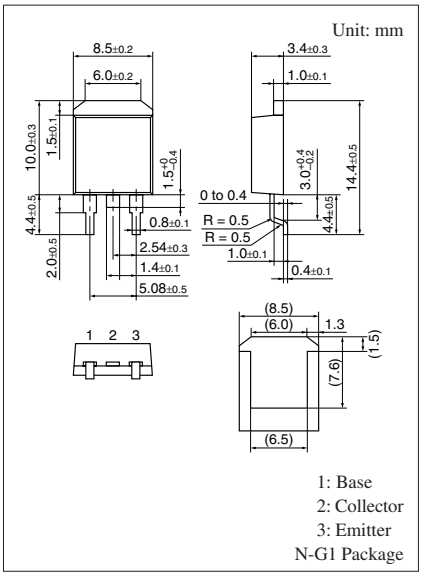
2SD1719

Silicon NPN triple diffusion planar type

For power amplification with high forward current transfer ratio

■ Features

- High forward current transfer ratio h_{FE} which has satisfactory linearity
- High emitter-base voltage (Collector open) V_{EBO}
- N type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment.



Note) Self-supported type package is also prepared.

■ Absolute Maximum Ratings $T_C = 25°C$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	100	V
Collector-emitter voltage (Base open)	V_{CEO}	60	V
Emitter-base voltage (Collector open)	V_{EBO}	15	V
Collector current	I_C	6	A
Peak collector current	I_{CP}	12	A
Base current	I_B	3	A
Collector power dissipation	P_C	40	W
$T_a = 25°C$		1.3	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

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

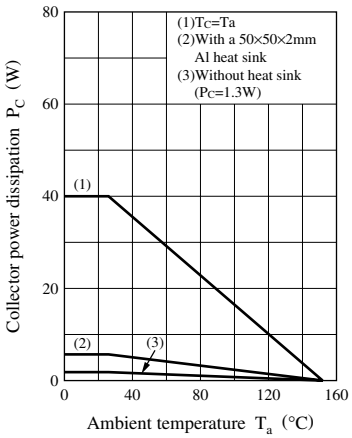
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	V_{CEO}	I_C = 25 mA, I_B = 0	60			V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 100 V, I_E = 0			100	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	V_{EB} = 15 V, I_C = 0			100	μA
Forward current transfer ratio *	h_{FE}	V_{CE} = 4 V, I_C = 1 A	300		2000	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 5 A, I_B = 0.1 A			0.5	V
Transition frequency	f_T	V_{CE} = 12 V, I_C = 0.5 A, f = 10 MHz		30		MHz
Turn-on time	t_{on}	I_C = 5 A		0.3		μs
Strage time	t_{stg}	I_{B1} = 0.1 A, I_{B2} = − 0.1 A		1.5		μs
Fall time	t_f	V_{CC} = 50 V		0.6		μs

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

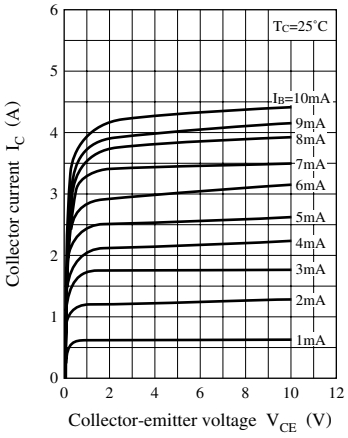
2. *: Rank classification

Rank	Q	P
h_{FE}	300 to 1200	800 to 2000

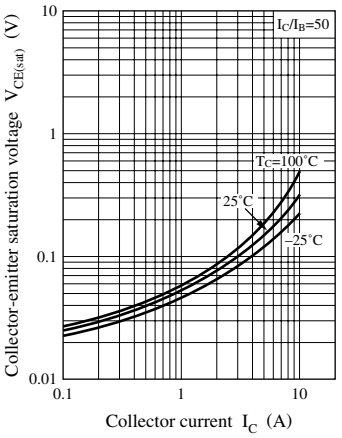
P_C — T_a



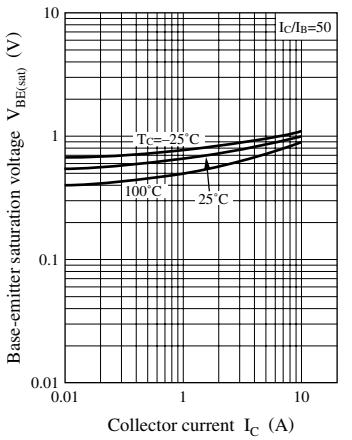
I_C — V_{CE}



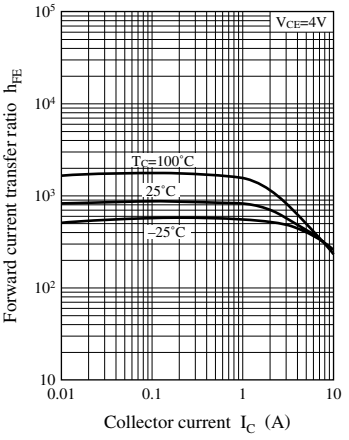
$V_{CE(sat)}$ — I_C



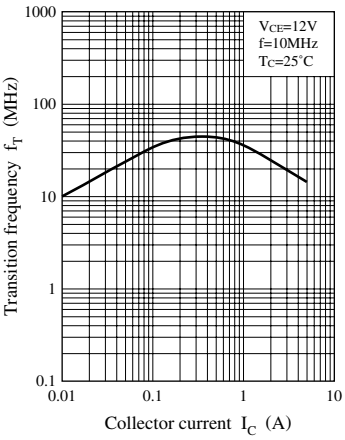
$V_{BE(sat)}$ — I_C



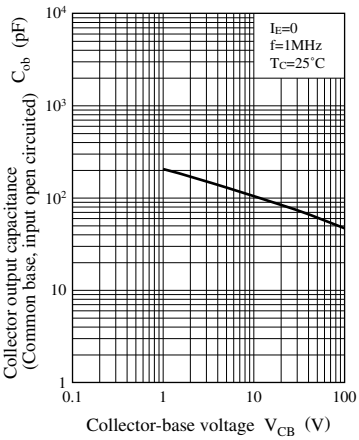
h_{FE} — I_C



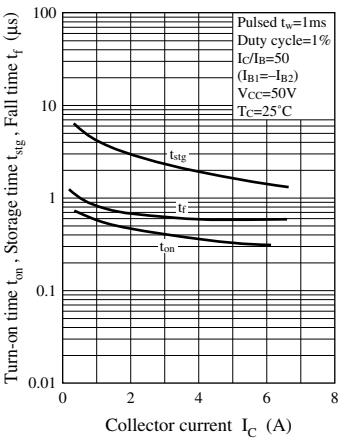
f_T — I_C



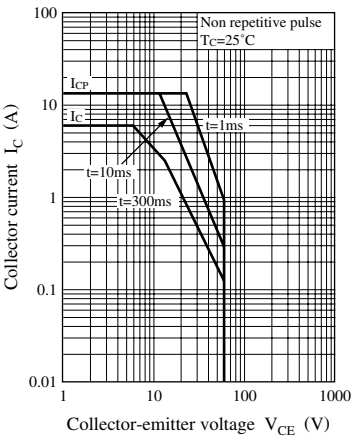
C_{ob} — V_{CB}

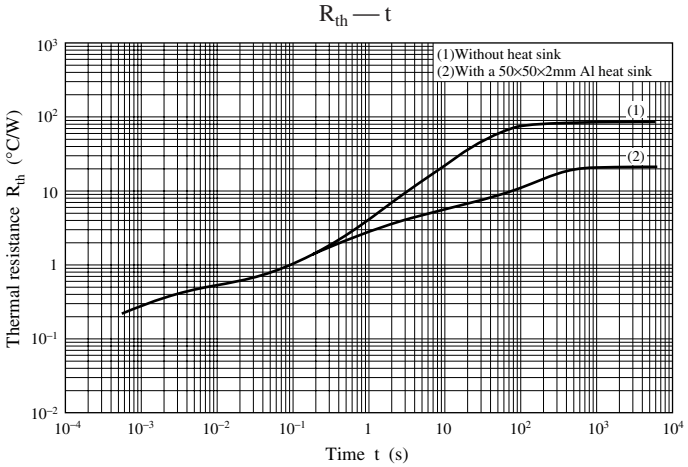


t_{on}, t_{stg}, t_f — I_C



Safe operation area




R_{th} — t
(1)Without heat sink
(2)With a 50×50×2mm Al heat sink
(1)
(2)
Thermal resistance R_{th} (°C/W)
10^3
10^2
10
1
10^{-1}
10^{-2}
10^{-4}
10^{-3}
10^{-2}
10^{-1}
1
10
10^2
10^3
10^4
Time t (s)

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