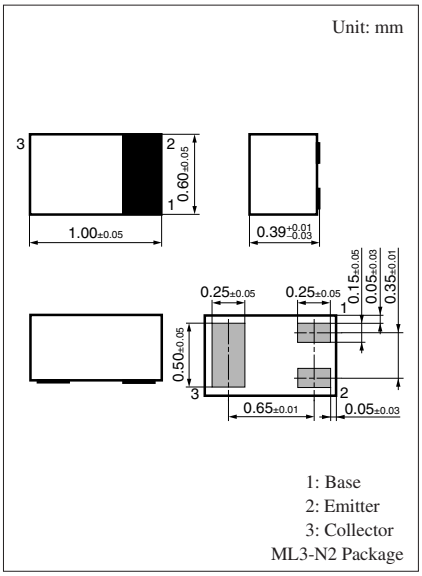
2SC5839

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)



Marking Symbol: 1N

■ Absolute Maximum Ratings $T_a = 25°C$

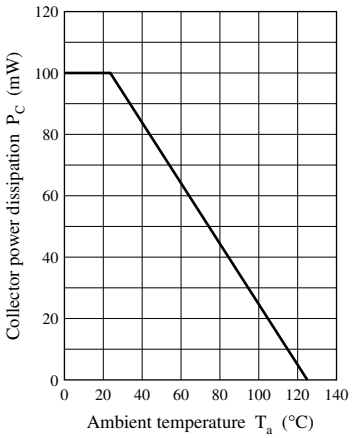
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	9	V
Collector-emitter voltage (Base open)	V_{CEO}	6	V
Emitter-base voltage (Collector open)	V_{EBO}	2	V
Collector current	I_C	30	mA
Collector power dissipation	P_C	100	mW
Junction temperature	T_j	125	°C
Storage temperature	T_{stg}	−55 to +125	°C

■ Electrical Characteristics $T_a = 25°C \pm 3°C$

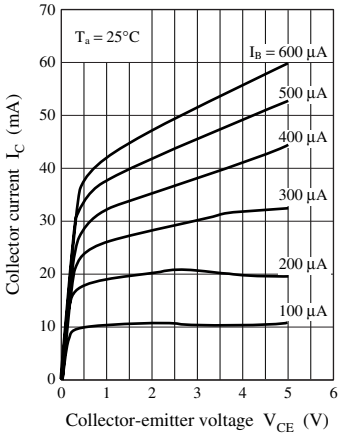
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 5 V, I_E = 0			1	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	V_{EB} = 1 V, I_C = 0			1	μA
Forward current transfer ratio	h_{FE}	V_{CE} = 3 V, I_C = 10 mA	40	100	160	—
Transition frequency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

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

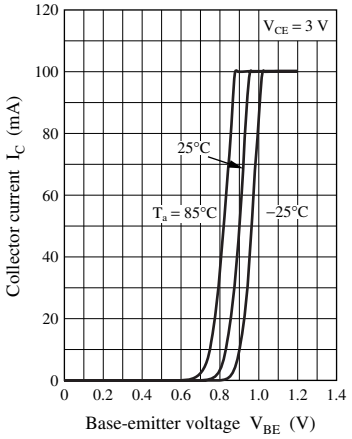
P_C — T_a



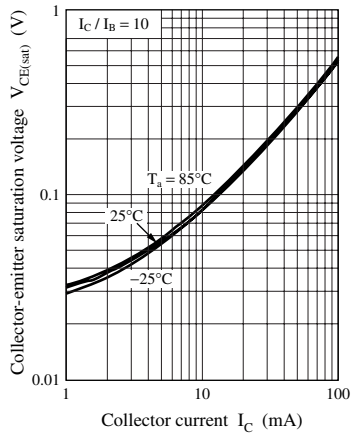
I_C — V_{CE}



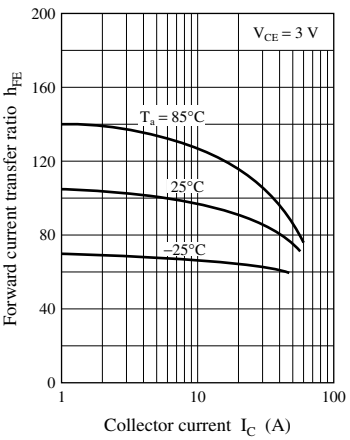
I_C — V_{BE}



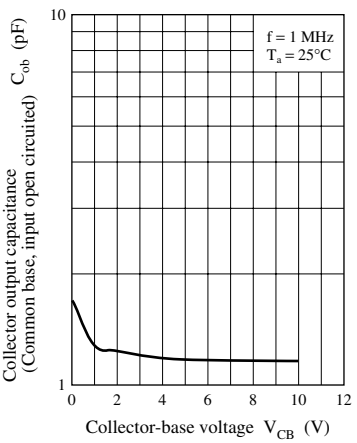
$V_{CE(sat)}$ — I_C



h_{FE} — I_C



C_{ob} — V_{CB}



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