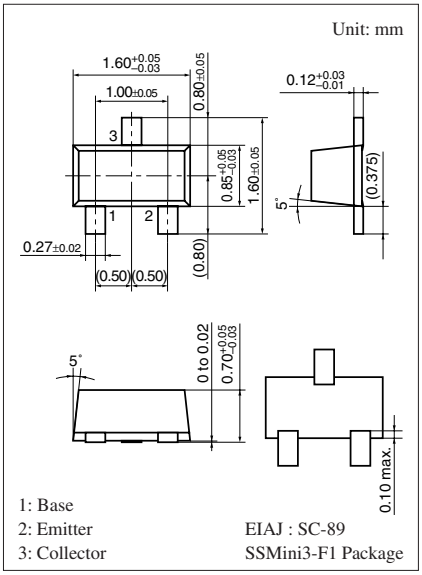
2SC5295J

Silicon NPN epitaxial planar type

For 2 GHz band low-noise amplification



Marking Symbol: 3S

■ Features

- High transition frequency f_T
- Low collector output capacitance C_{ob}
- SS-mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	15	V
Collector to emitter voltage	V_{CEO}	10	V
Emitter to base voltage	V_{EBO}	2	V
Collector current	I_C	65	mA
Collector power dissipation	P_C	125	mW
Junction temperature	T_j	125	°C
Storage temperature	T_{stg}	−55 to +125	°C

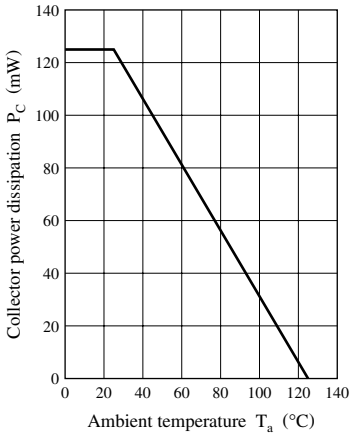
■ Electrical Characteristics $T_a = 25°C \pm 3°C$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 10 V, I_E = 0			1	μA
Emitter cutoff current	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		170	
Gain bandwidth product	f_T	V_{CE} = 8 V, I_C = 15 mA, f = 1.5 GHz	7.0	8.5		GHz
Collector output capacitance	C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz		0.6	1.0	pF
Forward transfer gain	$\|S_{21e}\|^2$	V_{CE} = 8 V, I_C = 15 mA, f = 1.5 GHz	7	9		dB
Maximum unilateral power gain	GUM	V_{CE} = 8 V, I_C = 15 mA, f = 1.5 GHz		10		dB
Noise figure	NF	V_{CE} = 8 V, I_C = 7 mA, f = 1.5 GHz		2.2	3.0	dB

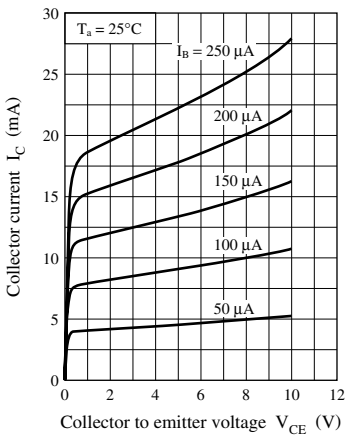
Note) *: h_{FE} rank classification

Rank	Q	R
h_{FE}	50 to 120	100 to 170

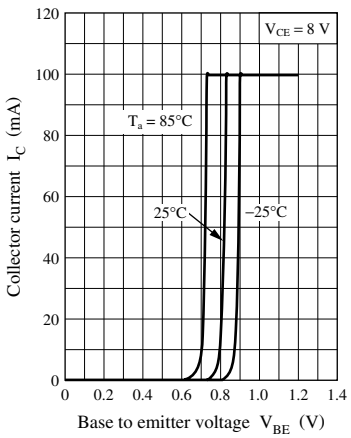
P_C — T_a



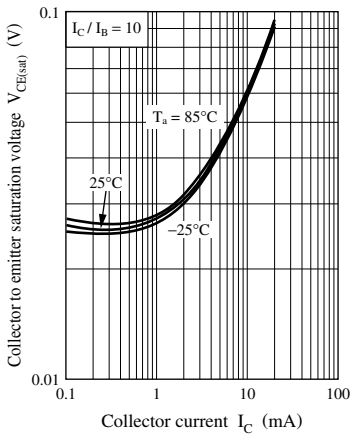
I_C — V_{CE}



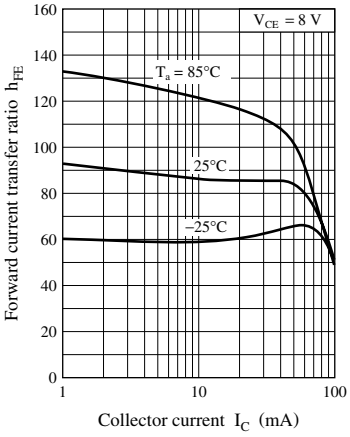
I_C — V_{BE}



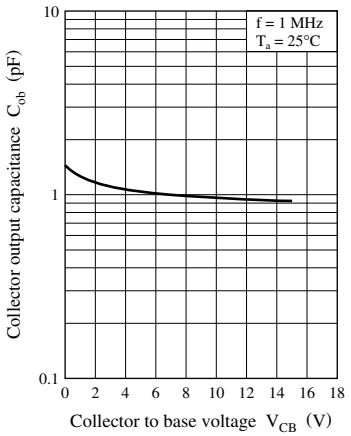
$V_{CE(sat)}$ — I_C



h_{FE} — I_C



C_{ob} — V_{CB}



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