

2SC5019

Silicon NPN epitaxial planar type

For UHF band low-noise amplification

Features

- Low noise figure NF.
- High gain.
- 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.

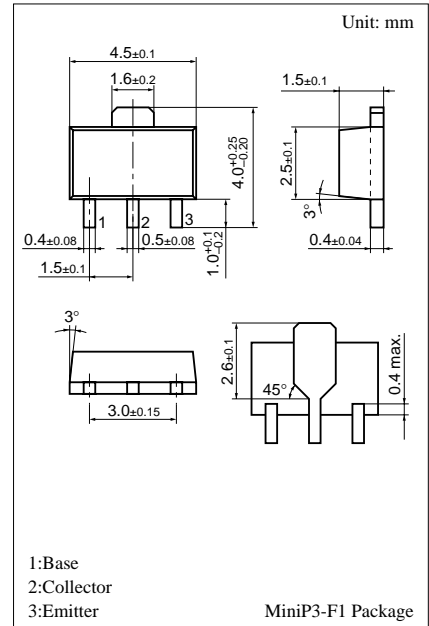
Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	15	V
Collector to emitter voltage	V_{CEO}	10	V
Emitter to base voltage	V_{EBO}	2	V
Collector current	I_C	80	mA
Collector power dissipation	P_C^*	1	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 ~ +150	°C

* Printed circuit board: Copper foil area of 1cm² or more, and the board thickness of 1.7mm for the collector portion

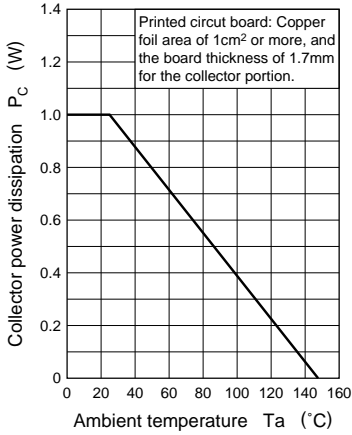
Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 10V, I_E = 0$			1	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 2V, I_C = 0$			1	μA
Collector to base voltage	V_{CBO}	$I_C = 10\mu A, I_E = 0$	15			V
Collector to emitter voltage	V_{CEO}	$I_C = 100\mu A, I_B = 0$	10			V
Forward current transfer ratio	h_{FE}	$V_{CE} = 8V, I_C = 20mA$	80		250	
Transition frequency	f_T	$V_{CE} = 8V, I_C = 20mA, f = 800MHz$	5	6		GHz
Collector output capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$		0.9	1.2	pF
Foward transfer gain	$ S_{21e} ^2$	$V_{CE} = 8V, I_C = 20mA, f = 800MHz$	7.5	10		dB
Maximum unilateral power gain	GUM	$V_{CE} = 8V, I_C = 20mA, f = 800MHz$		11.5		dB
Noise figure	NF	$V_{CE} = 8V, I_C = 20mA, f = 800MHz$		1.7		dB

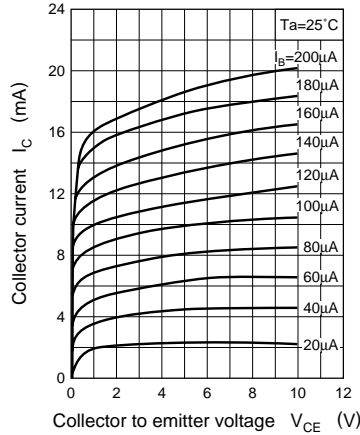


Marking symbol : 1W

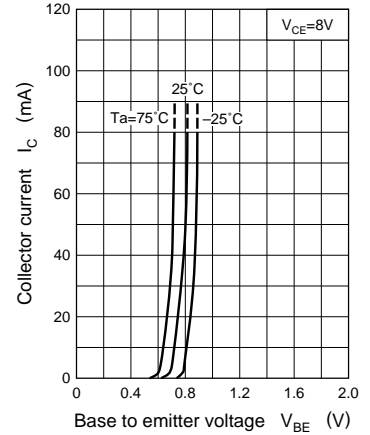
$P_C - T_a$



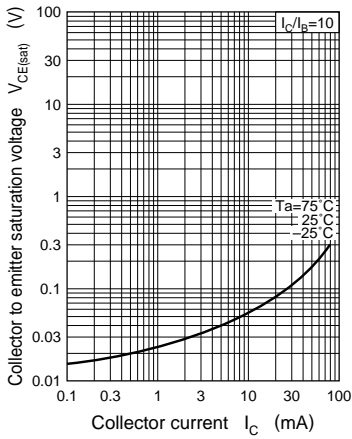
$I_C - V_{CE}$



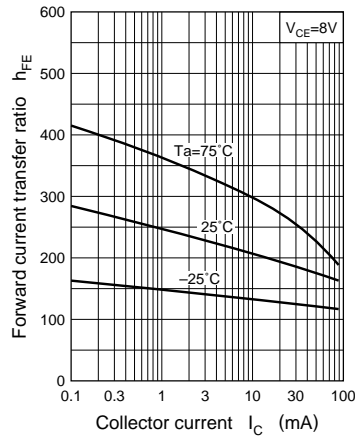
$I_C - V_{BE}$



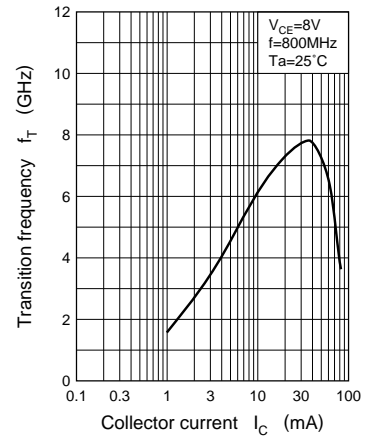
$V_{CE(sat)} - I_C$



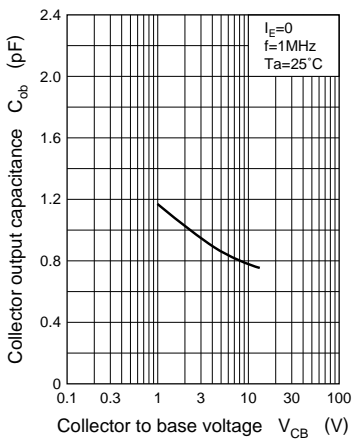
$h_{FE} - I_C$



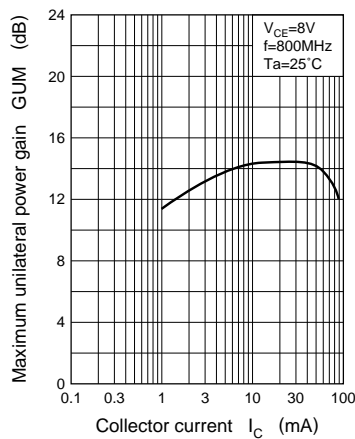
$f_T - I_C$



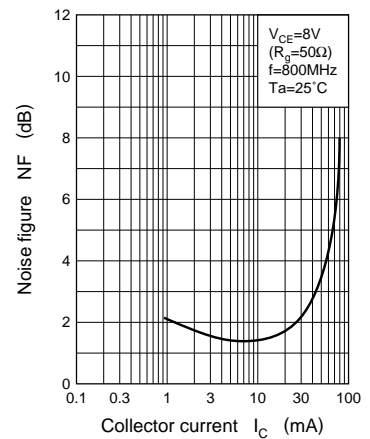
$C_{ob} - V_{CB}$



$GUM - I_C$



$NF - I_C$



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