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2SC5019

Silicon NPN epitaxial planar type

For UHF band low-noise amplification

■ Features

- Low noise figure NF
- High maximum unilateral power gain G_{UM}
- High transition frequency f_T
- Mini Power type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing

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

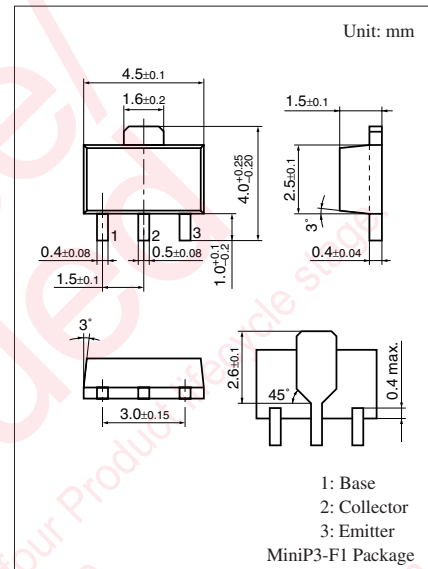
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	15	V
Collector-emitter voltage (Base open)	V_{CEO}	10	V
Emitter-base voltage (Collector open)	V_{EBO}	2	V
Collector current	I_C	80	mA
Collector power dissipation *	P_C	1	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Note) *: Copper plate at the collector is more than 1 cm^2 in area, 1.7 mm in thickness
Absolute maximum rating without heat sink for P_C is 0.5 W

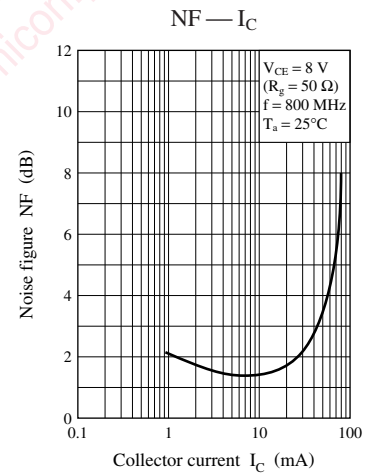
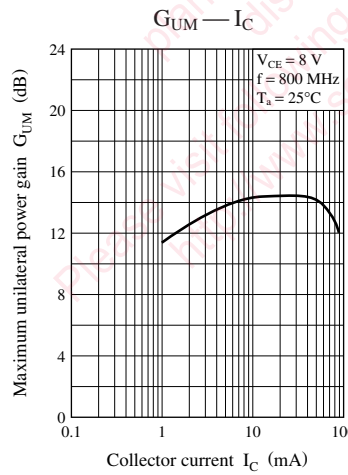
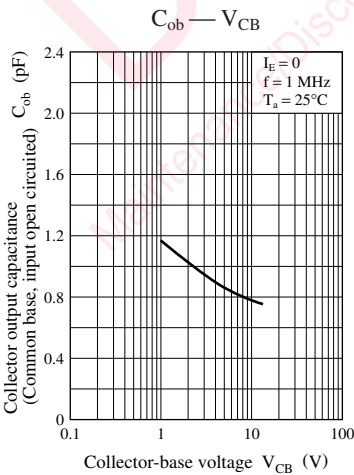
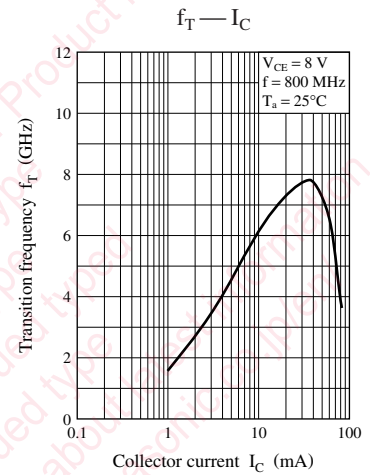
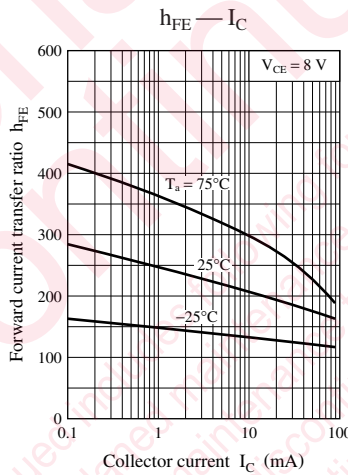
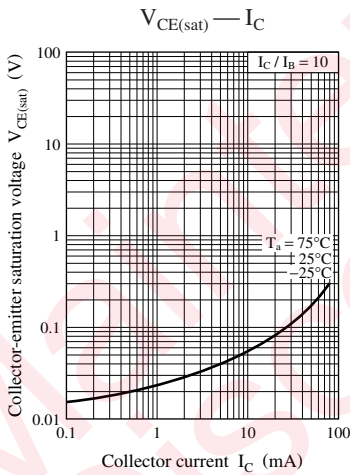
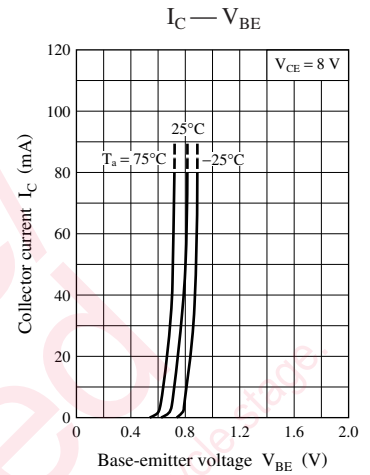
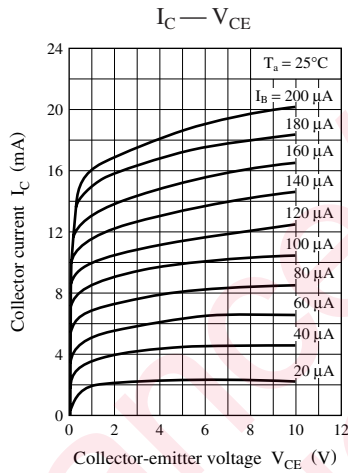
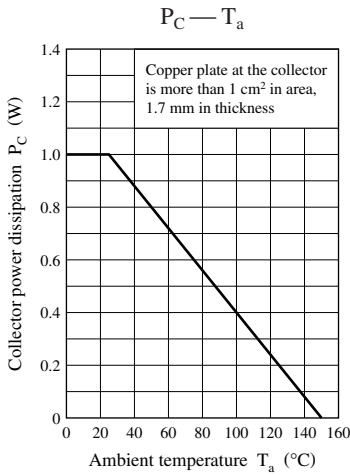
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = 10\ \mu\text{A}$, $I_E = 0$	15			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 100\ \mu\text{A}$, $I_B = 0$	10			V
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}	$V_{EB} = 2\ \text{V}$, $I_C = 0$			1	μA
Forward current transfer ratio	h_{FE}	$V_{CE} = 8\ \text{V}$, $I_C = 20\ \text{mA}$	80		250	—
Transition frequency	f_T	$V_{CE} = 8\ \text{V}$, $I_C = 20\ \text{mA}$, $f = 0.8\ \text{GHz}$	5	6		GHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = 10\ \text{V}$, $I_E = 0$, $f = 1\ \text{MHz}$		0.9	1.2	pF
Forward transfer gain	$ S_{21e} ^2$	$V_{CE} = 8\ \text{V}$, $I_C = 20\ \text{mA}$, $f = 0.8\ \text{GHz}$	7.5	10.0		dB
Maximum unilateral power gain	G_{UM}	$V_{CE} = 8\ \text{V}$, $I_C = 20\ \text{mA}$, $f = 0.8\ \text{GHz}$		11.5		dB
Noise figure	NF	$V_{CE} = 8\ \text{V}$, $I_C = 7\ \text{mA}$, $f = 0.8\ \text{GHz}$		1.7		dB

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



Marking Symbol: 1W



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