

2SD1894

Silicon NPN triple diffusion planar type darlington

For power amplification

Complementary to 2SB1254

■ Features

- Optimum for 60 W HiFi output
- High forward current transfer ratio h_{FE}
- Low collector-emitter saturation voltage $V_{CE(sat)}$
- 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}	160	V
Collector-emitter voltage (Base open)	V_{CEO}	140	V
Emitter-base voltage (Collector open)	V_{EBO}	5	V
Collector current	I_C	7	A
Peak collector current	I_{CP}	12	A
Collector power dissipation	P_C	70	W
		$T_a = 25^\circ\text{C}$	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

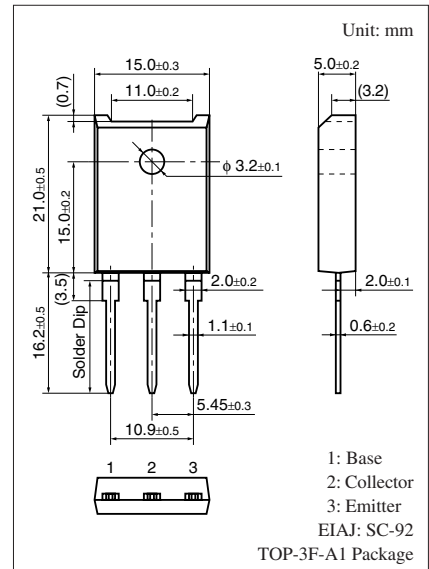
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 30\text{ mA}, I_B = 0$	140			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 160\text{ V}, I_E = 0$			100	μA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = 140\text{ V}, I_B = 0$			100	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$			100	μA
Forward current transfer ratio	h_{FE1}	$V_{CE} = 5\text{ V}, I_C = 1\text{ A}$	2000			—
	h_{FE2}^*	$V_{CE} = 5\text{ V}, I_C = 6\text{ A}$	5000		30000	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 6\text{ A}, I_B = 6\text{ mA}$			2.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 6\text{ A}, I_B = 6\text{ mA}$			3.0	V
Transition frequency	f_T	$V_{CE} = 10\text{ V}, I_C = 0.5\text{ A}, f = 1\text{ MHz}$		20		MHz
Turn-on time	t_{on}	$I_C = 6\text{ A}, I_{B1} = 6\text{ mA}, I_{B2} = -6\text{ mA}$		2.5		μs
Storage time	t_{stg}	$V_{CC} = 50\text{ V}$		5.0		μs
Fall time	t_f			2.5		μs

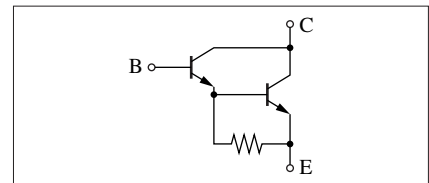
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

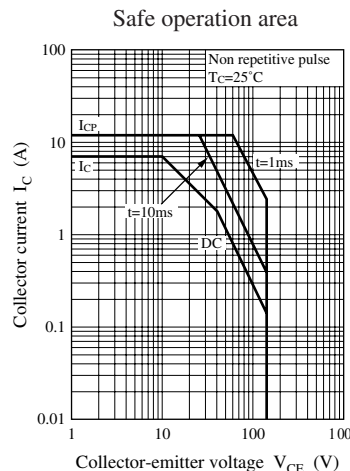
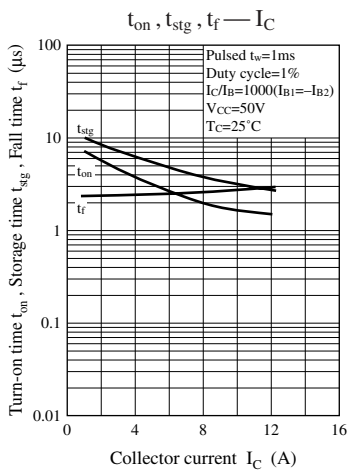
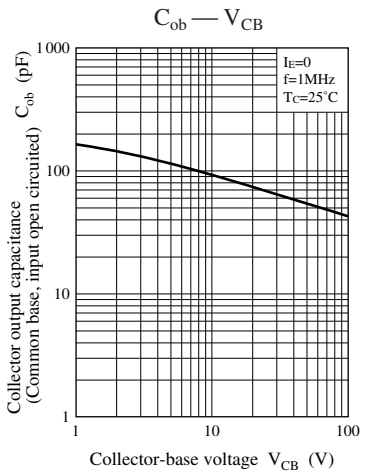
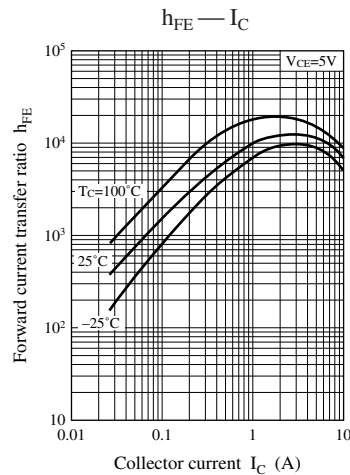
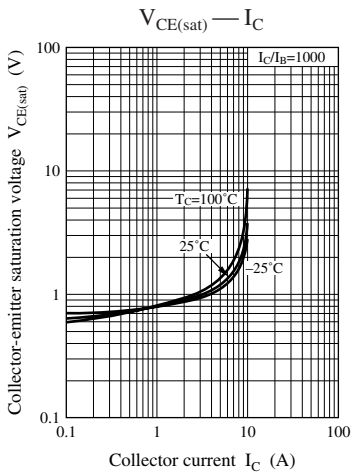
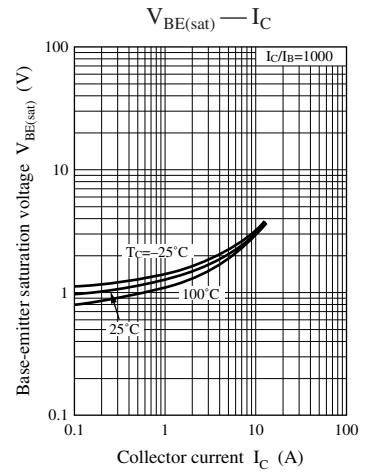
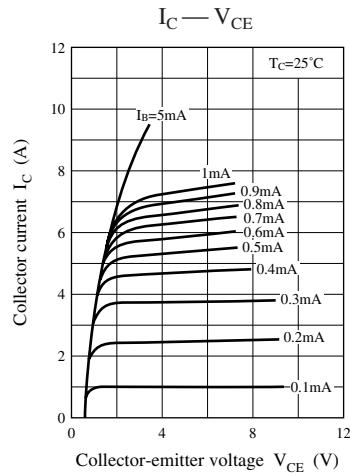
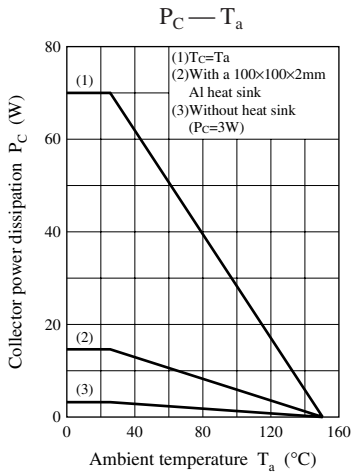
2. *: Rank classification

Rank	Q	S	P
h_{FE2}	5 000 to 15 000	7 000 to 21 000	8 000 to 30 000

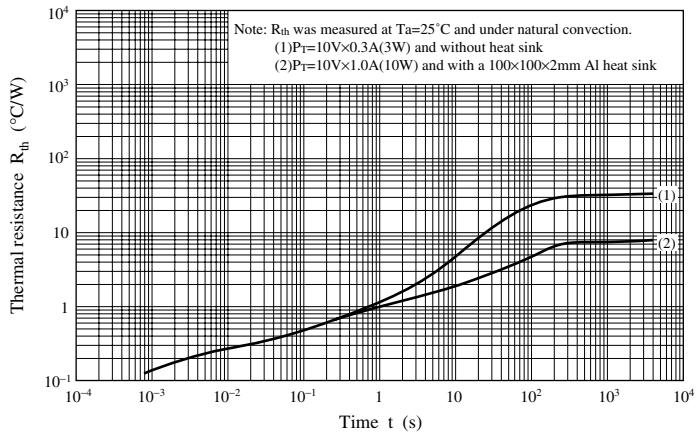


Internal Connection





$R_{th} - t$



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