

NPOA547

Silicon NPN epitaxial planar type

For high-speed switching

■ Features

- SSS-Mini type package, reduction of the mounting area and assembly cost by one half
- Maximum package height (0.4 mm) contributes to develop thinner equipments

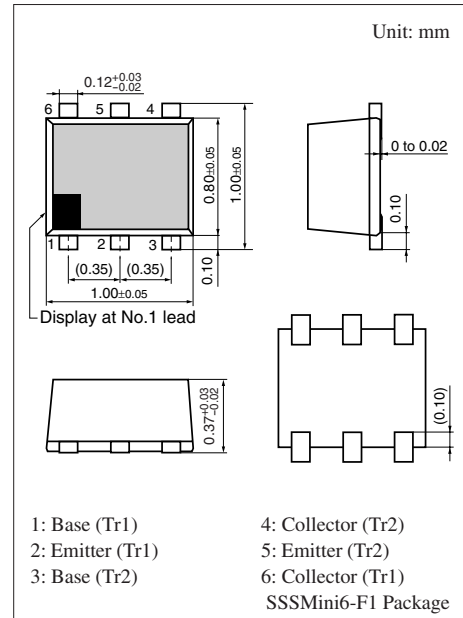
■ Basic Part Number

- 2SC5829 × 2

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

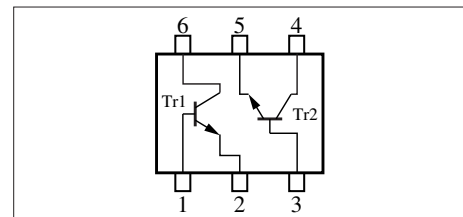
	Parameter	Symbol	Rating	Unit
Tr1	Collector-base voltage (Emitter open)	V_{CBO}	10	V
	Collector-emitter voltage (Base open)	V_{CEO}	7	V
	Emitter-base voltage (Collector open)	V_{EBO}	2	V
	Collector current	I_{C}	10	mA
Tr2	Collector-base voltage (Emitter open)	V_{CBO}	10	V
	Collector-emitter voltage (Base open)	V_{CEO}	7	V
	Emitter-base voltage (Collector open)	V_{EBO}	2	V
	Collector current	I_{C}	10	mA
Overall	Total power dissipation *	P_{T}	50	mW
	Junction temperature	T_{j}	125	$^\circ\text{C}$
	Storage temperature	T_{stg}	-55 to +125	$^\circ\text{C}$

Note) *: Measuring on substrate at 17 mm × 10 mm × 1 mm



Marking Symbol: 1R

Internal Connection



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

• Tr1

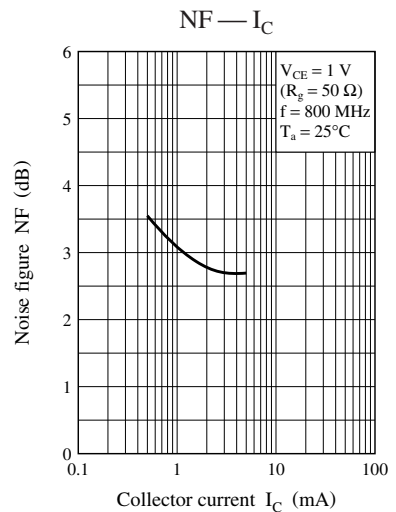
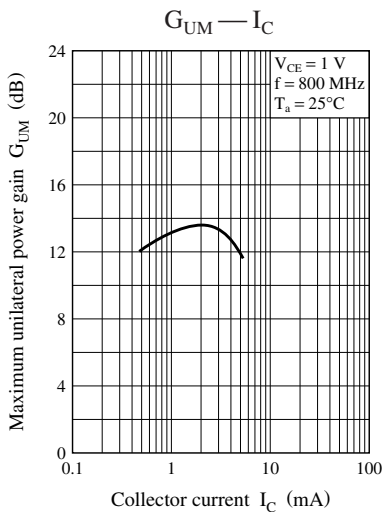
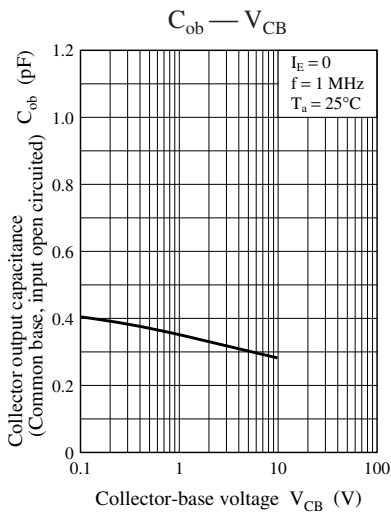
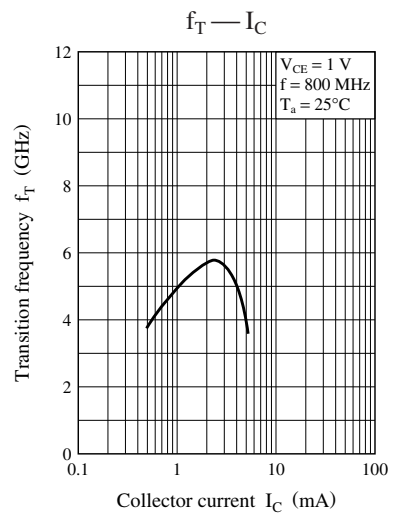
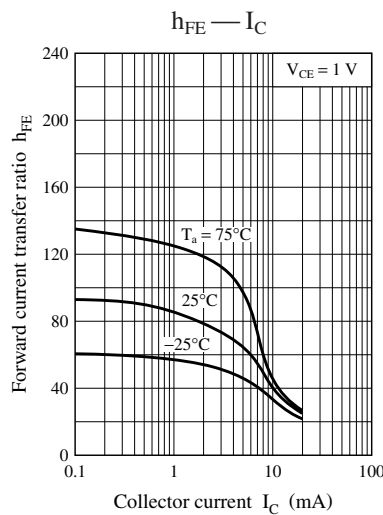
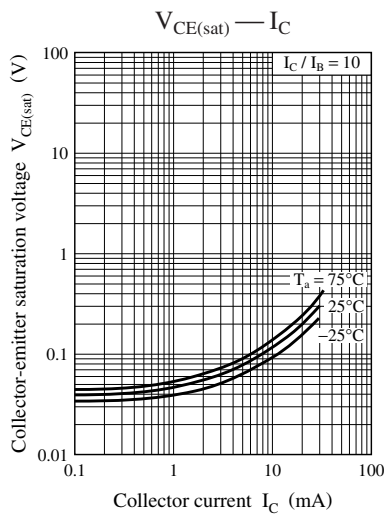
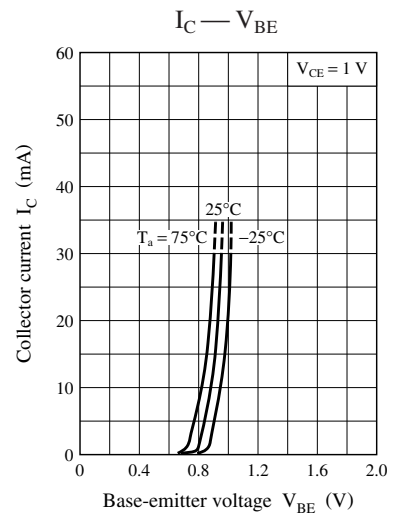
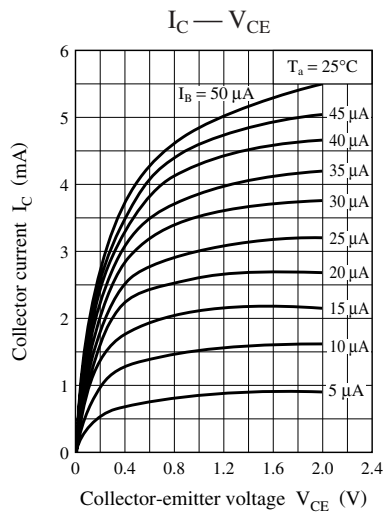
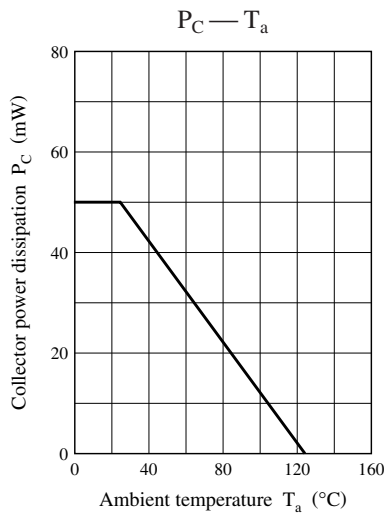
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 10\text{ V}, I_E = 0$			1	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 1.5\text{ V}, I_C = 0$			1	μA
Forward current transfer ratio	h_{FE}	$V_{CE} = 1\text{ V}, I_C = 1\text{ mA}$	100		200	—
Transition frequency	f_T	$V_{CE} = 1\text{ V}, I_C = 1\text{ mA}, f = 0.8\text{ GHz}$		4		GHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = 1\text{ V}, I_E = 0, f = 1\text{ MHz}$		0.4		pF
Forward transfer gain	$ S_{21e} ^2$	$V_{CE} = 1\text{ V}, I_C = 1\text{ mA}, f = 0.8\text{ GHz}$		6.0		dB
Maximum unilateral power gain	G_{UM}	$V_{CE} = 1\text{ V}, I_C = 1\text{ mA}, f = 0.8\text{ GHz}$		15		dB
Noise figure	NF	$V_{CE} = 1\text{ V}, I_C = 1\text{ mA}, f = 0.8\text{ GHz}$		3.5		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 cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 10\text{ V}, I_E = 0$			1	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 1.5\text{ V}, I_C = 0$			1	μA
Forward current transfer ratio	h_{FE}	$V_{CE} = 1\text{ V}, I_C = 1\text{ mA}$	80		200	—
Transition frequency	f_T	$V_{CE} = 1\text{ V}, I_C = 1\text{ mA}, f = 0.8\text{ GHz}$		4		GHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = 1\text{ V}, I_E = 0, f = 1\text{ MHz}$		0.4		pF
Forward transfer gain	$ S_{21e} ^2$	$V_{CE} = 1\text{ V}, I_C = 1\text{ mA}, f = 0.8\text{ GHz}$		6.0		dB
Maximum unilateral power gain	G_{UM}	$V_{CE} = 1\text{ V}, I_C = 1\text{ mA}, f = 0.8\text{ GHz}$		15		dB
Noise figure	NF	$V_{CE} = 1\text{ V}, I_C = 1\text{ mA}, f = 0.8\text{ GHz}$		3.5		dB

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



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