

2SD2139

Silicon NPN triple diffusion planar type

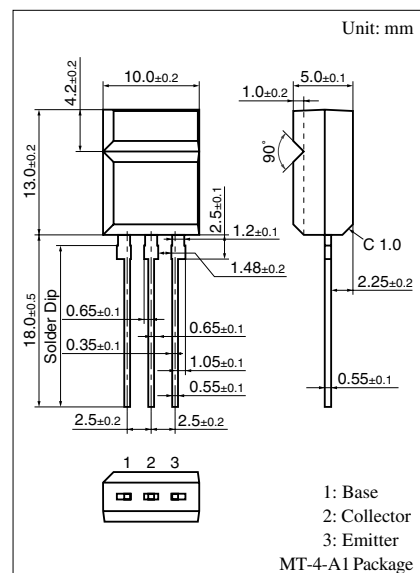
For high-current amplification ratio, power amplification

■ Features

- High forward current transfer ratio h_{FE}
- Satisfactory linearity of forward current transfer ratio h_{FE}
- Allowing supply with the radial taping

■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	80	V
Collector to emitter voltage	V_{CEO}	60	V
Emitter to base voltage	V_{EBO}	6	V
Peak collector current	I_{CP}	6	A
Collector current	I_C	3	A
Base current	I_B	1	A
Collector power dissipation	$T_C = 25^\circ\text{C}$	15	W
	$T_a = 25^\circ\text{C}$	2	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

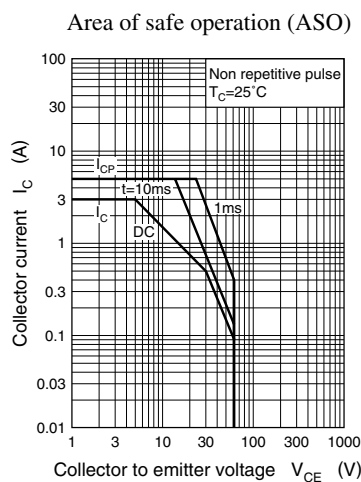
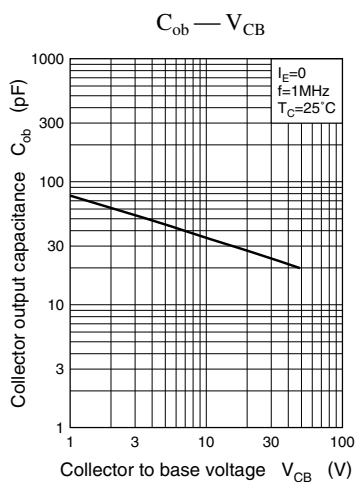
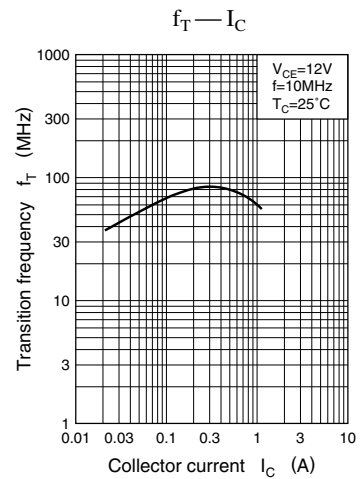
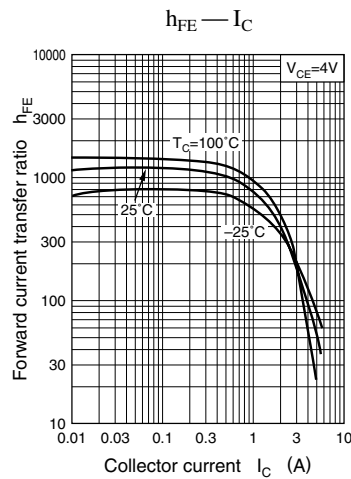
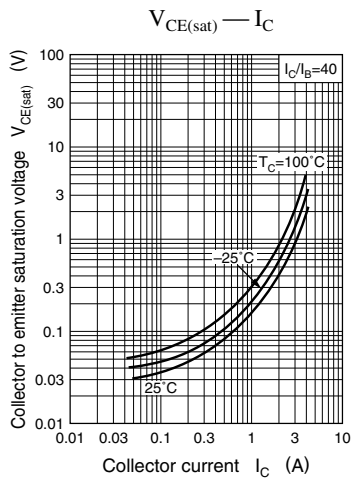
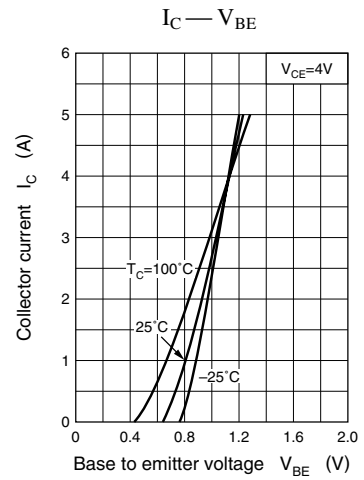
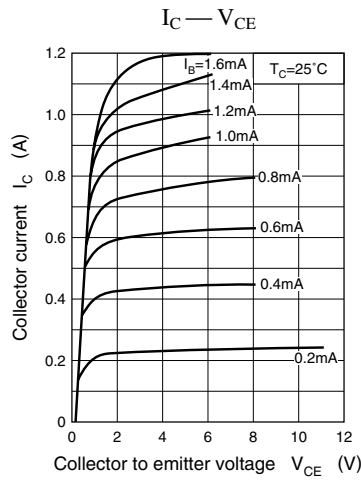
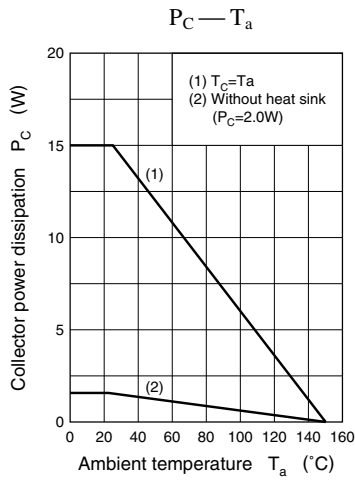


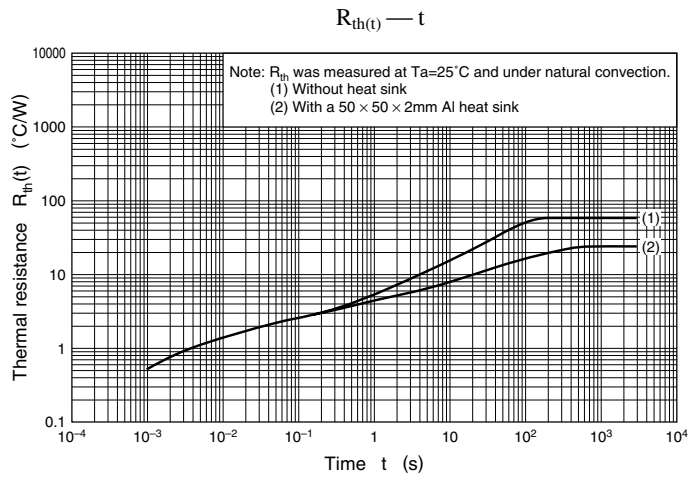
■ Electrical Characteristics $T_C = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 80\text{ V}, I_E = 0$			100	μA
	I_{CEO}	$V_{CE} = 40\text{ V}, I_B = 0$			100	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 6\text{ V}, I_C = 0$			100	μA
Collector to emitter voltage	V_{CEO}	$I_C = 25\text{ mA}, I_B = 0$	60			V
Forward current transfer ratio *	h_{FE}	$V_{CE} = 4\text{ V}, I_C = 0.5\text{ A}$	500		2 500	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 2\text{ A}, I_B = 0.05\text{ A}$			1	V
Transition frequency	f_T	$V_{CE} = 12\text{ V}, I_C = 0.2\text{ A}, f = 10\text{ MHz}$		50		MHz

Note) *: Rank classification

Rank	Q	P	O
h_{FE}	500 to 1 000	800 to 1 500	1 200 to 2 500





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