

# 2SC5829

## Silicon NPN epitaxial planar type

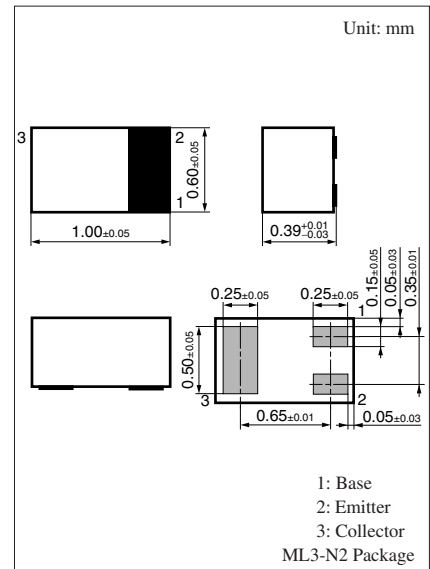
For high speed switching

### ■ Features

- Allowing the small current and low voltage operation
- High transition frequency  $f_T$
- Suitable for high-density mounting and downsizing of the equipment for Ultraminiature leadless package  
0.6 mm × 1.0 mm (height 0.39 mm)

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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{\text{CBO}}$	10	V
Collector-emitter voltage (Base open)	$V_{\text{CEO}}$	7	V
Emitter-base voltage (Collector open)	$V_{\text{EBO}}$	2	V
Collector current	$I_{\text{C}}$	10	mA
Collector power dissipation	$P_{\text{C}}$	50	mW
Junction temperature	$T_{\text{j}}$	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$



Marking Symbol: X

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
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)	$I_{\text{EBO}}$	$V_{\text{EB}} = 1.5 \text{ V}, I_{\text{C}} = 0$			1	$\mu\text{A}$
Forward current transfer ratio	$h_{\text{FE}}$	$V_{\text{CE}} = 1 \text{ V}, I_{\text{C}} = 1 \text{ mA}$	100		200	—
Transition frequency	$f_{\text{T}}$	$V_{\text{CE}} = 1 \text{ V}, I_{\text{C}} = 1 \text{ mA}, f = 0.8 \text{ GHz}$		4		GHz
Collector output capacitance (Common base, input open circuited)	$C_{\text{ob}}$	$V_{\text{CB}} = 1 \text{ V}, I_{\text{E}} = 0, f = 1 \text{ MHz}$		0.4		pF
Forward transfer gain	$ S_{21e} ^2$	$V_{\text{CE}} = 1 \text{ V}, I_{\text{C}} = 1 \text{ mA}, f = 0.8 \text{ GHz}$		6		dB
Maximum unilateral power gain	$G_{\text{UM}}$	$V_{\text{CE}} = 1 \text{ V}, I_{\text{C}} = 1 \text{ mA}, f = 0.8 \text{ GHz}$		15		dB
Noise figure	NF	$V_{\text{CE}} = 1 \text{ V}, I_{\text{C}} = 1 \text{ mA}, f = 0.8 \text{ GHz}$		3.5		dB

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

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