

# 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

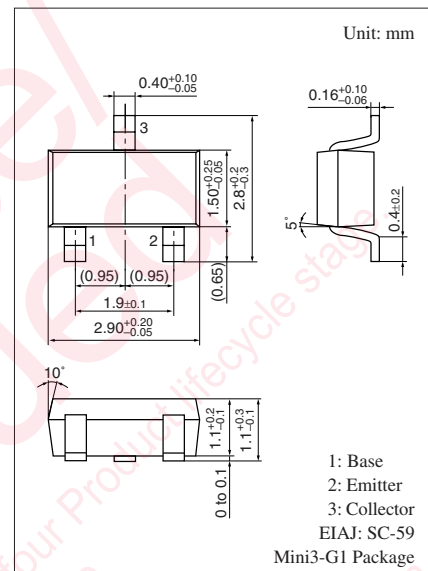
### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{\text{CBO}}$	15	V
Collector-emitter voltage (Base open)	$V_{\text{CEO}}$	10	V
Emitter-base voltage (Collector open)	$V_{\text{EBO}}$	2	V
Collector current	$I_{\text{C}}$	80	mA
Collector power dissipation	$P_{\text{C}}$	200	mW
Junction temperature	$T_{\text{j}}$	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$

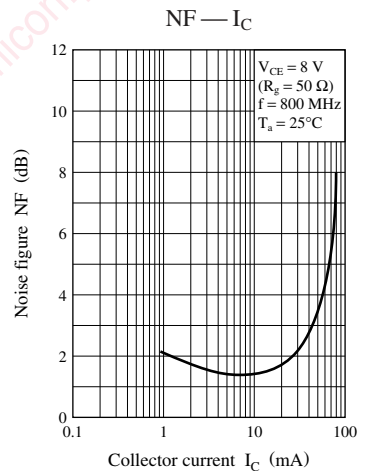
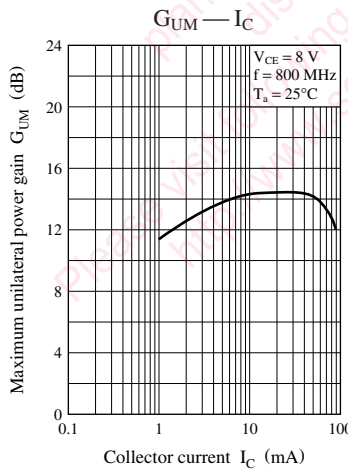
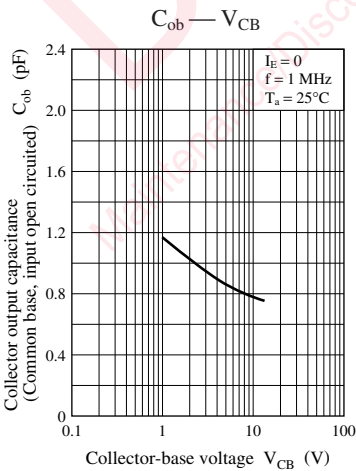
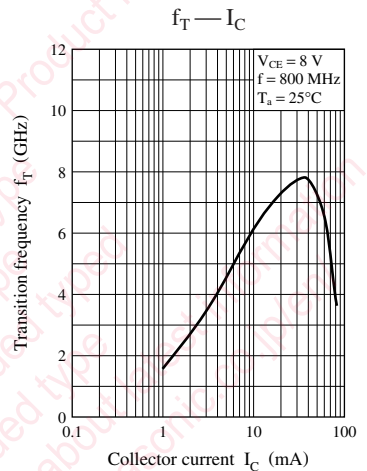
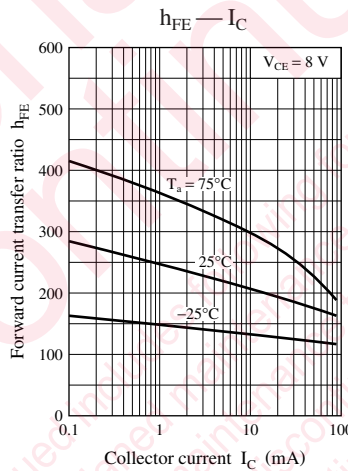
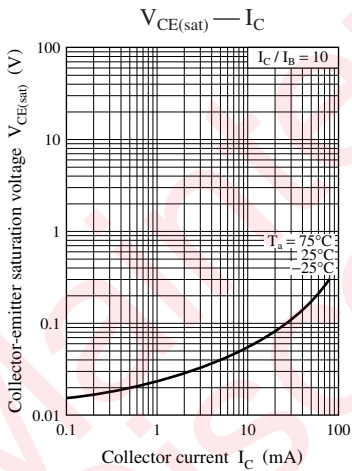
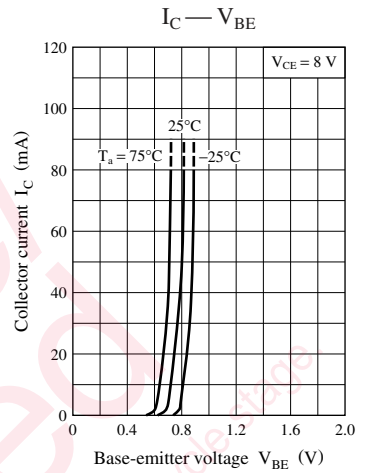
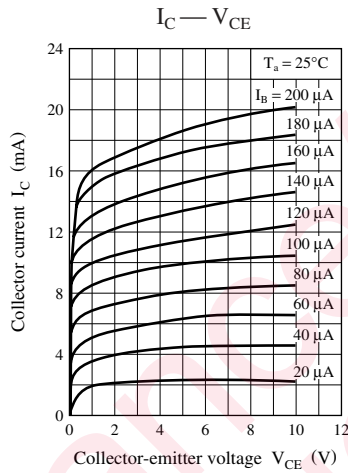
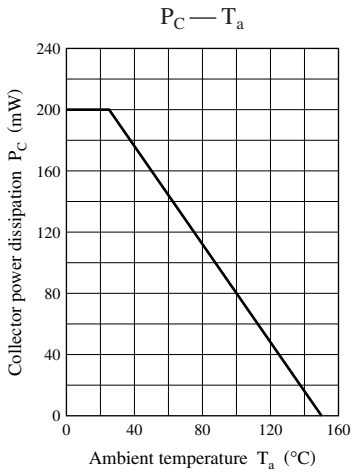
### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	$V_{\text{CBO}}$	$I_{\text{C}} = 10 \mu\text{A}, I_{\text{E}} = 0$	15			V
Collector-emitter voltage (Base open)	$V_{\text{CEO}}$	$I_{\text{C}} = 100 \mu\text{A}, I_{\text{B}} = 0$	10			V
Collector-base cutoff current (Emitter open)	$I_{\text{CBO}}$	$V_{\text{CB}} = 10 \text{V}, I_{\text{E}} = 0$			1	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{\text{EBO}}$	$V_{\text{EB}} = 2 \text{V}, I_{\text{C}} = 0$			1	$\mu\text{A}$
Forward current transfer ratio	$h_{\text{FE}}$	$V_{\text{CE}} = 8 \text{V}, I_{\text{C}} = 20 \text{mA}$	50	150	300	—
Transition frequency	$f_{\text{T}}$	$V_{\text{CE}} = 8 \text{V}, I_{\text{C}} = 20 \text{mA}, f = 0.8 \text{GHz}$	5	6		GHz
Collector output capacitance (Common base, input open circuited)	$C_{\text{ob}}$	$V_{\text{CB}} = 10 \text{V}, I_{\text{E}} = 0, f = 1 \text{MHz}$		0.7	1.2	pF
Forward transfer gain	$ S_{21e} ^2$	$V_{\text{CE}} = 8 \text{V}, I_{\text{C}} = 20 \text{mA}, f = 0.8 \text{GHz}$	10.0	13.5		dB
Maximum unilateral power gain	$G_{\text{UM}}$	$V_{\text{CE}} = 8 \text{V}, I_{\text{C}} = 20 \text{mA}, f = 0.8 \text{GHz}$		15		dB
Noise figure	NF	$V_{\text{CE}} = 8 \text{V}, I_{\text{C}} = 20 \text{mA}, f = 0.8 \text{GHz}$			2	dB

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



Marking Symbol: 3M



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