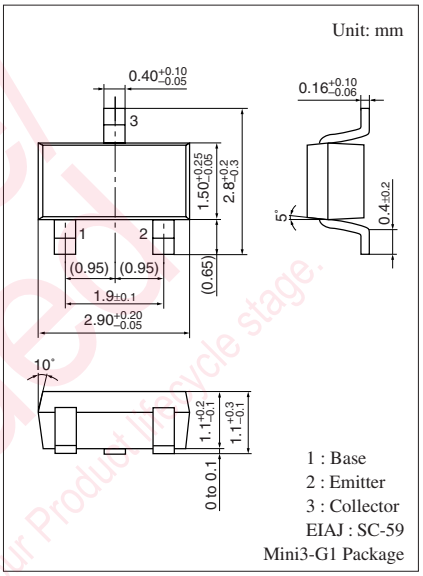
2SD1149

Silicon NPN epitaxial planar type

For low-frequency amplification



Marking symbol: 1V

■ Features

- High forward current transfer ratio h_{FE}
- Low collector-emitter saturation voltage $V_{CE(sat)}$
- High emitter-base voltage (Collector open) V_{EBO}
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	100	V
Collector-emitter voltage (Base open)	V_{CEO}	100	V
Emitter-base voltage (Collector open)	V_{EBO}	15	V
Collector current	I_C	20	mA
Peak collector current	I_{CP}	50	mA
Collector power dissipation	P_C	200	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = 10$ µA, $I_E = 0$	100			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 1$ mA, $I_B = 0$	100			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = 10$ µA, $I_C = 0$	15			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 60$ V, $I_E = 0$			0.1	µA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = 60$ V, $I_B = 0$			1.0	µA
Forward current transfer ratio *	h_{FE}	$V_{CE} = 10$ V, $I_C = 2$ mA	400		1 200	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10$ mA, $I_B = 1$ mA		0.05	0.20	V
Transition frequency	f_T	$V_{CB} = 10$ V, $I_E = -2$ mA, f = 200 MHz		100		MHz

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

Rank	R	S
h_{FE}	400 to 800	600 to 1 200

Maintenance/Discontinued
Maintenance/Discontinued includes following four Product lifecycle stage.
planned maintenance type
maintenance type
maintenance discontinued typed
discontinued type
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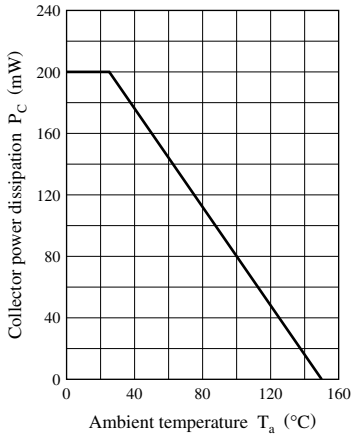
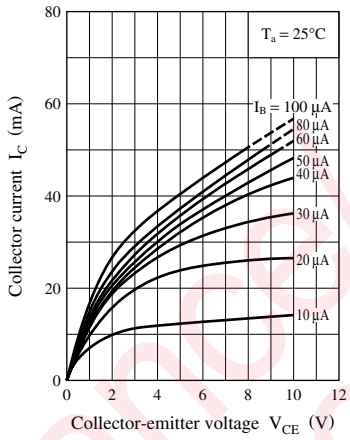
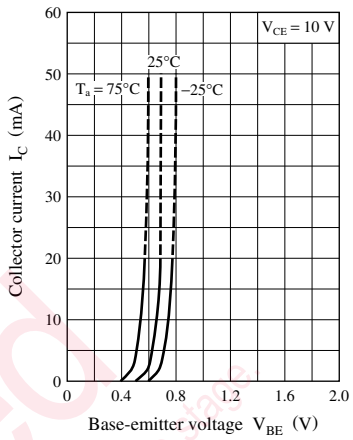
P_C — T_a



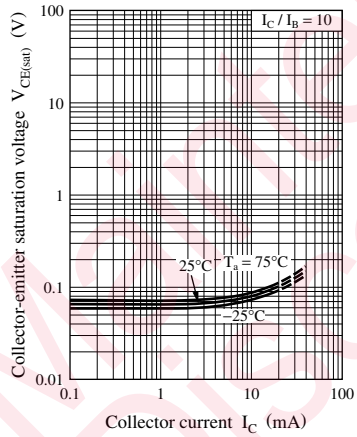
I_C — V_{CE}



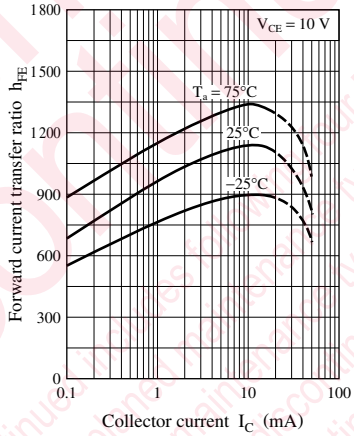
I_C — V_{BE}



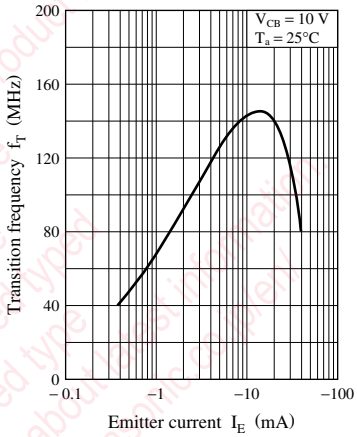
$V_{CE(sat)}$ — I_C



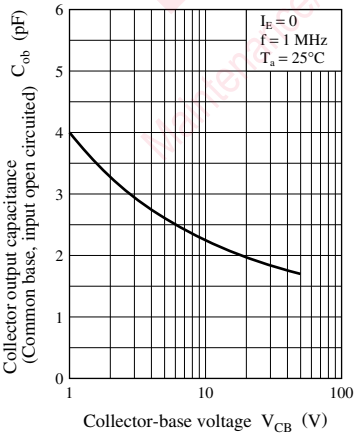
h_{FE} — I_C



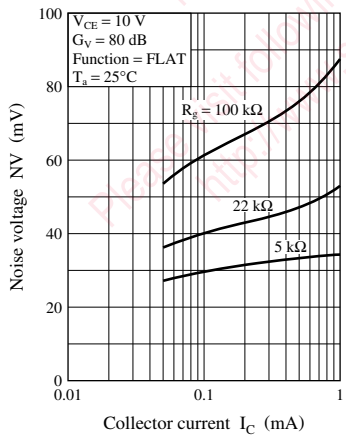
f_T — I_E



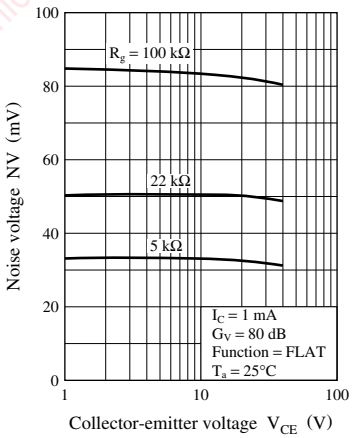
C_{ob} — V_{CB}



NV — I_C



NV — V_{CE}



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