# 2SD1149

## Silicon NPN epitaxial planar type

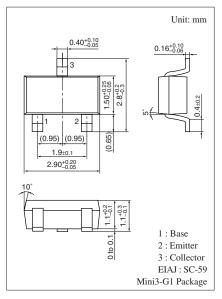
#### For low-frequency amplification

#### ■ Features

- High forward current transfer ratio hFE
- Low collector-emitter saturation voltage V<sub>CE(sat)</sub>
- ullet 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 <sub>CBO</sub>	100	V	
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	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 <sub>C</sub>	200	mW	
Junction temperature	$T_{j}$	150	°C	
Storage temperature	T <sub>stg</sub>	-55 to +150	°C	



Marking symbol: 1V

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

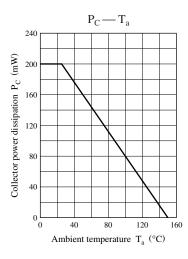
Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	$I_C = 10 \mu\text{A},  I_E = 0$	100			V
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	$I_C = 1 \text{ mA}, I_B = 0$	100			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = 10 \ \mu A, I_C = 0$	15			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 60 \text{ V}, I_{E} = 0$			0.1	μΑ
Collector-emitter cutoff current (Base open)	I <sub>CEO</sub>	$V_{CE} = 60 \text{ V}, I_{B} = 0$			1.0	μΑ
Forward current transfer ratio *	h <sub>FE</sub>	$V_{CE} = 10 \text{ V}, I_{C} = 2 \text{ mA}$	400		1 200	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	$I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$		0.05	0.20	V
Transition frequency	$f_T$	$V_{CB} = 10 \text{ V}, I_E = -2 \text{ mA}, f = 200 \text{ MHz}$		100		MHz

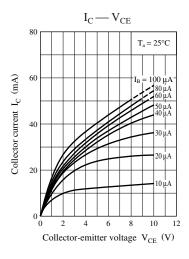
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

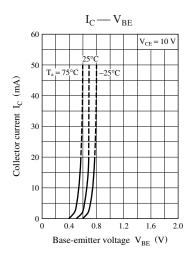
#### 2. \*: Rank classification

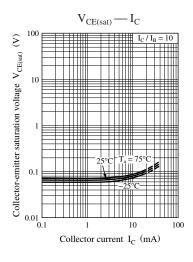
Rank	R	S
$h_{FE}$	400 to 800	600 to 1 200

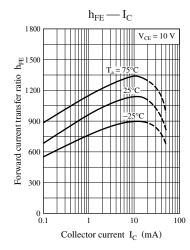
## **Panasonic**

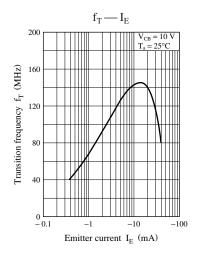


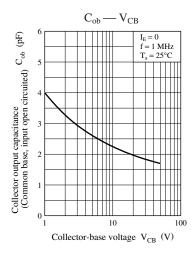


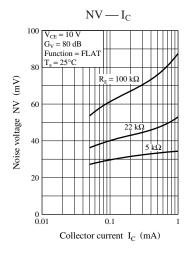


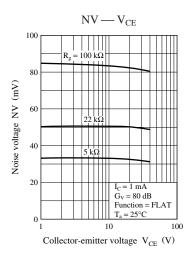












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