

# 2SC5839

## Silicon NPN epitaxial planar type

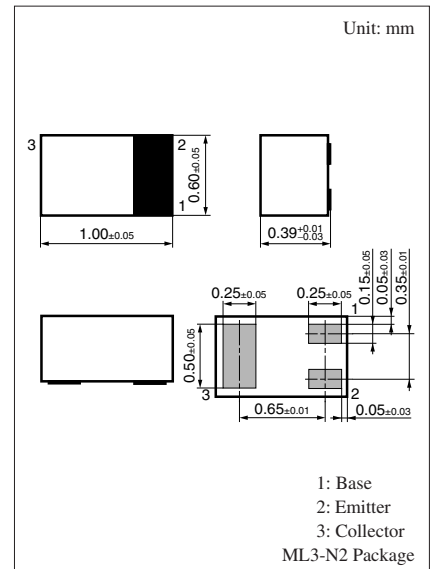
For low-voltage high-frequency amplification

### ■ Features

- 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)	$V_{CBO}$	9	V
Collector-emitter voltage (Base open)	$V_{CEO}$	6	V
Emitter-base voltage (Collector open)	$V_{EBO}$	2	V
Collector current	$I_C$	30	mA
Collector power dissipation	$P_C$	100	mW
Junction temperature	$T_j$	125	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +125	$^\circ\text{C}$

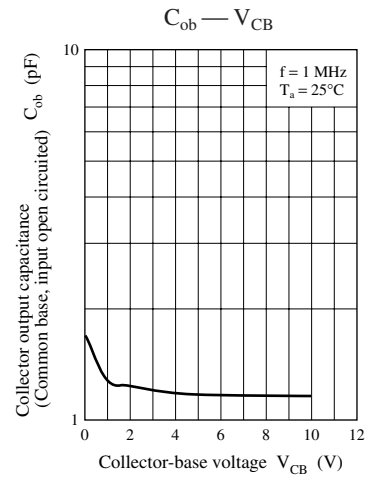
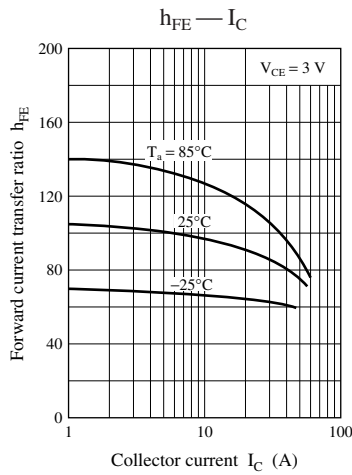
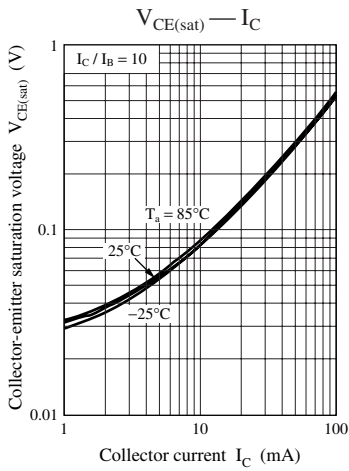
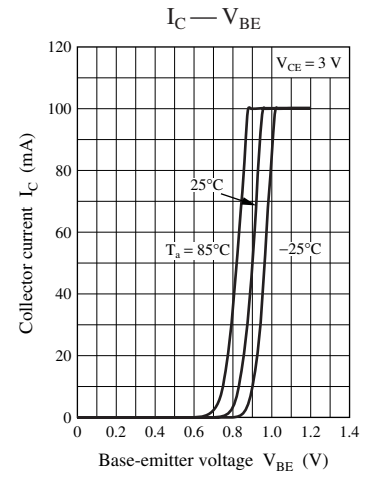
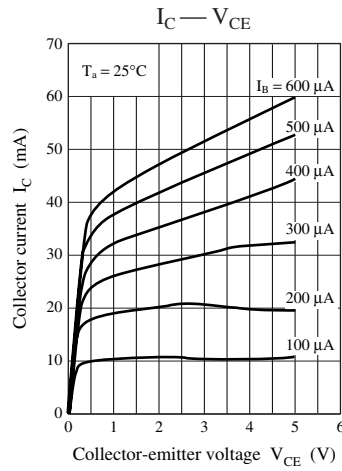
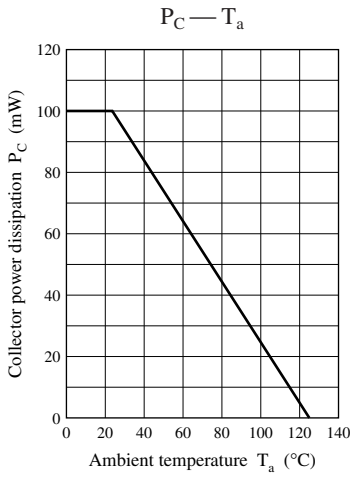


Marking Symbol: 1N

### ■ 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)	$I_{CBO}$	$V_{CB} = 5\text{ V}, I_E = 0$			1	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = 1\text{ V}, I_C = 0$			1	$\mu\text{A}$
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 3\text{ V}, I_C = 10\text{ mA}$	40	100	160	—
Transition frequency	$f_T$	$V_{CE} = 3\text{ V}, I_C = 10\text{ mA}, f = 1.5\text{ GHz}$		10		GHz
Forward transfer gain	$ S_{21e} ^2$	$V_{CE} = 0.3\text{ V}, I_C = 1\text{ mA}, f = 0.9\text{ GHz}$		6.5		dB
Noise figure	NF	$V_{CE} = 0.3\text{ V}, I_C = 1\text{ mA}, f = 0.9\text{ GHz}$		1.7		dB
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 3\text{ V}, I_E = 0, f = 1\text{ MHz}$		0.4	0.7	pF

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



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