

2SD1773

Silicon NPN triple diffusion planar type Darlington

For midium speed switching
Complementary to 2SB1193

Features

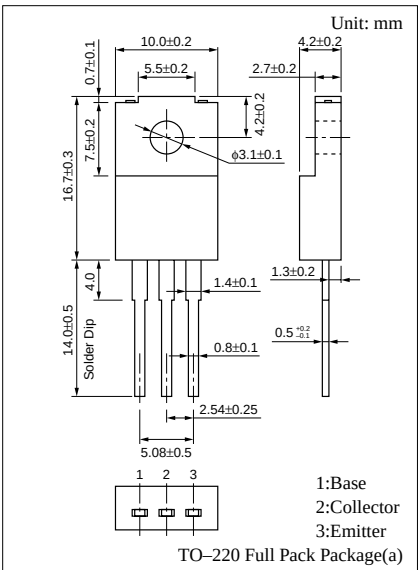
- High foward current transfer ratio h_{FE}
- High-speed switching
- Full-pack package which can be installed to the heat sink with one screw

Absolute Maximum Ratings ($T_C=25^{\circ}C$)

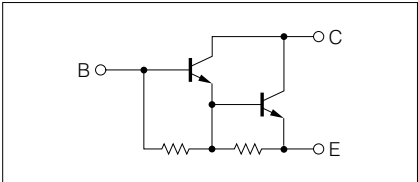
Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	120	V
Collector to emitter voltage	V_{CEO}	120	V
Emitter to base voltage	V_{EBO}	7	V
Peak collector current	I_{CP}	12	A
Collector current	I_C	8	A
Collector power dissipation	P_C	50 2	W
Junction temperature	T_j	150	$^{\circ}C$
Storage temperature	T_{stg}	-55 to +150	$^{\circ}C$

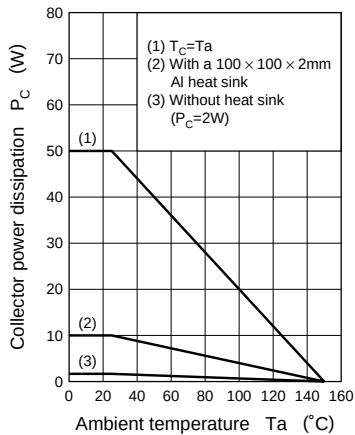
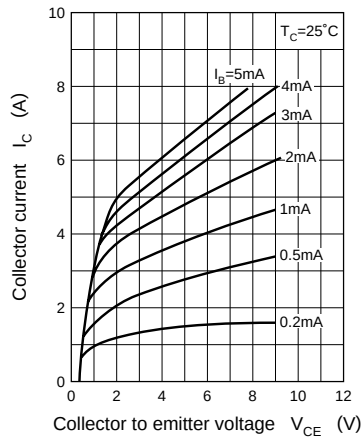
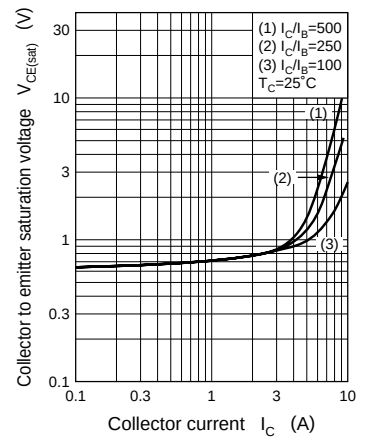
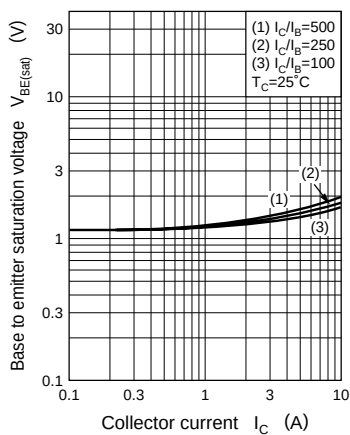
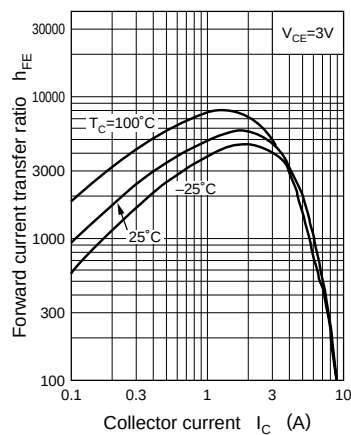
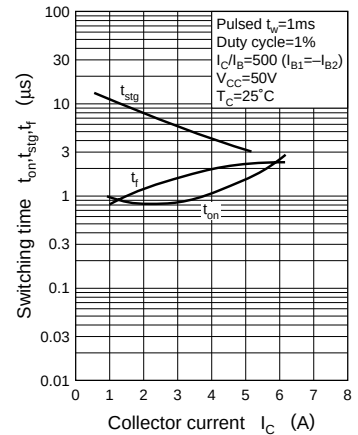
Electrical Characteristics ($T_C=25^{\circ}C$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 120V, I_E = 0$			100	μA
	I_{CEO}	$V_{CE} = 100V, I_B = 0$			10	μA
Collector to base voltage	$V_{CEO(sus)}$	$I_C = 2A, L = 10mH$	120			V
Emitter to base voltage	V_{EBO}	$I_E = 50mA, I_C = 0$	7			V
Forward current transfer ratio	h_{FE}	$V_{CE} = 3V, I_C = 4A$	1000		20000	
Collector to emitter saturation voltage	$V_{CE(sat)1}$	$I_C = 4A, I_B = 8mA$			1.5	V
	$V_{CE(sat)2}$	$I_C = 8A, I_B = 80mA$			3	V
Base to emitter saturation voltage	$V_{BE(sat)1}$	$I_C = 4A, I_B = 8mA$			2	V
	$V_{BE(sat)2}$	$I_C = 8A, I_B = 80mA$			3.5	V
Transition frequency	f_T	$V_{CE} = 10V, I_C = 0.5A, f = 1MHz$		20		MHz
Turn-on time	t_{on}	$I_C = 4A, I_{B1} = 8mA, I_{B2} = -8mA, V_{CC} = 50V$		0.7		μs
Storage time	t_{stg}			6		μs
Fall time	t_f			2		μs

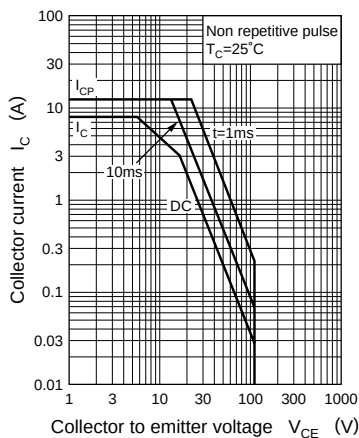
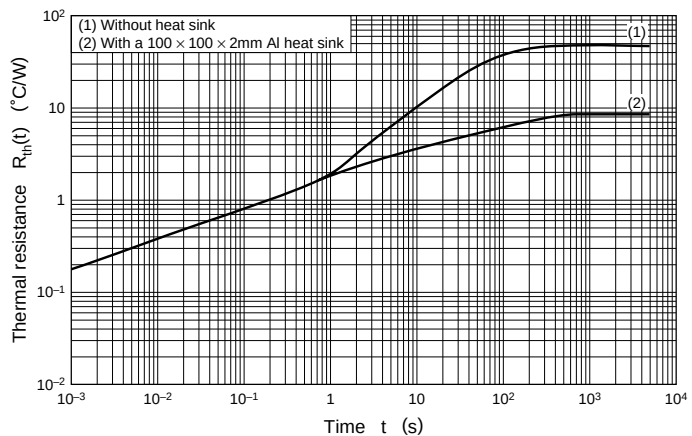


Internal Connection



$P_C - T_a$  $I_C - V_{CE}$  $V_{CE(\text{sat})} - I_C$  $V_{BE(\text{sat})} - I_C$  $h_{FE} - I_C$  $t_{\text{on}}, t_{\text{stg}}, t_f - I_C$ 

Area of safe operation (ASO)

 $R_{th(t)} - t$ 

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