2SD2139

Silicon NPN triple diffusion planar type

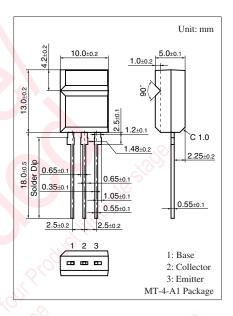
For high-speed switching and high current amplification ratio

Features

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

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

Parameter	Symbol	Rating	Unit	
Collector-base voltage (Emitter open)	V _{CBO}	80	V	
Collector-emitter voltage (Base open)	V _{CEO}	60	V	
Emitter-base voltage (Collector open)	V _{EBO}	6	V	
Collector current	I _C	3	Α	
Peak collector current	I _{CP}	6	А	
Base current	IB	1	А	
Collector power dissipation	P _C	15	W	
$T_a = 25^{\circ}C$		2.0		
Junction temperature	Tj	150	°Col	
Storage temperature	T _{stg}	<mark>-</mark> 55 to +150	°C	



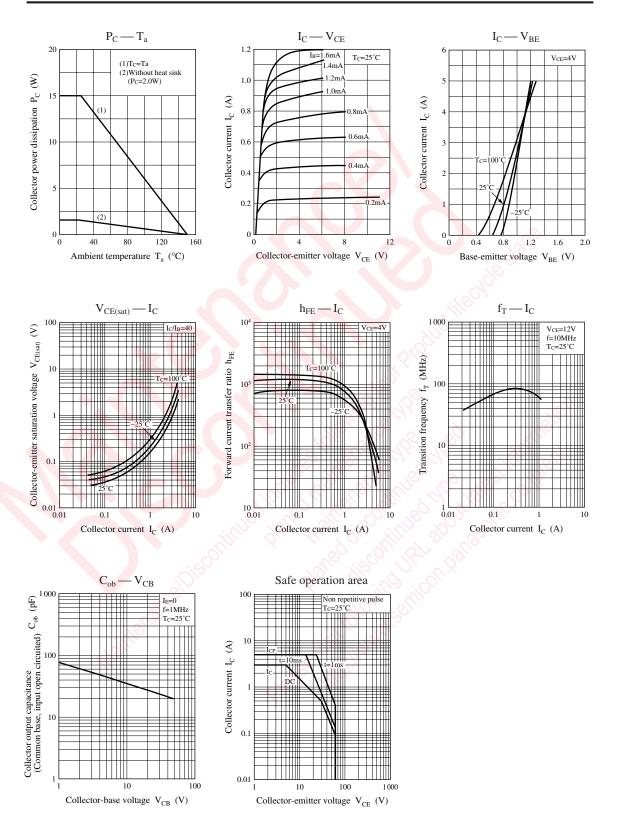
Electrical Characteristics $T_{C} = 25^{\circ}C \pm 3^{\circ}C$

Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-emitter voltage (Base open)	V _{CEO}	$I_{\rm C} = 25 \text{ mA}, I_{\rm B} = 0$	60	SOL		V
Collector-base cutoff current (Emitter open)	I _{CBO}	$V_{CB} = 80 V, I_E = 0$		0-	100	μΑ
Collector-emitter cutoff current (Base open)	I _{CEO}	$V_{CE} = 40 \text{ V}, I_B = 0$	$\sim 2^{\circ}$		100	μΑ
Emitter-base cutoff current (Collector open)	I _{EBO}	$V_{EB} = 6 V, I_C = 0$			100	μΑ
Forward current transfer ratio	h _{FE}	$V_{CE} = 4 \text{ V}, I_C = 0.5 \text{ A}$	500		2 500	_
Collector-emitter saturation voltage	V _{CE(sat)}	$I_{\rm C} = 2 \text{ A}, I_{\rm B} = 0.05 \text{ A}$			1.0	V
Transition frequency	f _T	$V_{CE} = 12 \text{ V}, I_C = 0.2 \text{ A}, f = 10 \text{ MHz}$		50		MHz

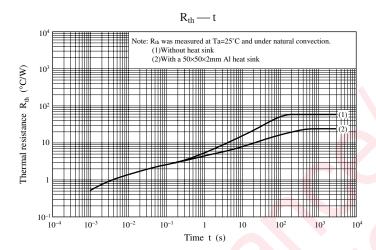
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors. 2. *: Rank classification

Rank	Q	Р	0
$h_{\rm FE}$	500 to 1 000	800 to 1 500	1 200 to 2 500

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