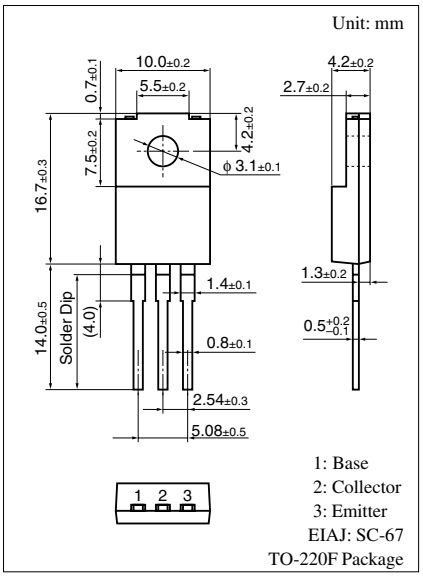
2SD1535

Silicon NPN triple diffusion planar type Darlington

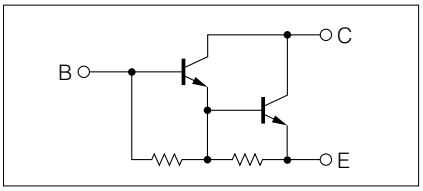
For high power amplification



■ Features

- Excellent current I_C characteristics of forward current transfer ratio h_{FE} vs. collector
- High collector to base voltage V_{CBO}
- Wide area of safe operation (ASO)
- Full-pack package which can be installed to the heat sink with one screw

Internal Connection



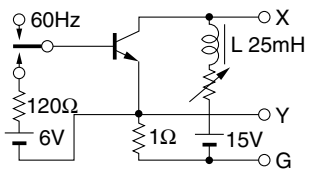
■ Absolute Maximum Ratings $T_C = 25°C$

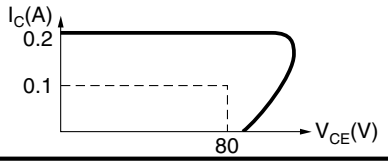
Parameter		Symbol	Rating	Unit
Collector to base voltage		V_{CBO}	500	V
Collector to emitter voltage		V_{CEO}	400	V
Emitter to base voltage		V_{EBO}	12	V
Peak collector current		I_{CP}	14	A
Collector current		I_C	7	A
Base current		I_B	0.5	A
Collector power dissipation	$T_C = 25°C$	P_C	50	W
	$T_a = 25°C$		2	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55 to +150	°C

■ Electrical Characteristics $T_C = 25°C$

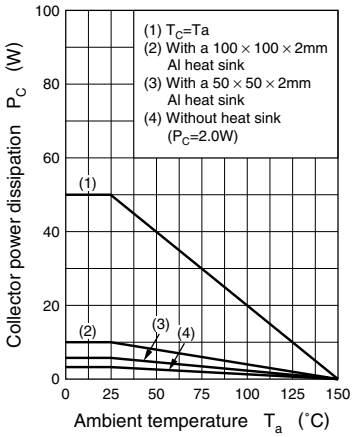
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 500 V, I_E = 0			0.1	mA
	I_{CEO}	V_{CE} = 400 V, I_B = 0			0.1	mA
Emitter cutoff current	I_{EBO}	V_{EB} = 12 V, I_C = 0			100	mA
Collector to emitter voltage *	$V_{CEO(sus)}$	I_C = 100 mA, R_{BZ} = ∞, L = 25 mH	400			mA
Forward current transfer ratio	h_{FE1}	V_{CE} = 2 V, I_C = 2 A	500			
	h_{FE2}	V_{CE} = 2 V, I_C = 6 A	200			
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 7 A, I_B = 70 mA			2.0	V
Base to emitter saturation voltage	$V_{BE(sat)}$	I_C = 7 A, I_B = 70 mA			2.5	V
Transition frequency	f_T	V_{CE} = 10 V, I_C = 0.5 A, f = 1 MHz		20		MHz
Turn-on time	t_{on}	I_C = 7 A, I_{B1} = 70 mA, I_{B2} = −70 mA,		1.5		µs
Storage time	t_{stg}	V_{CC} = 300 V		5.0		µs
Fall time	t_f			6.5		µs

Note) *: $V_{CEO(sus)}$ Test circuit

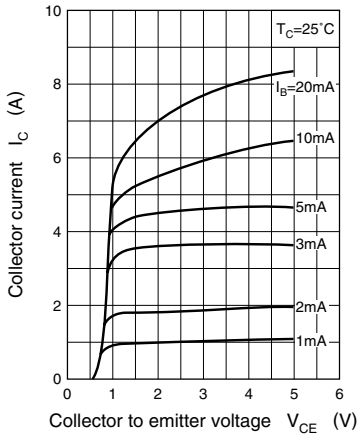




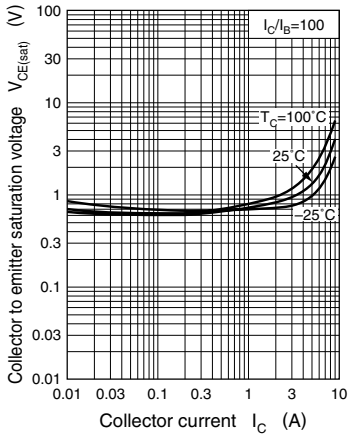
P_C — T_a



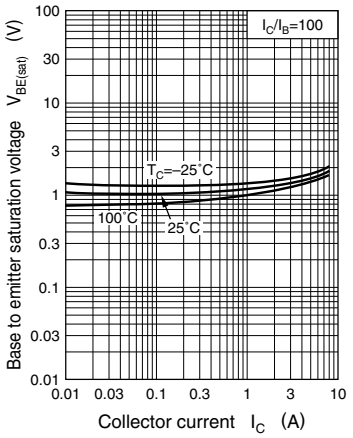
I_C — V_{CE}



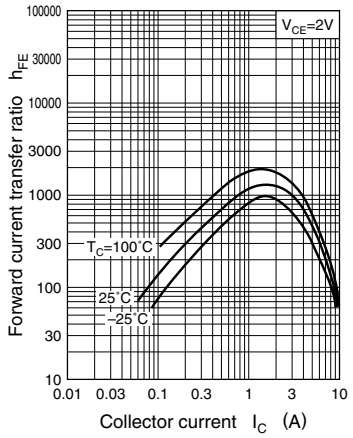
$V_{CE(sat)}$ — I_C



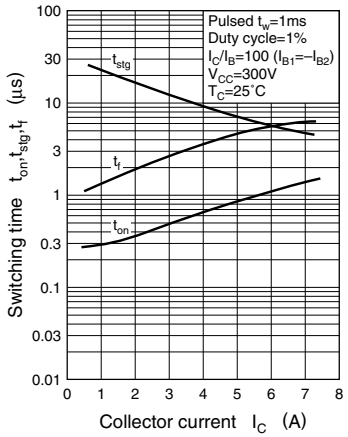
$V_{BE(sat)}$ — I_C



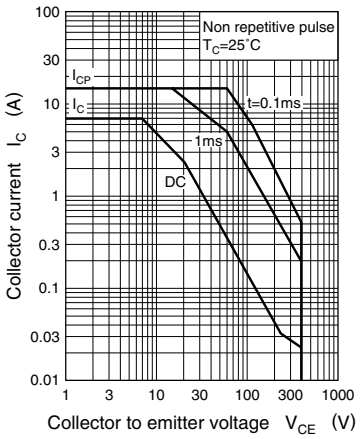
h_{FE} — I_C



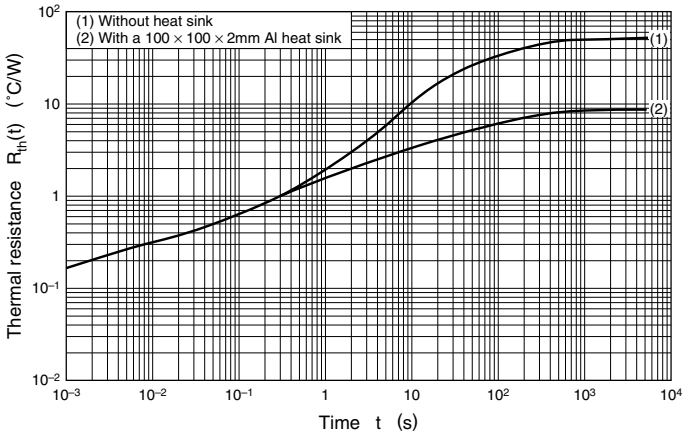
t_{on}, t_{stg}, t_f — I_C



Area of safe operation (ASO)



$R_{th(t)}$ — t



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