

XN06542 (XN6542)

Silicon NPN epitaxial planar type

For high-frequency amplification/oscillation/mixing (Tr1)

For medium-frequency amplification (Tr2)

■ Features

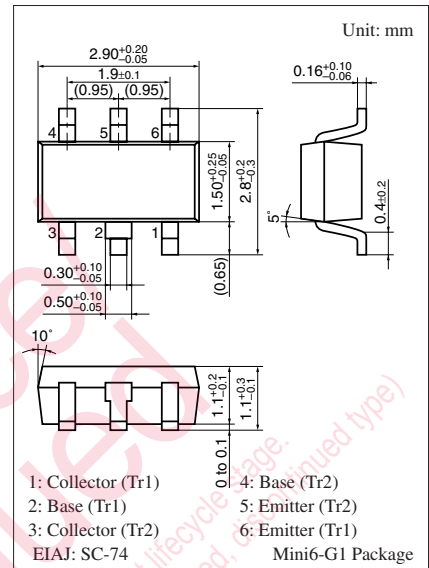
- Two elements incorporated into one package
- Reduction of the mounting area and assembly cost by one half

■ Basic Part Number

- 2SC1215 + 2SD1360

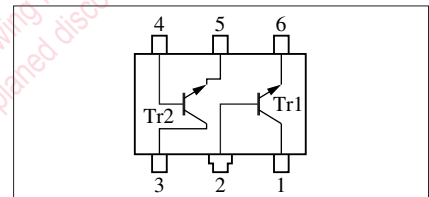
■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

	Parameter	Symbol	Rating	Unit
Tr1	Collector-base voltage (Emitter open)	V_{CBO}	30	V
	Collector-emitter voltage (Base open)	V_{CEO}	20	V
	Emitter-base voltage (Collector open)	V_{EBO}	3	V
	Collector current	I_C	50	mA
Tr2	Collector-base voltage (Emitter open)	V_{CBO}	45	V
	Collector-emitter voltage (Base open)	V_{CEO}	35	V
	Emitter-base voltage (Collector open)	V_{EBO}	4	V
	Collector current	I_C	50	mA
Overall	Total power dissipation	P_T	300	mW
	Junction temperature	T_j	150	$^\circ\text{C}$
	Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$



Marking Symbol: 5Z

Internal Connection



Note) The part number in the parenthesis shows conventional part number.

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

• Tr1

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = 100 \mu\text{A}, I_E = 0$	30			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = 10 \mu\text{A}, I_C = 0$	3			V
Base-emitter voltage	V_{BE}	$V_{CB} = 10 \text{V}, I_E = -2 \text{mA}$		720		mV
Forward current transfer ratio	h_{FE}	$V_{CB} = 10 \text{V}, I_E = -2 \text{mA}$	25		250	—
Transition frequency	f_T	$V_{CB} = 10 \text{V}, I_E = -15 \text{mA}, f = 200 \text{MHz}$	1 000	1 300	1 600	MHz
Reverse transfer capacitance (Common base)	C_{rb}	$V_{CE} = 6 \text{V}, I_C = 0, f = 1 \text{MHz}$		0.8		pF
Reverse transfer capacitance (Common emitter)	C_{re}	$V_{CB} = 10 \text{V}, I_E = -1 \text{mA}, f = 10.7 \text{MHz}$		1.0	1.5	pF
Power gain	G_P	$V_{CB} = 10 \text{V}, I_E = -1 \text{mA}, f = 100 \text{MHz}$		20		dB

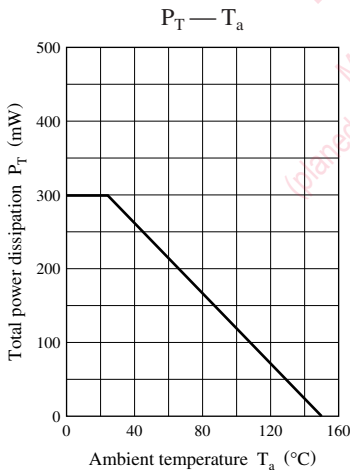
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

• Tr2

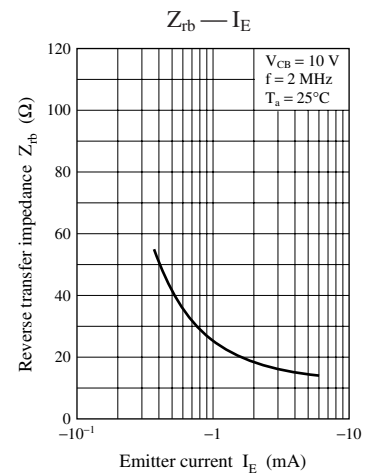
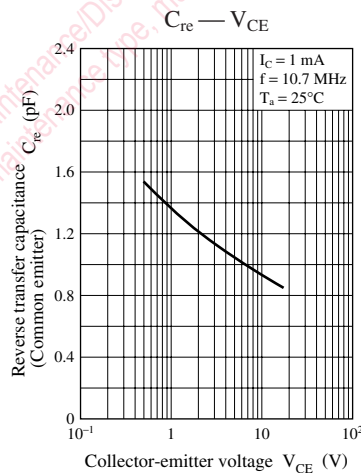
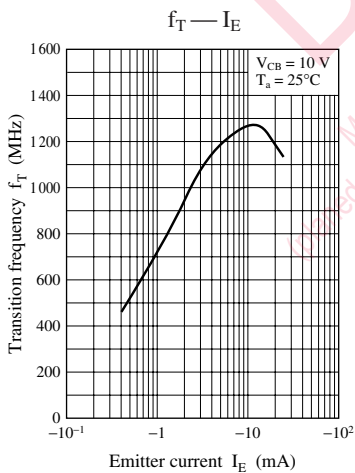
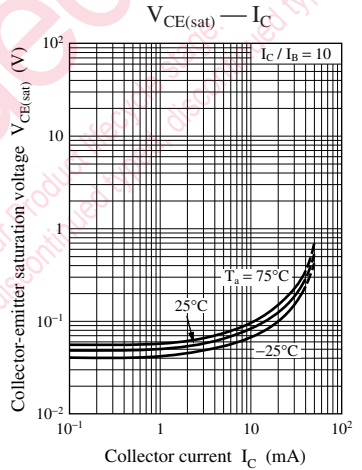
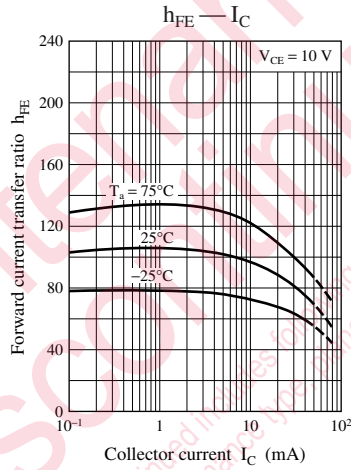
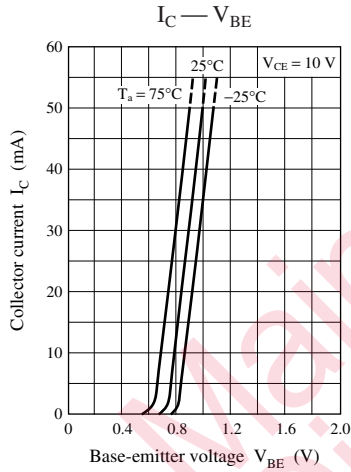
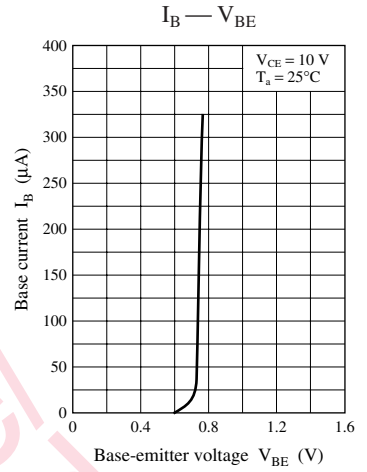
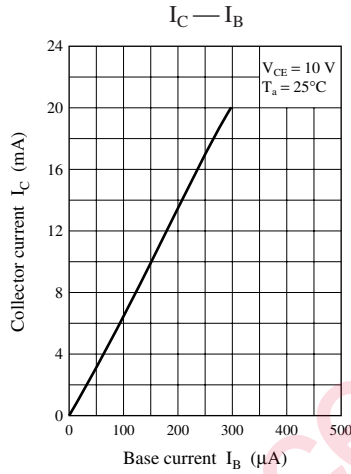
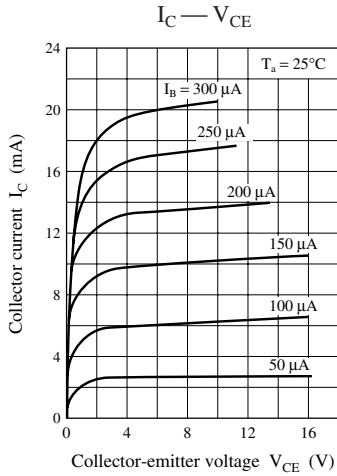
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = 10 \mu\text{A}, I_E = 0$	45			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 1 \text{mA}, I_B = 0$	35			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = 10 \mu\text{A}, I_C = 0$	4			V
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = 20 \text{V}, I_B = 0$			10	μA
Forward current transfer ratio	h_{FE}	$V_{CB} = 10 \text{V}, I_E = -10 \text{mA}$	20	50	100	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 20 \text{mA}, I_B = 2 \text{mA}$			0.5	V
Transition frequency	f_T	$V_{CB} = 10 \text{V}, I_E = -10 \text{mA}, f = 100 \text{MHz}$	300	500		MHz
Reverse transfer capacitance (Common emitter)	C_{re}	$V_{CB} = 10 \text{V}, I_E = -1 \text{mA}, f = 10.7 \text{MHz}$			1.5	pF
Power gain	G_P	$V_{CB} = 10 \text{V}, I_E = -10 \text{mA}, f = 58 \text{MHz}$	18			dB

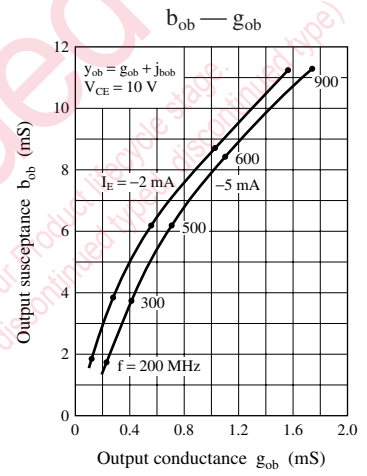
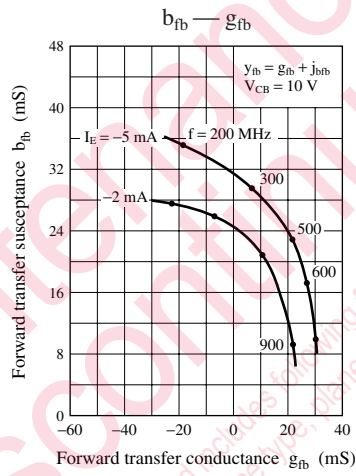
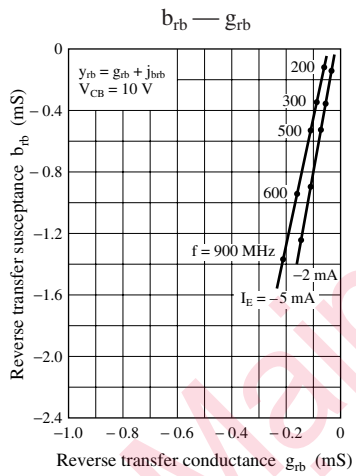
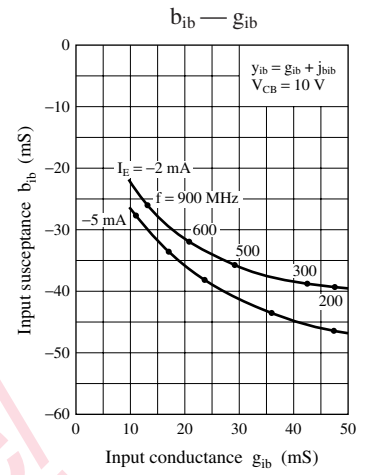
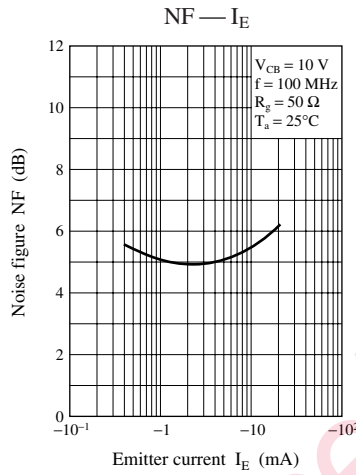
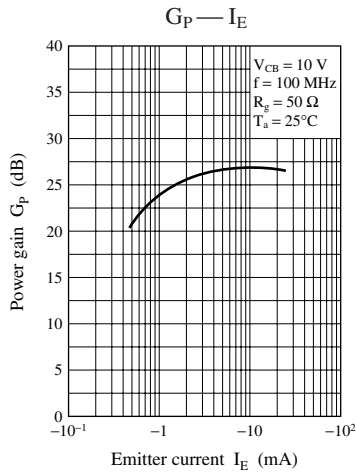
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

Common characteristics chart

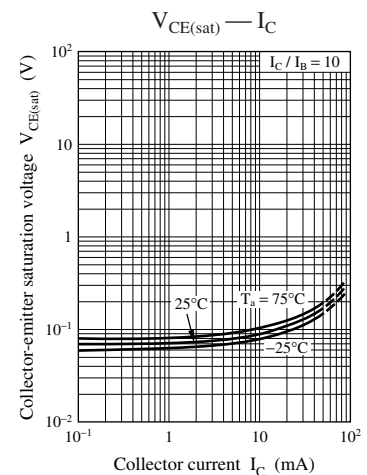
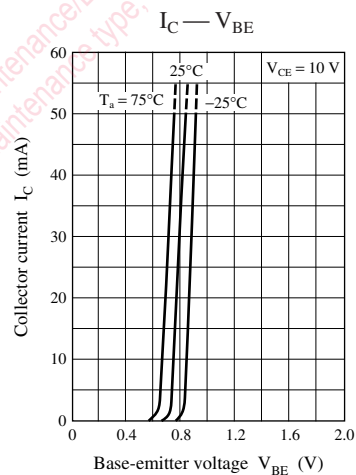
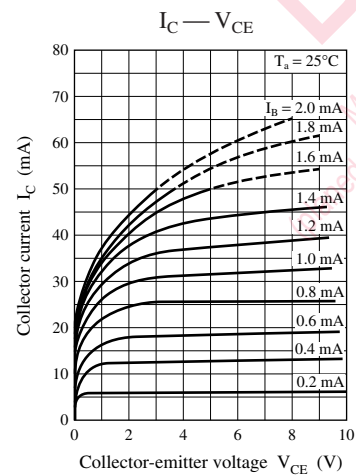


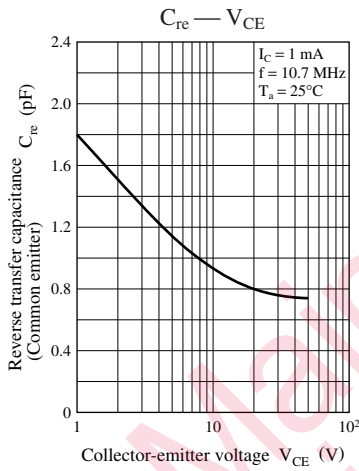
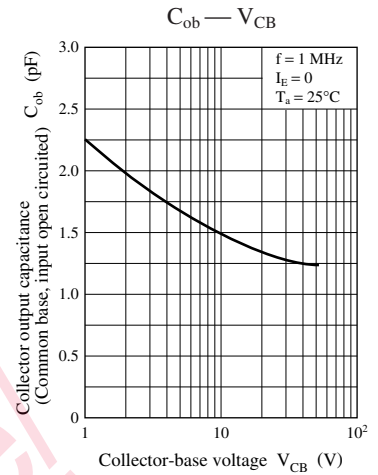
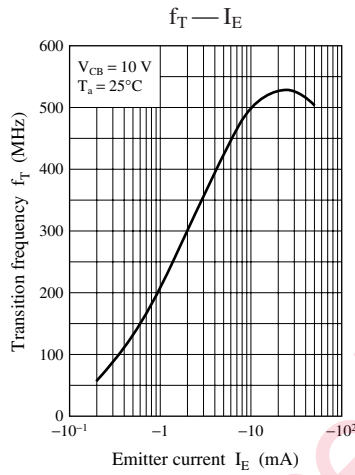
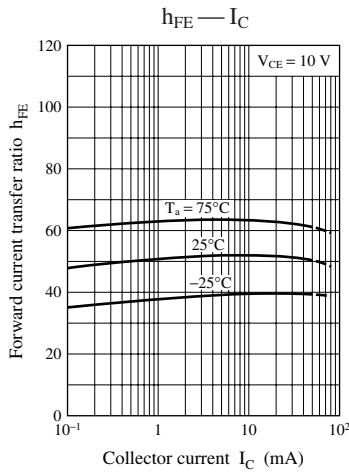
Characteristics charts of Tr1





Characteristics charts of Tr2





Maintenance/Discontinued

Maintenance/Discontinued includes following four Product lifecycle stage.
(planned maintenance type, maintenance type, planned discontinued type, discontinued type)

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