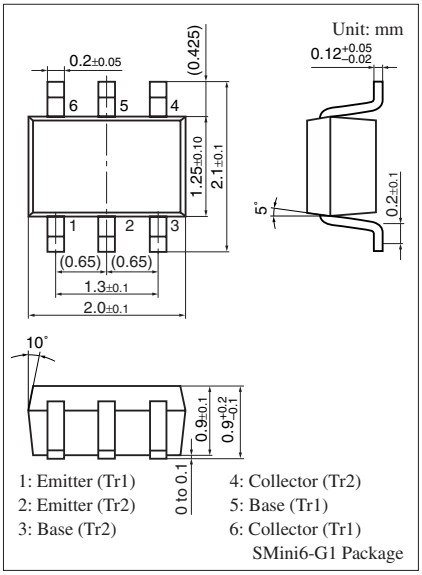
XP06543

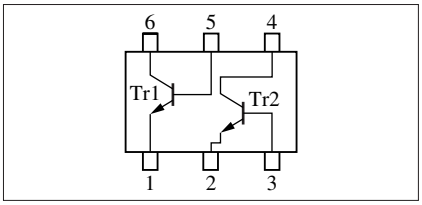
Silicon NPN epitaxial planar type

For low noise amplification



Marking Symbol: 9Y

Internal Connection



■ Features

- High transition frequency f_T
- Two elements incorporated into one package (Each transistor is separated)

■ Basic Part Number

- 2SC3904 × 2

■ Absolute Maximum Ratings $T_a = 25°C$

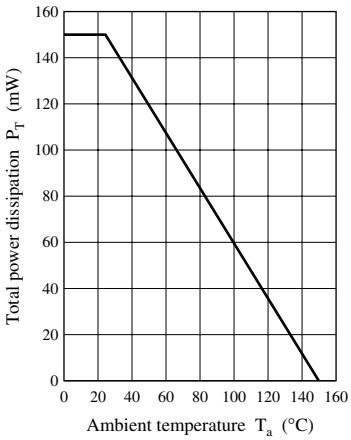
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	15	V
Collector-emitter voltage (Base open)	V_{CEO}	10	V
Emitter-base voltage (Collector open)	V_{EBO}	2	V
Collector current	I_C	65	mA
Total power dissipation	P_T	150	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

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

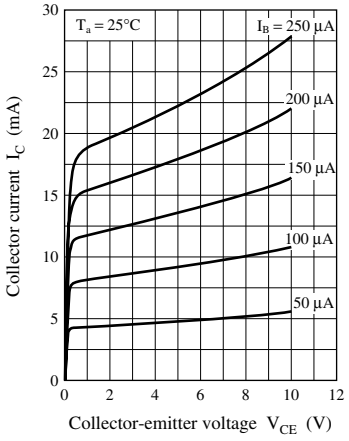
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 10 V, I_E = 0			1	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	V_{EB} = 1 V, I_C = 0			1	μA
Forward current transfer ratio *	h_{FE}	V_{CE} = 8 V, I_C = 20 mA	50	120	300	—
Transition frequency *	f_T	V_{CE} = 8 V, I_C = 20 mA, f = 1.5 GHz	7.0	8.5		GHz
Noise figure	NF	V_{CE} = 8 V, I_C = 7 mA, f = 1.5 GHz		2.2	3.0	dB
Collector output capacitance (Common base, input open circuited)	C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz		0.6	1.0	pF
Forward transfer gain *	$\lvert S_{21e} \rvert^2$	V_{CE} = 8 V, I_C = 20 mA, f = 1.5 GHz	7	9		dB
Maximum unilateral power gain *	G_{UM}	V_{CE} = 8 V, I_C = 20 mA, f = 1.5 GHz		10		dB

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. *: Pulse measurement

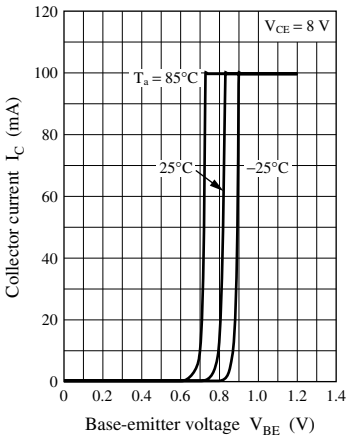
P_T — T_a



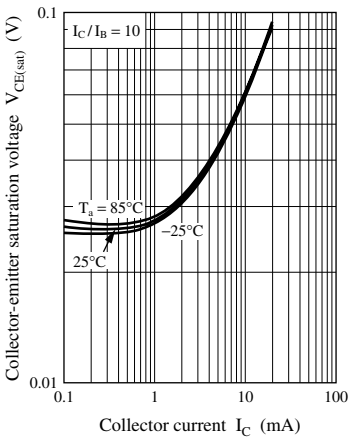
I_C — V_{CE}



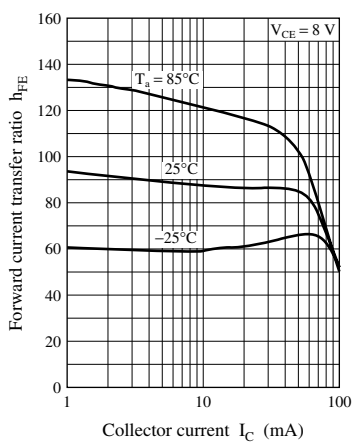
I_C — V_{BE}



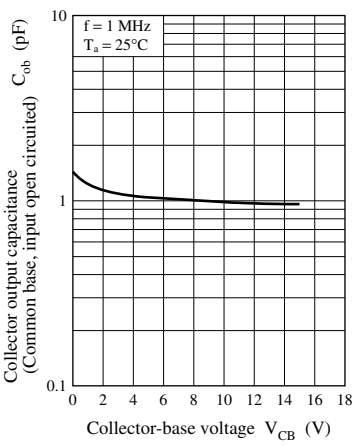
$V_{CE(sat)}$ — I_C



h_{FE} — I_C



C_{ob} — V_{CB}



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