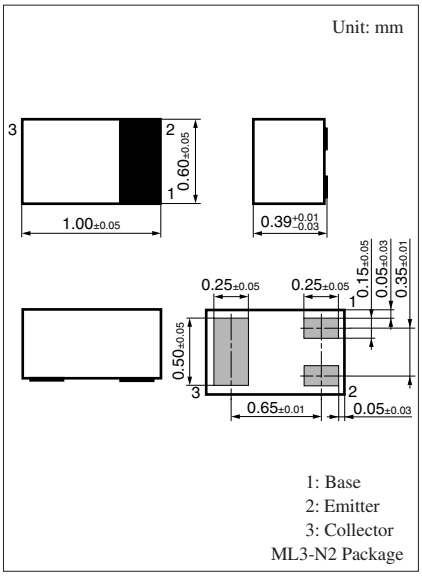
2SC5838

Silicon NPN epitaxial planar type

For UHF band low-noise amplification

■ Features

- 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: 1F

■ Absolute Maximum Ratings $T_a = 25°C$

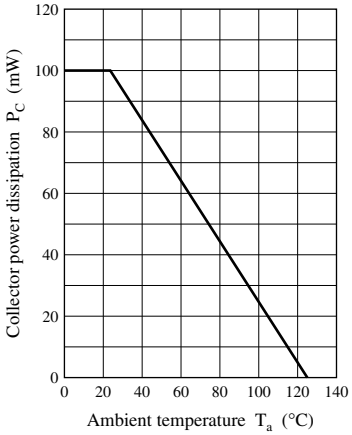
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	15	V
Collector-emitter voltage (Base open)	V_{CEO}	10	V
Emitter-base voltage (Collector open)	V_{EBO}	2	V
Collector current	I_C	80	mA
Collector power dissipation	P_C	100	mW
Junction temperature	T_j	125	°C
Storage temperature	T_{stg}	−55 to +125	°C

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

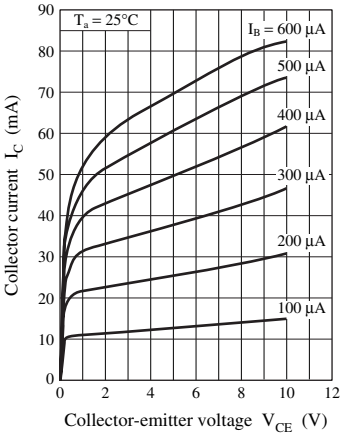
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	I_C = 10 µA, I_E = 0	15			V
Collector-emitter voltage (Base open)	V_{CEO}	I_C = 100 µA, I_B = 0	10			V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 10 V, I_E = 0			1	µA
Emitter-base cutoff current (Collector open)	I_{EBO}	V_{EB} = 2 V, I_C = 0			1	µA
Forward current transfer ratio	h_{FE}	V_{CE} = 8 V, I_C = 20 mA	110		250	—
Forward transfer gain	$\|S_{21e}\|^2$	V_{CE} = 8 V, I_C = 20 mA, f = 800 MHz	7.5	10.0		dB
Noise figure	NF	V_{CE} = 8 V, I_C = 20 mA, f = 800 MHz		1.7		dB
Maximum unilateral power gain	G_{UM}	V_{CE} = 8 V, I_C = 20 mA, f = 800 MHz		11.5		dB
Collector output capacitance (Common base, input open circuited)	C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz		0.9	1.2	pF
Transition frequency	f_T	V_{CE} = 8 V, I_C = 20 mA, f = 800 MHz	5.0	6.0		GHz

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

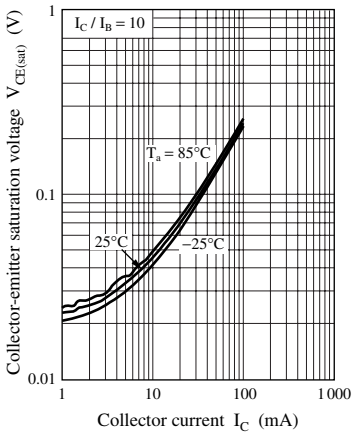
P_C — T_a



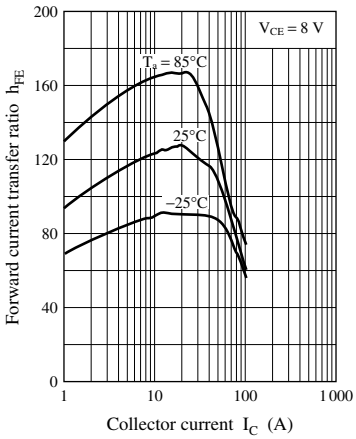
I_C — V_{CE}



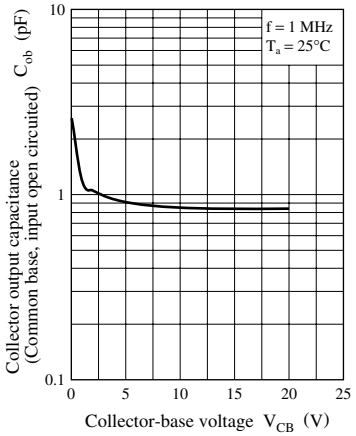
$V_{CE(sat)}$ — I_C



h_{FE} — I_C



C_{ob} — V_{CB}



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