

2SC3829

Silicon NPN epitaxial planar type

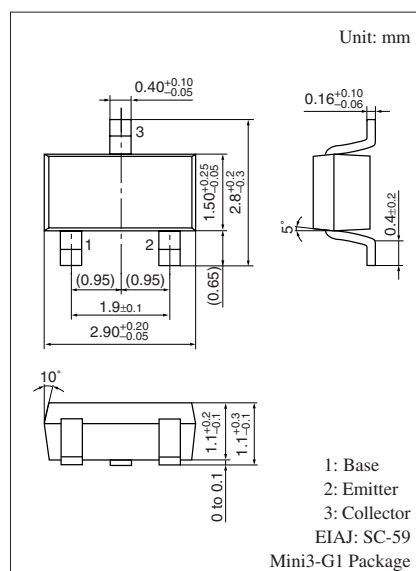
For UHF band low-noise amplification

■ Features

- Low noise figure NF
- High gain
- High forward transfer gain $|S_{21e}|^2$
- Mini 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	200	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

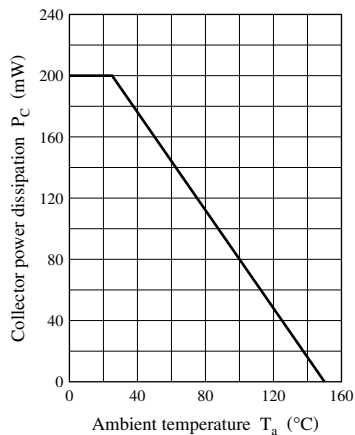
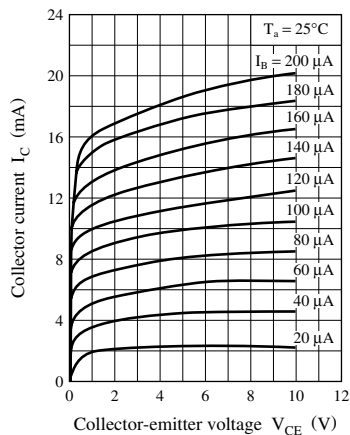
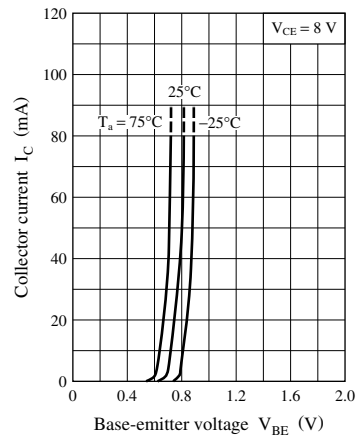
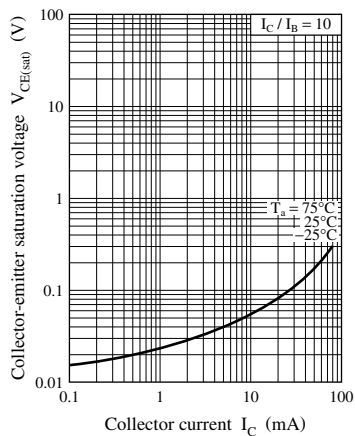
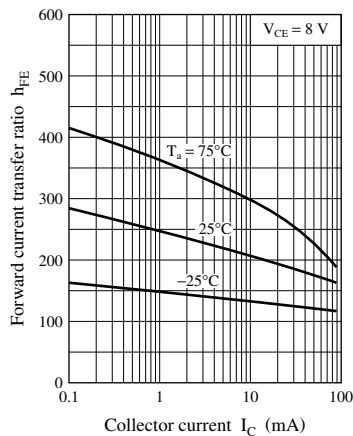
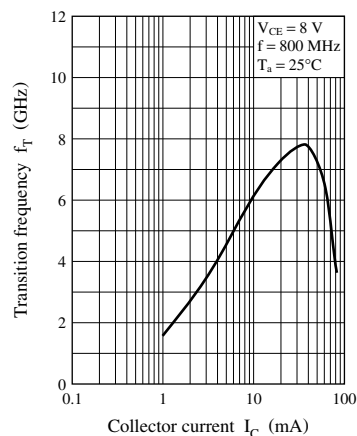
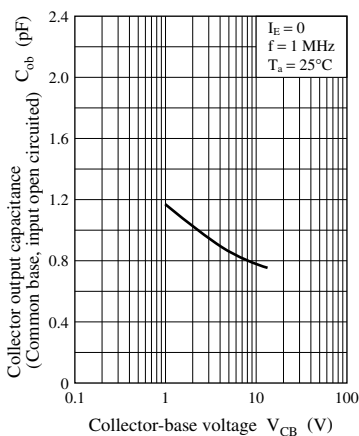
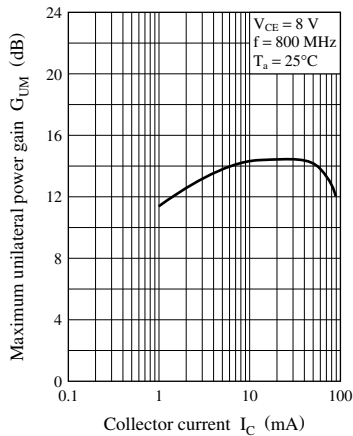
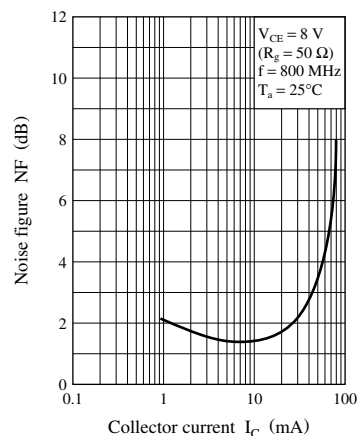


Marking Symbol: 3M

■ 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}	$V_{CE} = 8\ \text{V}, I_C = 20\ \text{mA}$	50	150	300	—
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}	$V_{CB} = 10\ \text{V}, I_E = 0, f = 1\ \text{MHz}$		0.7	1.2	pF
Forward transfer gain	$ S_{21e} ^2$	$V_{CE} = 8\ \text{V}, I_C = 20\ \text{mA}, f = 0.8\ \text{GHz}$	10.0	13.5		dB
Maximum unilateral power gain	G_{UM}	$V_{CE} = 8\ \text{V}, I_C = 20\ \text{mA}, f = 0.8\ \text{GHz}$		15		dB
Noise figure	NF	$V_{CE} = 8\ \text{V}, I_C = 20\ \text{mA}, f = 0.8\ \text{GHz}$			2	dB

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

$P_C - T_a$  $I_C - V_{CE}$  $I_C - V_{BE}$  $V_{CE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_C$  $C_{ob} - V_{CB}$  $G_{UM} - I_C$  $NF - I_C$ 

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