

2SB1378

Silicon PNP epitaxial planar type

For low-frequency power amplification

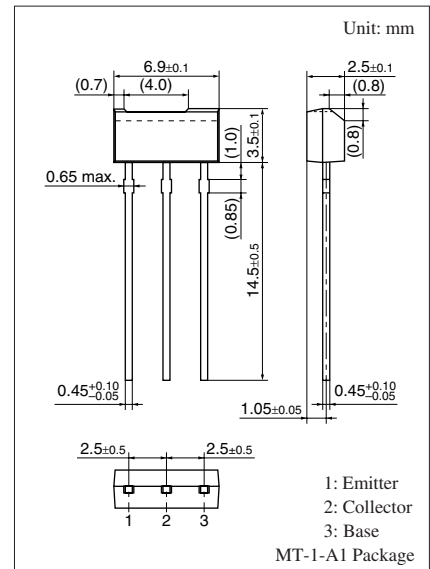
Complementary to 2SD1996

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Optimum for low-voltage operation and for converters
- Allowing supply with the radial tapping

■ 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}	-7	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 $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

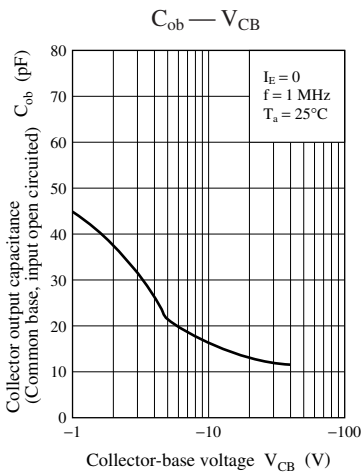
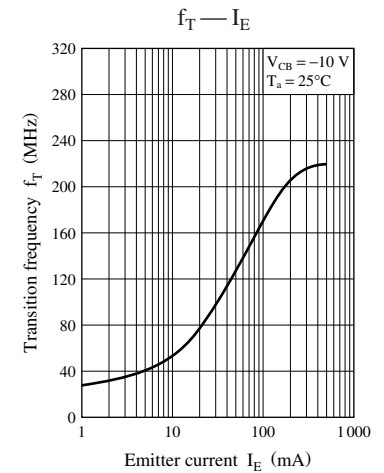
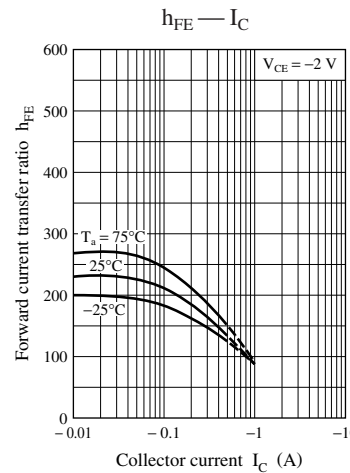
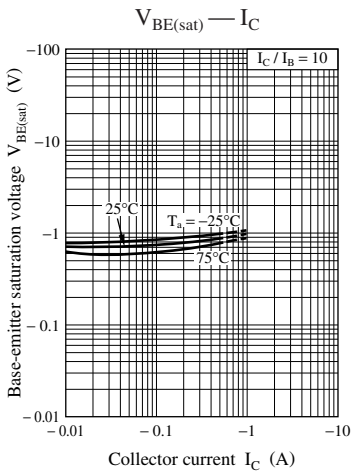
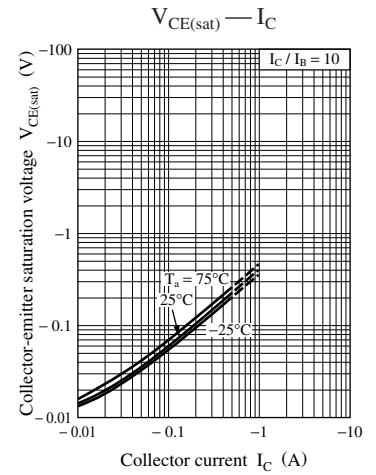
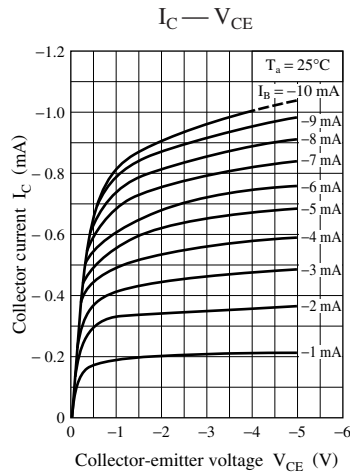
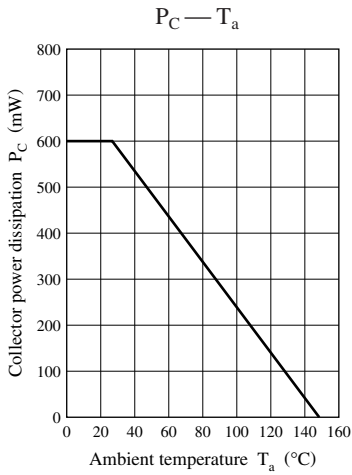
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = -10 \mu\text{A}, I_E = 0$	-25			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = -1 \text{ mA}, I_B = 0$	-20			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = -10 \mu\text{A}, I_C = 0$	-7			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = -25 \text{ V}, I_E = 0$			-100	nA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = -20 \text{ V}, I_B = 0$			-1	μA
Forward current transfer ratio	h_{FE1} *2	$V_{CE} = -2 \text{ V}, I_C = -0.5 \text{ A}$	90		350	—
	h_{FE2}	$V_{CE} = -2 \text{ V}, I_C = -1 \text{ A}$	25			—
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = -500 \text{ mA}, I_B = -50 \text{ mA}$			-0.4	V
Base-emitter saturation voltage *1	$V_{BE(sat)}$	$I_C = -500 \text{ mA}, I_B = -50 \text{ mA}$			-1.2	V
Transition frequency	f_T	$V_{CB} = -10 \text{ V}, I_E = 50 \text{ mA}, f = 200 \text{ MHz}$		150		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		15	25	pF

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	Q	R	S
h_{FE1}	90 to 155	130 to 220	180 to 350



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