

# 2SC5909

## Silicon NPN triple diffusion mesa type

For horizontal deflection output

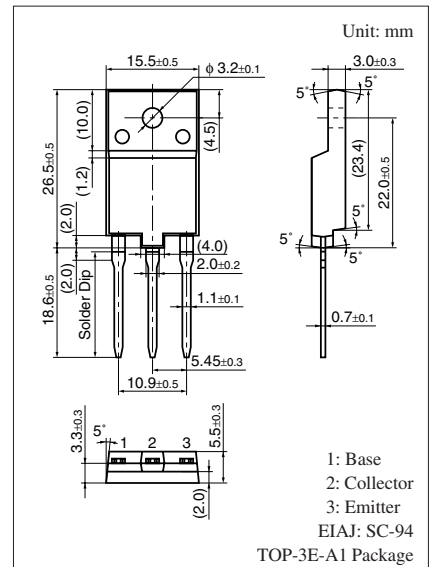
### ■ Features

- High breakdown voltage:  $V_{CBO} \geq 1\,500\text{ V}$
- High-speed switching:  $t_f < 200\text{ ns}$
- Wide safe operation area

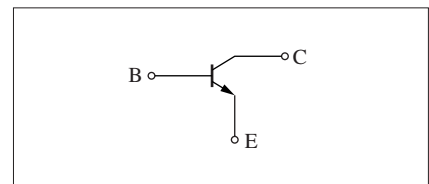
### ■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	1 500	V
Collector-emitter voltage (E-B short)	$V_{CES}$	1 500	V
Collector-emitter voltage (Base open)	$V_{CEO}$	600	V
Emitter-base voltage (Collector open)	$V_{EBO}$	7	V
Base current	$I_B$	5	A
Collector current	$I_C$	15	A
Peak collector current *	$I_{CP}$	25	A
Collector power dissipation	$P_C$	50	W
		$T_a = 25^\circ\text{C}$	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

Note) \*: Non-repetitive peak collector current



### Internal Connection

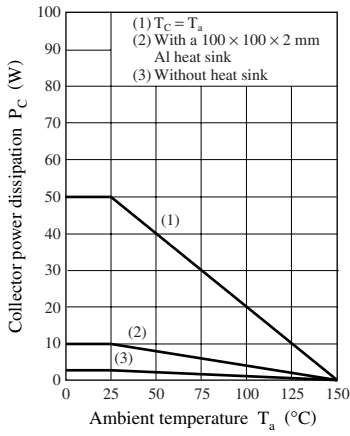


### ■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

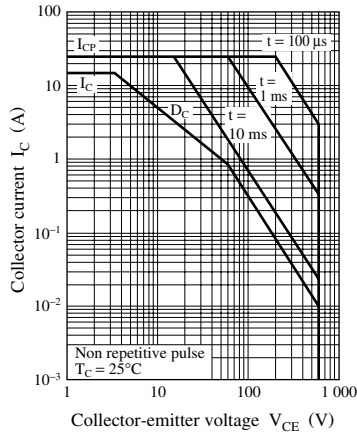
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 1\,000\text{ V}, I_E = 0$			50	$\mu\text{A}$
		$V_{CB} = 1\,500\text{ V}, I_E = 0$			1	mA
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = 7\text{ V}, I_C = 0$			50	$\mu\text{A}$
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 5\text{ V}, I_C = 7.5\text{ A}$	5		10	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 7.5\text{ A}, I_B = 1.88\text{ A}$			2.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 7.5\text{ A}, I_B = 1.88\text{ A}$			1.5	V
Transition frequency	$f_T$	$V_{CE} = 10\text{ V}, I_C = 0.1\text{ A}, f = 0.5\text{ MHz}$		3		MHz
Storage time	$t_{stg}$	$I_C = 7.5\text{ A},$ Resistance loaded			2.7	$\mu\text{s}$
Fall time	$t_f$	$I_{B1} = 1.88\text{ A}, I_{B2} = -3.75\text{ A}$			0.2	$\mu\text{s}$

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

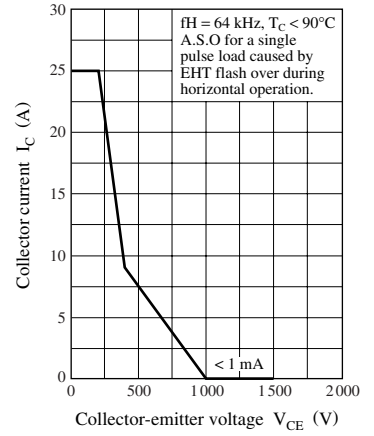
$P_C - T_a$



Safe operation area



Safe operation area (Horizontal operation)



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