

2SD1330

Silicon NPN epitaxial planar type

For low-voltage output amplification

For muting

For DC-DC converter

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Low ON resistance R_{on}
- High forward current transfer ratio h_{FE}
- M type package allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	25	V
Collector-emitter voltage (Base open)	V_{CEO}	20	V
Emitter-base voltage (Collector open)	V_{EBO}	12	V
Collector current	I_C	0.5	A
Peak collector current	I_{CP}	1	A
Collector power dissipation	P_C	600	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

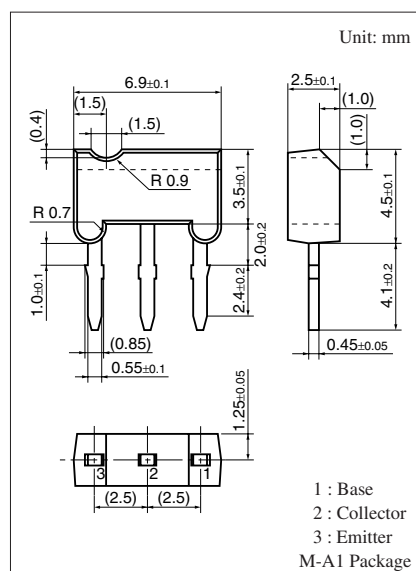
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = 10\ \mu\text{A}$, $I_E = 0$	25			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 1\ \text{mA}$, $I_B = 0$	20			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = 10\ \mu\text{A}$, $I_C = 0$	12			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 25\ \text{V}$, $I_E = 0$			100	nA
Forward current transfer ratio ^{*1}	h_{FE1} ^{*2}	$V_{CE} = 2\ \text{V}$, $I_C = 0.5\ \text{A}$	200		800	—
	h_{FE2}	$V_{CE} = 2\ \text{V}$, $I_C = 1\ \text{A}$	60			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 0.5\ \text{A}$, $I_B = 20\ \text{mA}$		0.13	0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 0.5\ \text{A}$, $I_B = 50\ \text{mA}$			1.2	V
Transition frequency	f_T	$V_{CB} = 10\ \text{V}$, $I_E = -50\ \text{mA}$, $f = 200\ \text{MHz}$		200		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = 10\ \text{V}$, $I_E = 0$, $f = 1\ \text{MHz}$		10		pF
ON resistance ^{*3}	R_{on}			1		Ω

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

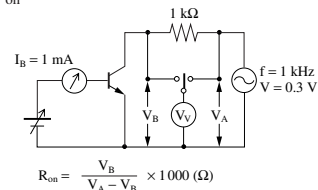
2. *1: Pulse measurement

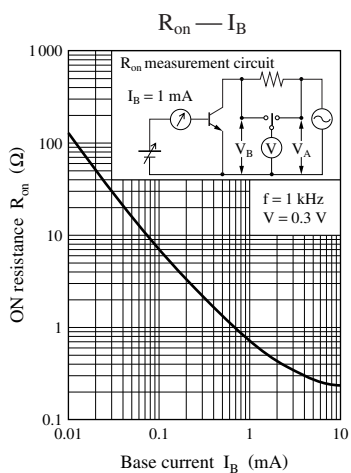
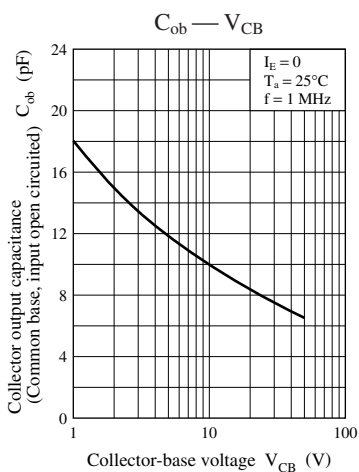
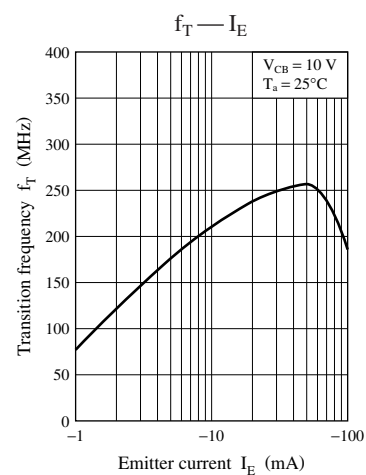
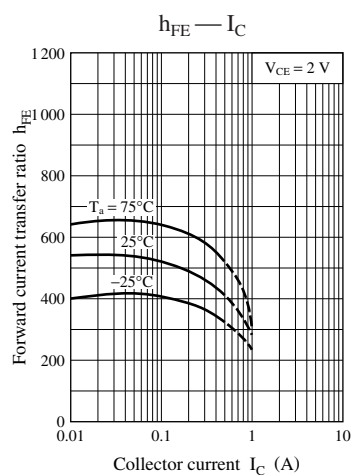
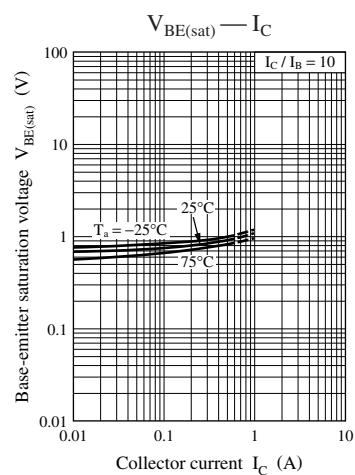
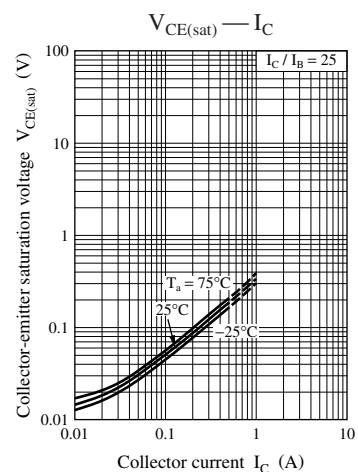
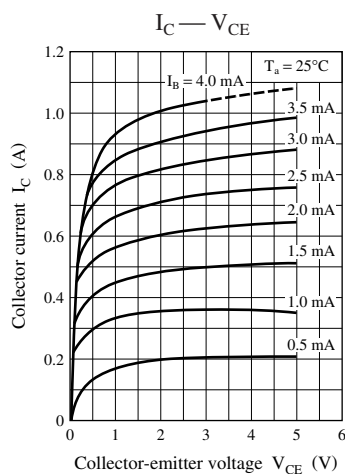
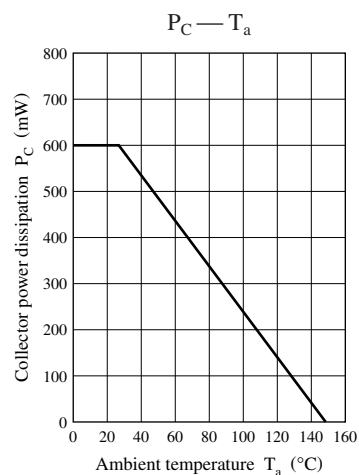
*2: Rank classification

Rank	R	S	T
h_{FE1}	200 to 350	300 to 500	400 to 800



*3: R_{on} Measurement circuit





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