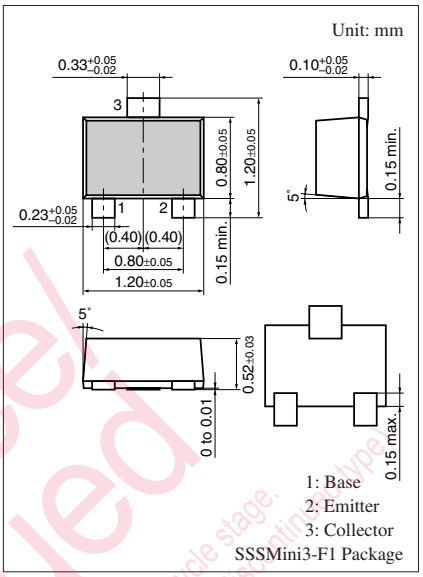
2SC5557

Silicon NPN epitaxial planar type

For low-noise RF amplifier



Marking symbol: 5A

■ Features

- High transition frequency f_T
- High gain of 8.2 dB and low noise of 1.8 dB at 3 V
- Optimum for RF amplification of a portable telephone and pager

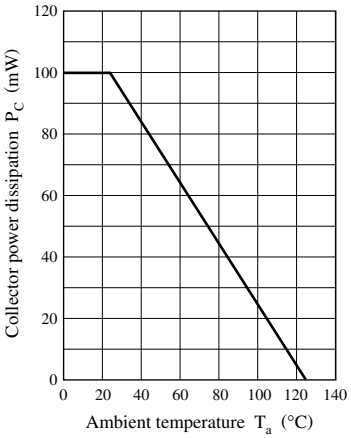
■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	9	V
Collector to emitter voltage	V_{CEO}	6	V
Emitter to base voltage	V_{EBO}	1	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

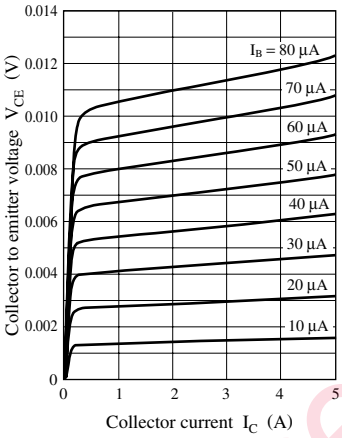
■ Electrical Characteristics $T_a = 25°C \pm 3°C$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 9 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} = 3 V, I_C = 10 mA	100		160	—
Forward transfer gain	$\|S_{21e}\|^2$	V_{CE} = 3 V, I_C = 10 mA, f = 2 GHz	7.0	9.0		dB
Noise figure	NF	V_{CE} = 3 V, I_C = 3 mA, f = 1.5 GHz		2.0	4.0	dB
Collector output capacitance	C_{ob}	V_{CB} = 3 V, I_E = 0, f = 1 MHz		0.6	0.9	pF
Gain bandwidth product	f_T	V_{CE} = 3 V, I_C = 10 mA, f = 2 GHz		12.5		GHz

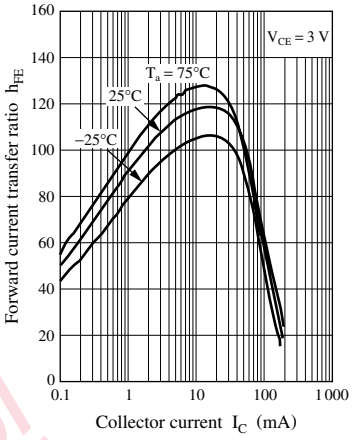
P_C — T_a



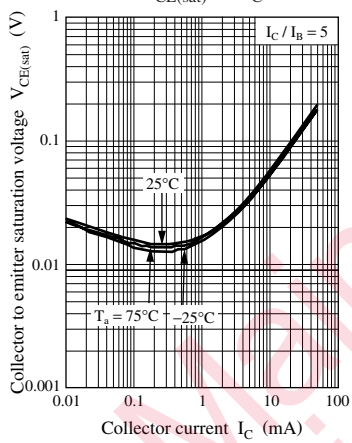
I_C — V_{CE}



h_{FE} — I_C

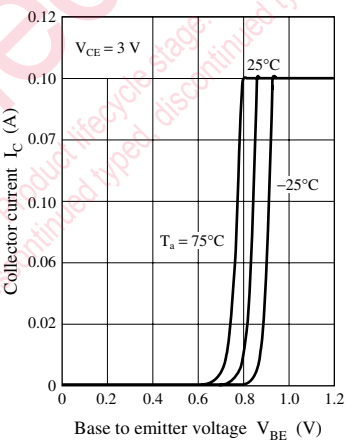


$V_{CE(sat)}$ — I_C

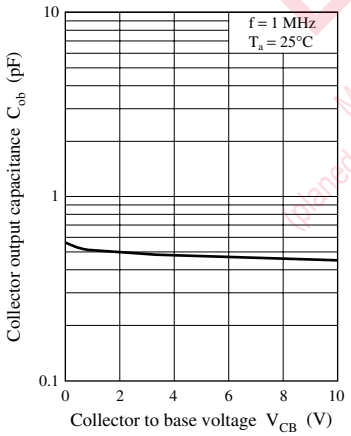


I_C — I_B

I_C — V_{BE}



C_{ob} — V_{CB}



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