Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

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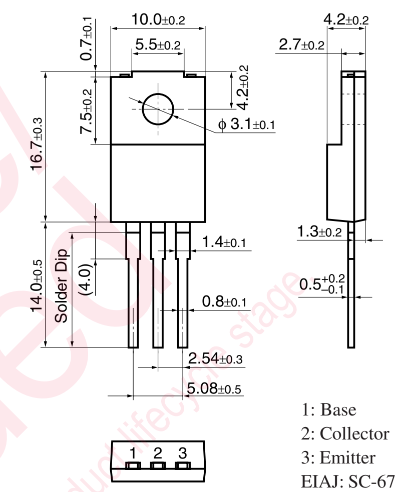
2SD1773

Silicon NPN triple diffusion planar type darlington

For midium speed switching
Complementary to 2SB1193



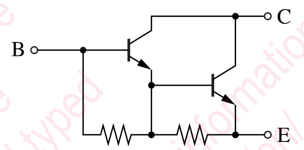
■ Features

- High forward 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	Rating	Unit
Collector-base voltage (Emitter open)		V_{CBO}	120	V
Collector-emitter voltage (Base open)		V_{CEO}	120	V
Emitter-base voltage (Collector open)		V_{EBO}	7	V
Collector current		I_C	8	A
Peak collector current		I_{CP}	12	A
Collector power dissipation		P_C	50	W
	$T_a = 25°C$		2.0	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55 to +150	°C

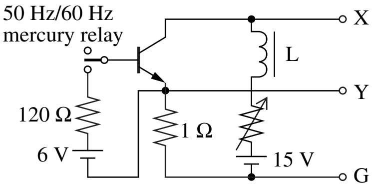
Internal Connection



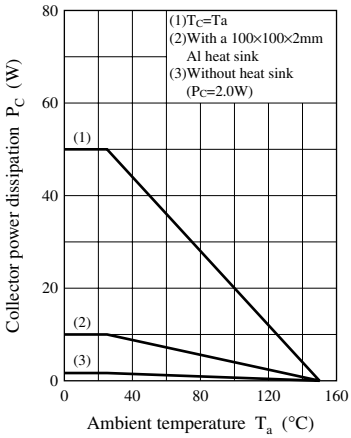
■ Electrical Characteristics $T_C = 25°C \pm 3°C$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter sustaining voltage *	$V_{CEO(SUS)}$	$I_C = 2$ A, $R_{BE} = \infty$, L = 10 mH	120			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = 50$ mA, $I_C = 0$	7			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 120$ V, $I_E = 0$			100	µA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = 100$ V, $R_{BE} = \infty$			10	µA
Forward current transfer ratio	h_{FE}	$V_{CE} = 3$ V, $I_C = 4$ A	1 000		20 000	—
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C = 4$ A, $I_B = 8$ mA			1.5	V
	$V_{CE(sat)2}$	$I_C = 8$ A, $I_B = 80$ mA			3.0	
Base-emitter saturation voltage	$V_{BE(sat)1}$	$I_C = 4$ A, $I_B = 8$ mA			2.0	V
	$V_{BE(sat)2}$	$I_C = 8$ A, $I_B = 80$ mA			3.5	
Transition frequency	f_T	$V_{CE} = 10$ V, $I_C = 1$ A, f = 1 MHz		20		MHz
Turn-on time	t_{on}	$I_C = 4$ A, $I_{B1} = 8$ mA, $I_{B2} = -8$ mA,		0.7		µs
Storage time	t_{stg}	$V_{CC} = 50$ V		6.0		µs
Fall time	t_f			2.0		µs

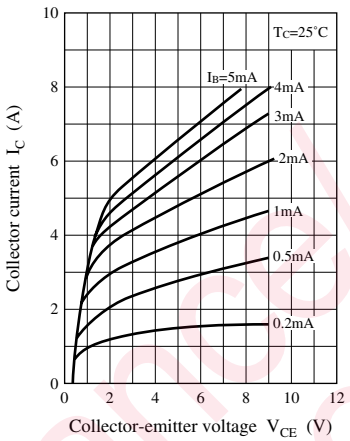
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. *: $V_{CEO(SUS)}$ Test circuit



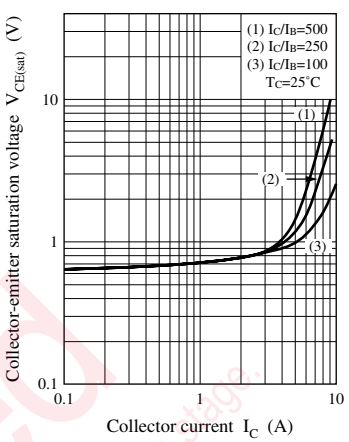
P_C — T_a



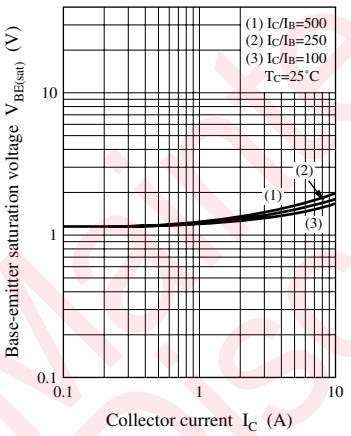
I_C — V_{CE}



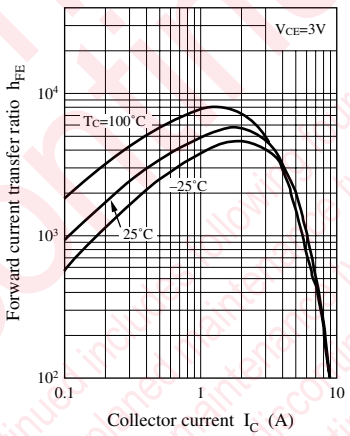
$V_{CE(sat)}$ — I_C



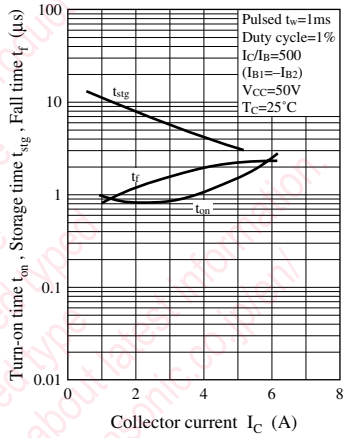
$V_{BE(sat)}$ — I_C



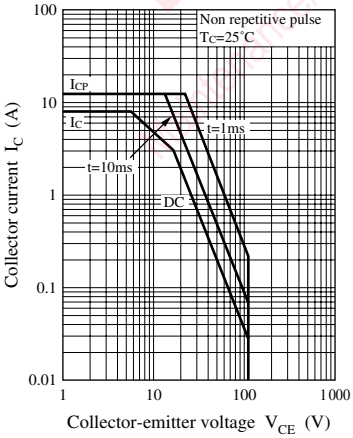
h_{FE} — I_C



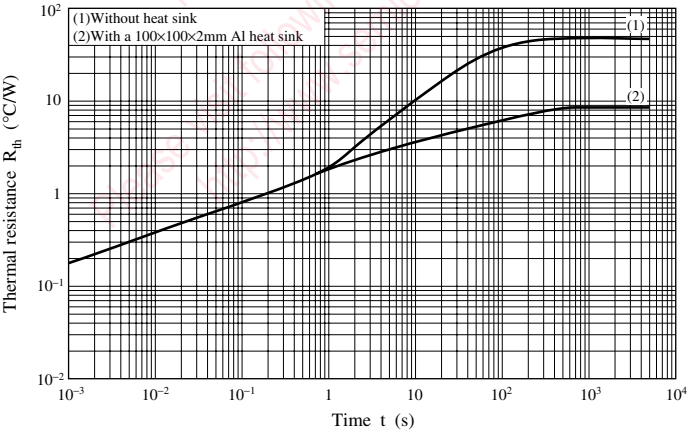
t_{on}, t_{stg}, t_f — I_C



Safe operation area



R_{th} — t



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