
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 1\text{ mA}, I_B = 0$	800			V
			900			
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	$V_{CE(sat)}$	$I_C = 0.2\text{ A}, I_B = 0.04\text{ A}$			1.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 0.2\text{ A}, I_B = 0.04\text{ A}$			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}	$I_C = 0.2\text{ A}$			1.0	μs
Storage time	t_{stg}	$I_{B1} = 0.04\text{ A}, I_{B2} = -0.08\text{ A}$			3.0	μs
Fall time	t_f	$V_{CC} = 250\text{ V}$			1.0	μs

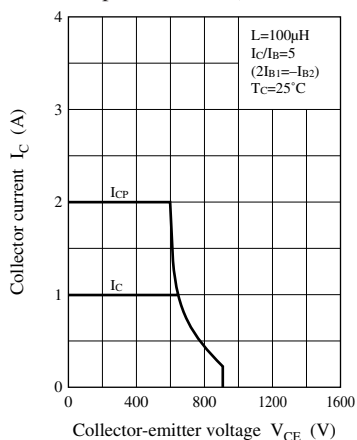
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.



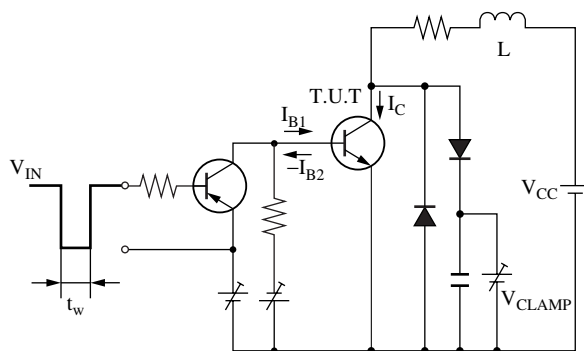
Note) Self-supported type package is also prepared.



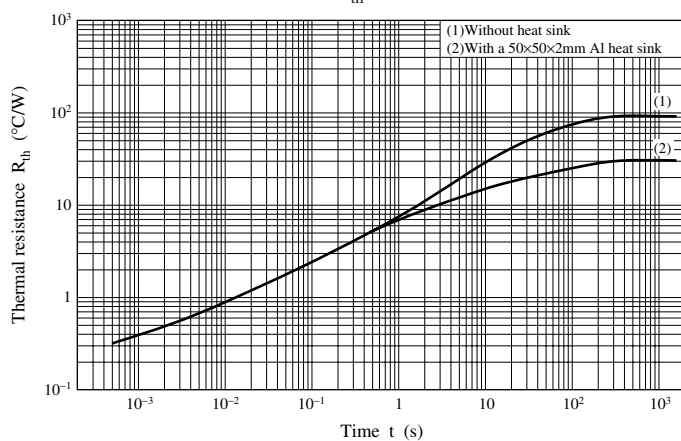
Safe operation area (Reverse bias)



Safe operation area (Reverse bias) measurement circuit



$R_{th} - t$



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