

2SD1302

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}

■ 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	0.40	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}			1.0		Ω

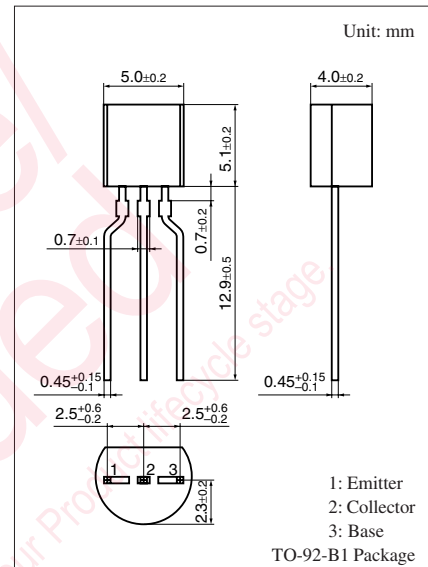
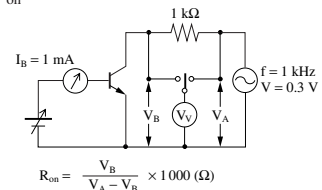
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

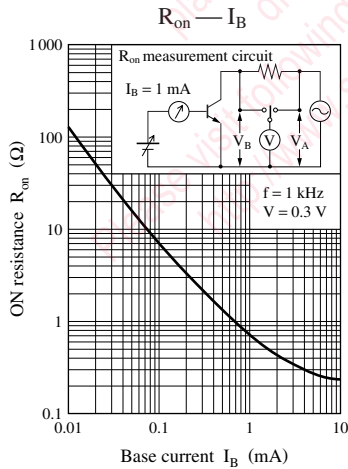
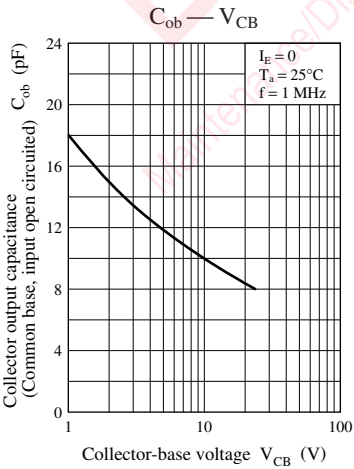
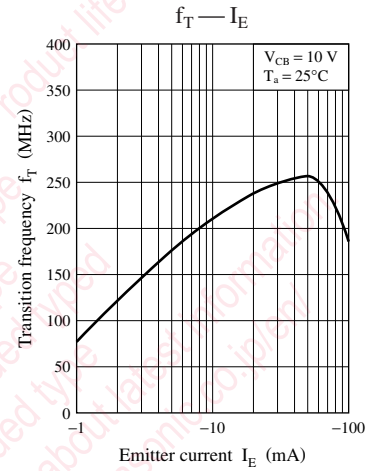
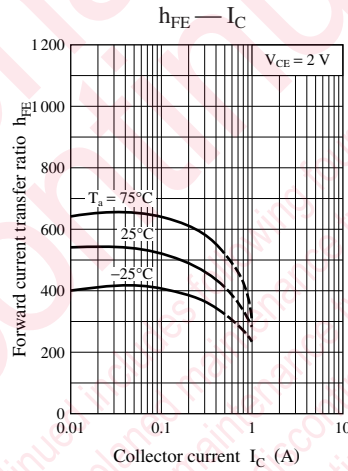
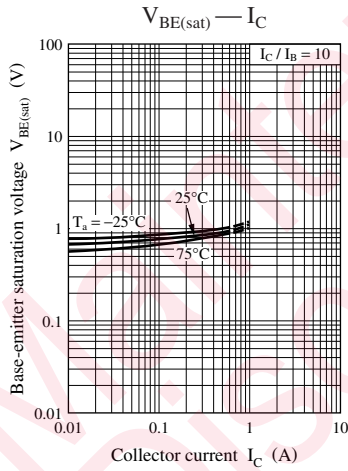
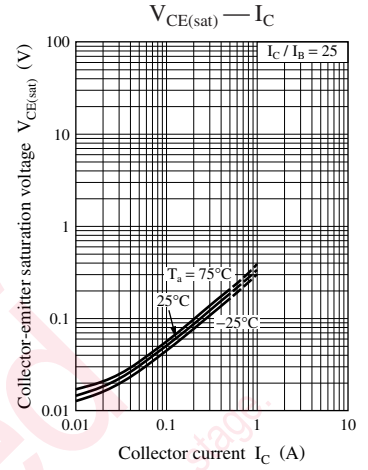
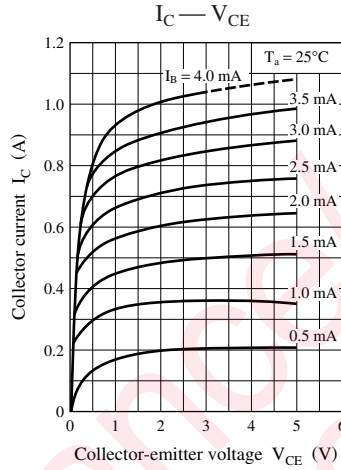
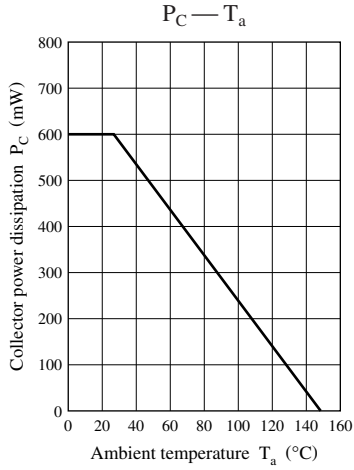
2. *1: Pulse measurement

*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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