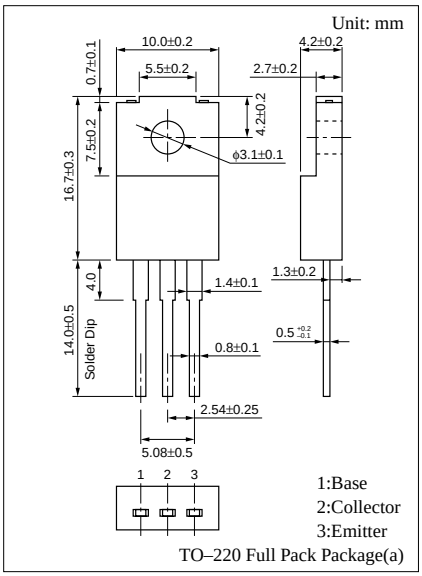
2SD1773

Silicon NPN triple diffusion planar type Darlington

For midium speed switching
Complementary to 2SB1193



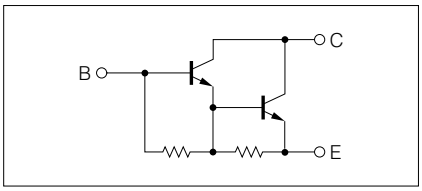
Features

- 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˚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	T_C=25°C	P_C	50	W
	Ta=25°C		2	
Junction temperature		T_j	150	˚C
Storage temperature		T_{stg}	–55 to +150	˚C

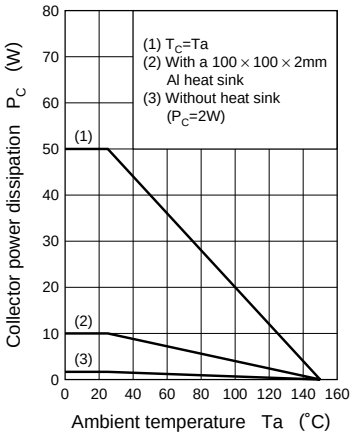
Internal Connection



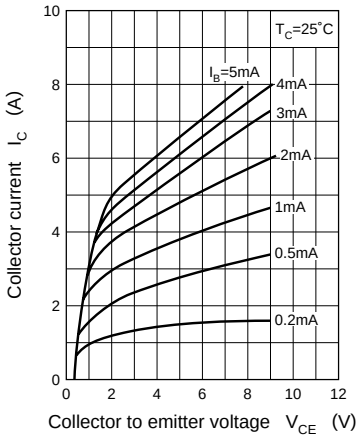
Electrical Characteristics (T_C=25˚C)

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

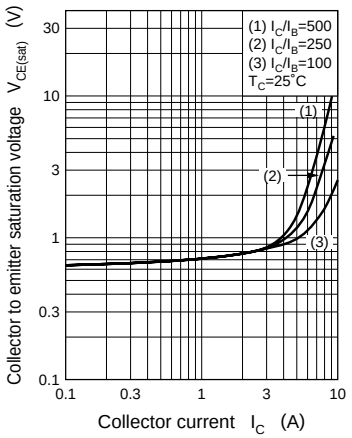
P_C — Ta



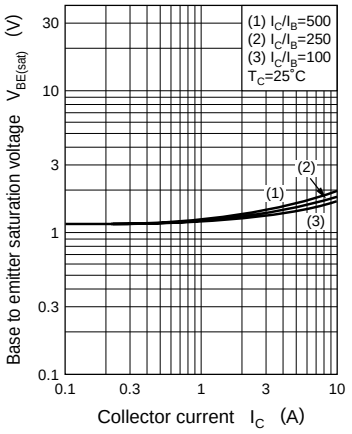
I_C — V_{CE}



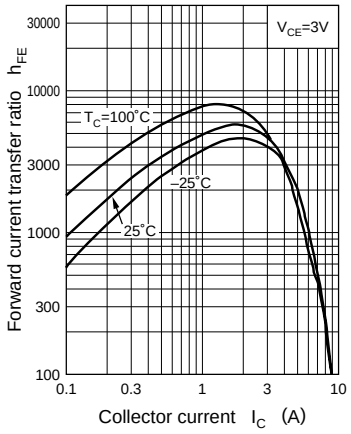
$V_{CE(sat)}$ — I_C



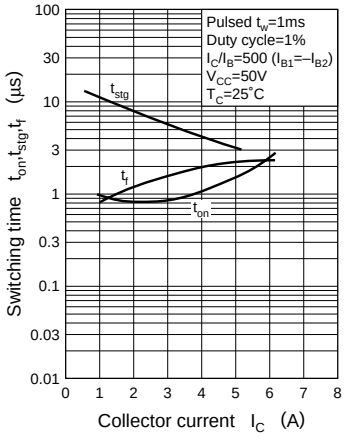
$V_{BE(sat)}$ — I_C



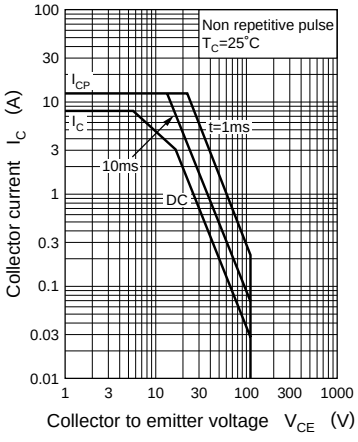
h_{FE} — I_C



t_{on}, t_{stg}, t_f — I_C



Area of safe operation (ASO)



$R_{th(t)}$ — t