

# 2SD1775A

## Silicon NPN triple diffusion planar type

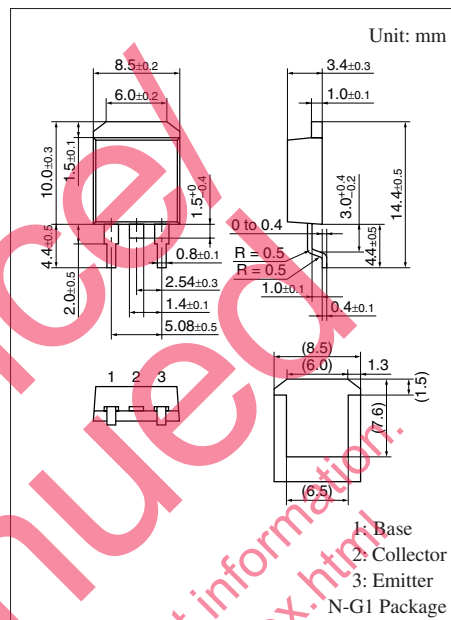
For high-speed switching and high current amplification ratio

### ■ Features

- High forward current transfer ratio  $h_{FE}$
- Satisfactory linearity of forward current transfer ratio  $h_{FE}$
- N 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)	$V_{CBO}$	100	V
Collector-emitter voltage (Base open)	$V_{CEO}$	80	V
Emitter-base voltage (Collector open)	$V_{EBO}$	6	V
Collector current	$I_C$	2	A
Peak collector current	$I_{CP}$	4	A
Base current	$I_B$	0.5	A
Collector power dissipation	$P_C$	25	W
	$T_a = 25^\circ\text{C}$	1.3	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$



Note) Self-supported type package is also prepared.

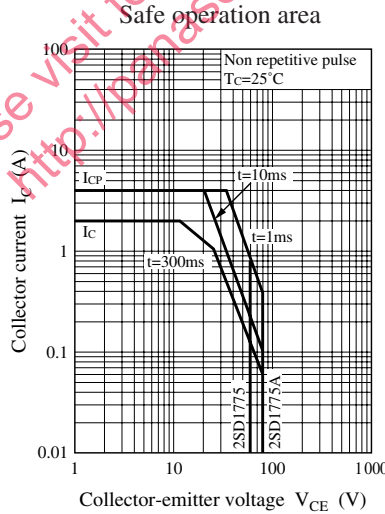
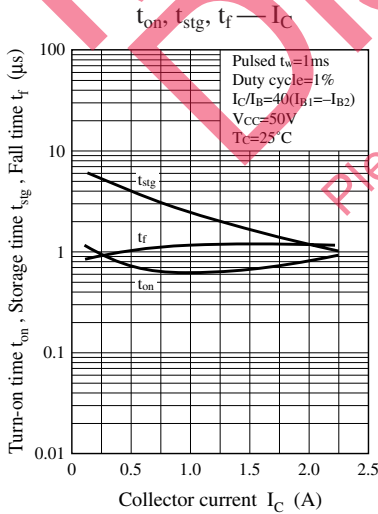
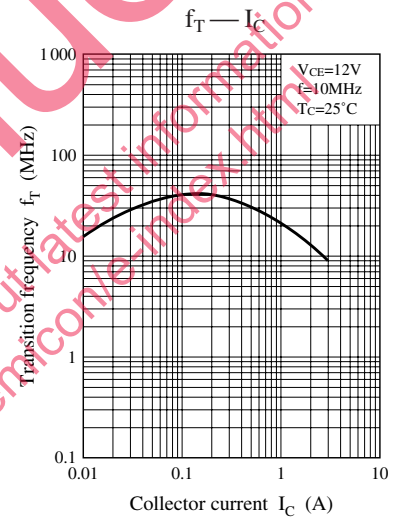
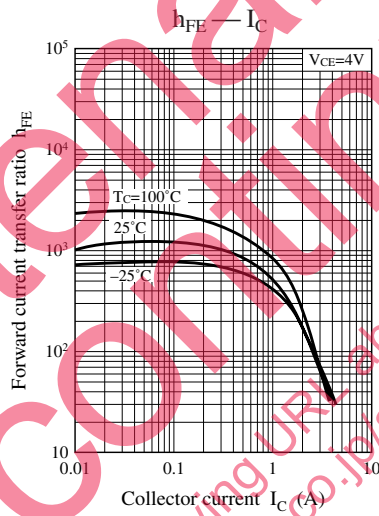
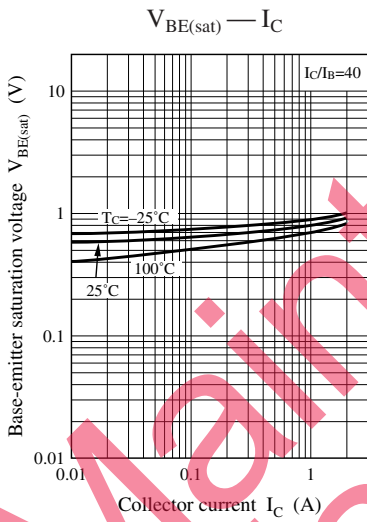
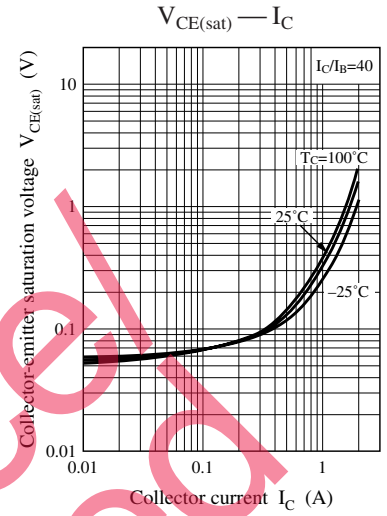
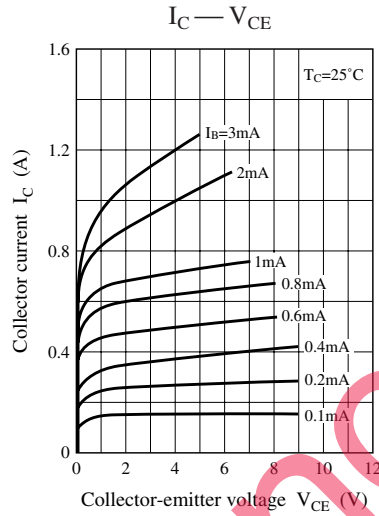
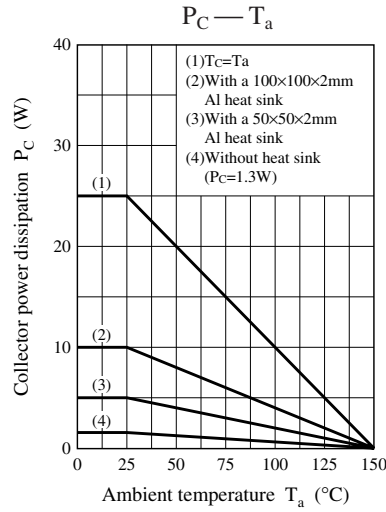
### ■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

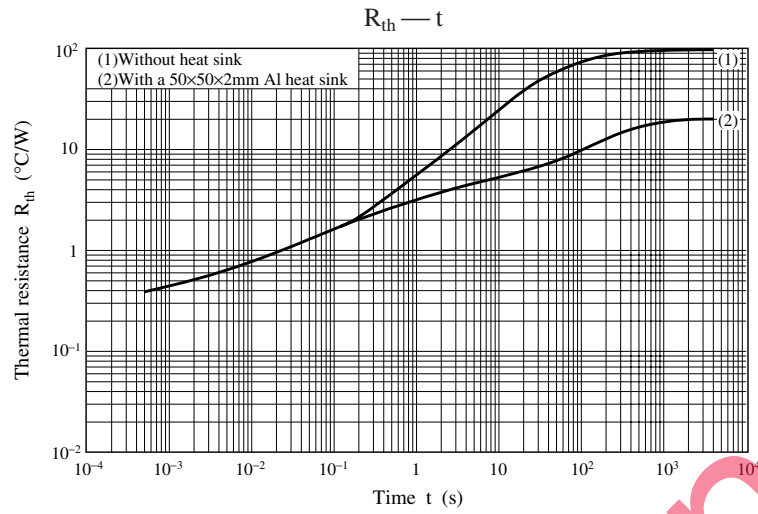
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = 25\text{ mA}, I_B = 0$	80			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 100\text{ V}, I_E = 0$			100	$\mu\text{A}$
Collector-emitter cutoff current (Base open)	$I_{CEO}$	$V_{CE} = 40\text{ V}, I_B = 0$			100	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = 6\text{ V}, I_C = 0$			100	$\mu\text{A}$
Forward current transfer ratio*	$h_{FE}$	$V_{CE} = 4\text{ V}, I_C = 300\text{ mA}$	500		1500	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1\text{ A}, I_B = 25\text{ mA}$			1.0	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 1\text{ A}, I_B = 25\text{ mA}$			1.2	V
Transition frequency	$f_T$	$V_{CE} = 12\text{ V}, I_C = 200\text{ mA}, f = 10\text{ MHz}$		40		MHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$		30		pF
Turn-on time	$t_{on}$	$I_C = 1\text{ A}$		0.6		$\mu\text{s}$
Storage time	$t_{stg}$	$I_{B1} = 25\text{ mA}, I_{B2} = -25\text{ mA}$		2.5		$\mu\text{s}$
Fall time	$t_f$	$V_{CC} = 50\text{ V}$		1.0		$\mu\text{s}$

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*: Rank classification

Rank	R	Q
$h_{FE}$	500 to 1000	800 to 1500





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