

2SD1776A

Silicon NPN triple diffusion planar type

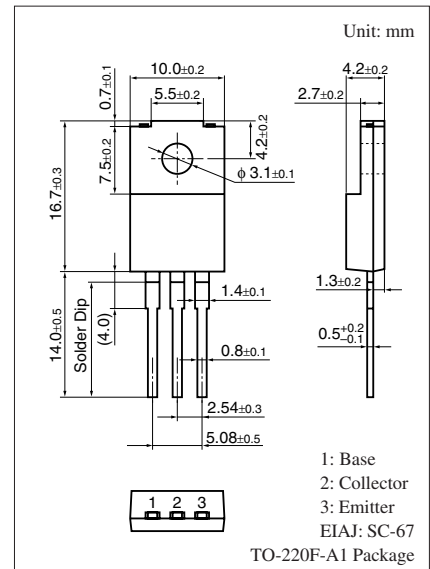
For power amplification with high forward current transfer ratio

■ Features

- High forward current transfer ratio h_{FE}
- 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 $T_C = 25^\circ\text{C}$

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
	$T_a = 25^\circ\text{C}$	2.0	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$



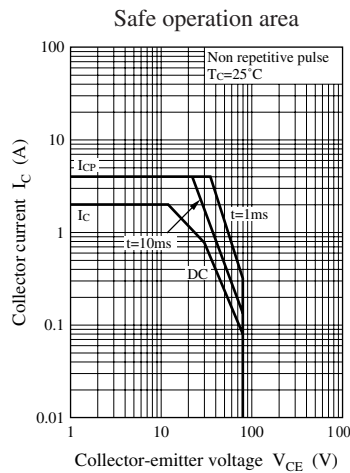
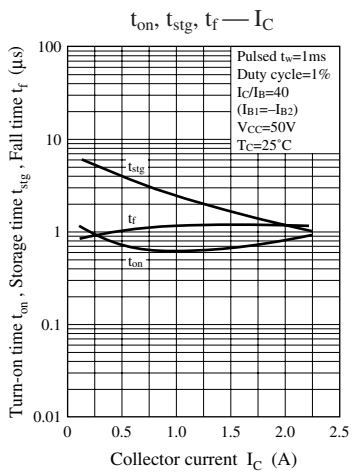
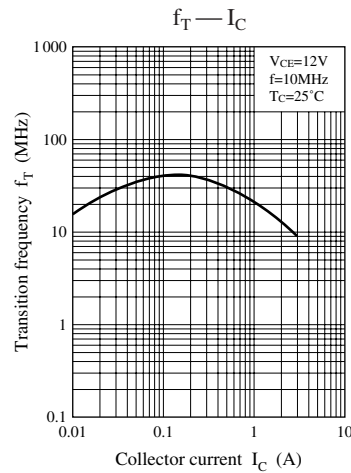
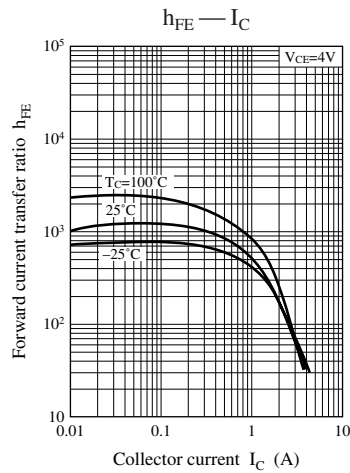
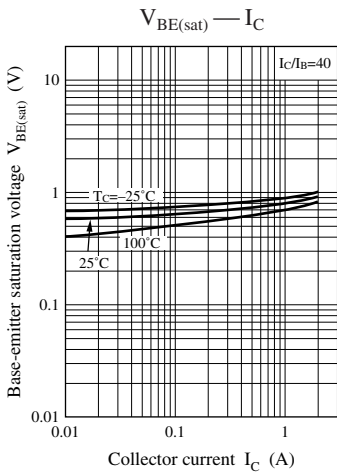
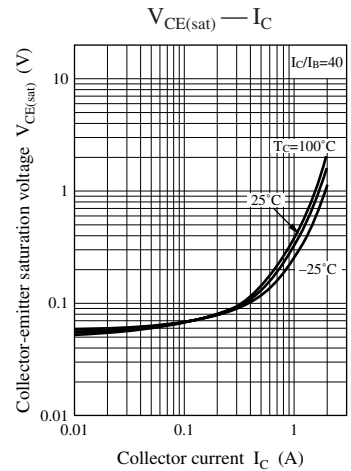
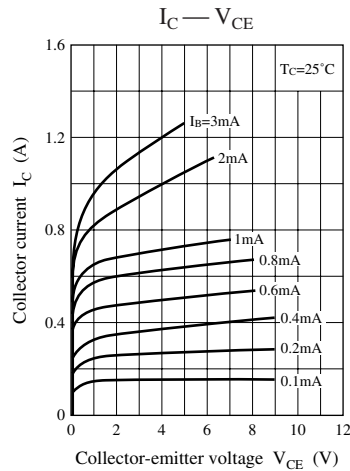
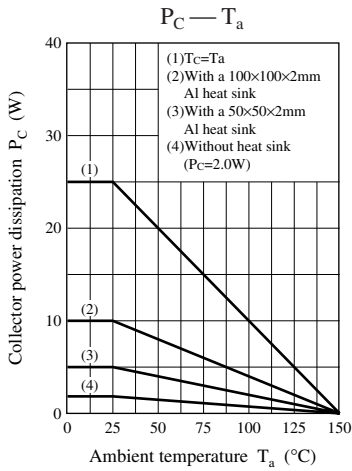
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

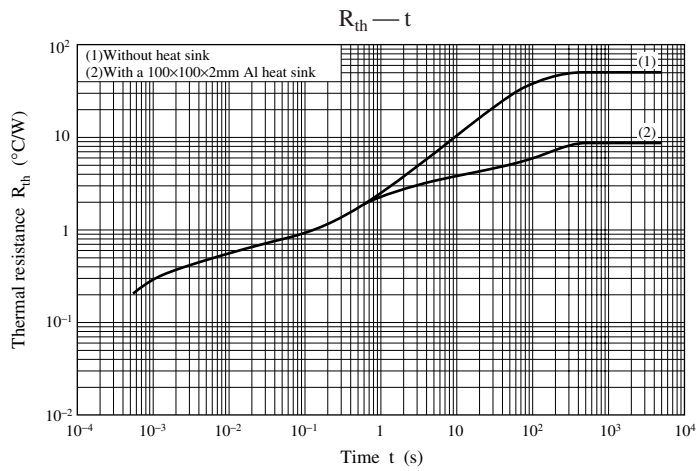
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 25\text{ mA}, I_B = 0$	80			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 100\text{ V}, I_E = 0$			100	μA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = 40\text{ V}, I_B = 0$			100	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 6\text{ V}, I_C = 0$			100	μA
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}	$I_C = 1\text{ A}, I_{B1} = 25\text{ mA}, I_{B2} = -25\text{ mA}, V_{CC} = 50\text{ V}$		0.6		μs
Storage time	t_{stg}			2.5		μs
Fall time	t_f			1.0		μs

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

2. *: Rank classification

Rank	Q	P
h_{FE}	500 to 1000	800 to 1500





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