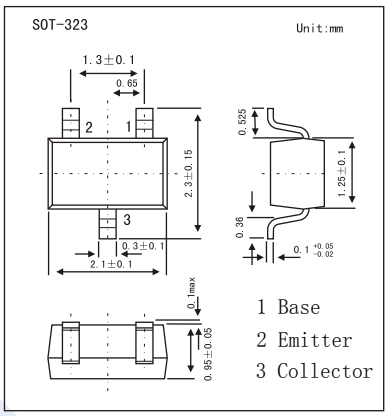
NPN Transistors

2SC3930



■ Features

- Optimum for RF amplification of FM/AM radios.
- High transition frequency fT.
- Complementary to 2SA1532

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	30	V
Collector - Emitter Voltage	V_{CEO}	20	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	30	mA
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 uA, I_E= 0	30			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B= 0	20			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μA, I_C= 0	5			
Collector-base cut-off current	I_{CBO}	V_{CB}= 25V , I_E= 0			0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}= 4V , I_C=0			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10 mA, I_B=1mA			1	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=10 mA, I_B=1mA			1.2	
DC current gain	h_{FE}	V_{CE}= 10V, I_C= 1mA	70		220	
Noise figure	NF	V_{CB}= 10V, I_E= -1mA,f=5MHz		2.8	4	dB
Reverse transfer impedance	Z_{rb}	V_{CB}= 10V, I_E= -1mA,f=2MHz		22	50	Ω
Common emitter reverse transfer capacitance	C_{re}	V_{CE}= 10V, I_C= 1mA,f=10.7MHz		0.9	1.5	pF
Transition frequency	f_T	V_{CE}= 10V, I_E= -1mA,f=200MHz	150	250		MHz

■ Classification of hfe

Type	2SC3930-B	2SC3930-C
Range	70-140	110-220
Marking	VB	VC

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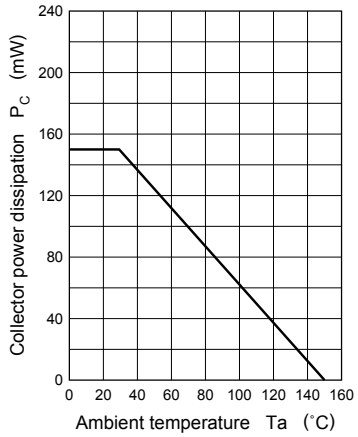
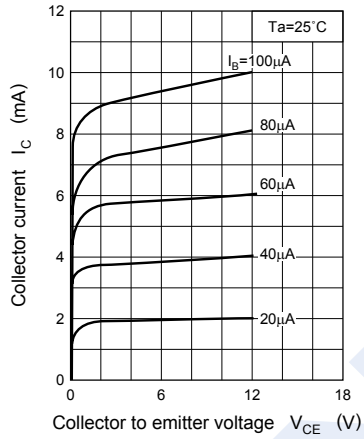
■ Typical Characterisitics

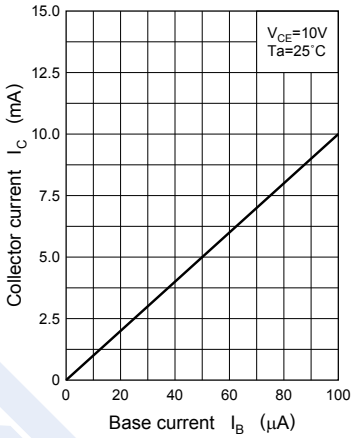
P_C — Ta



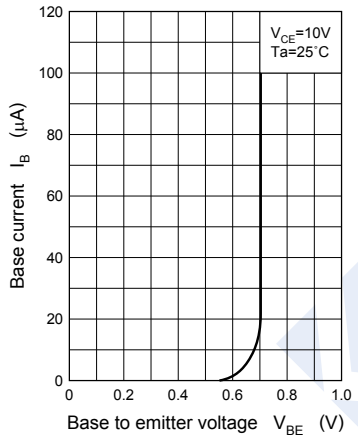
I_C — V_{CE}



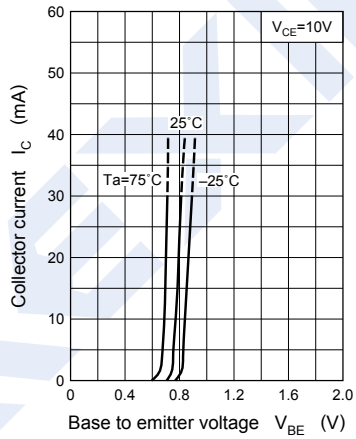
I_C — I_B



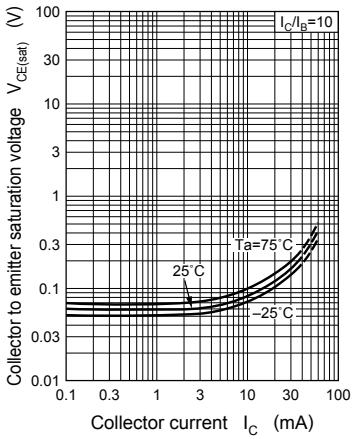
I_B — V_{BE}



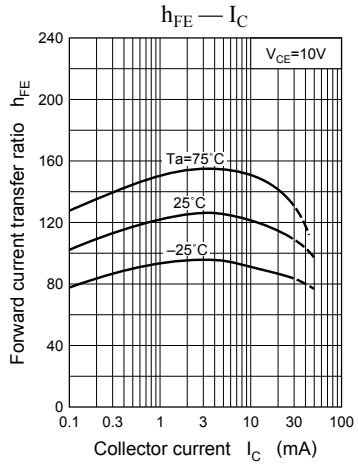
I_C — V_{BE}



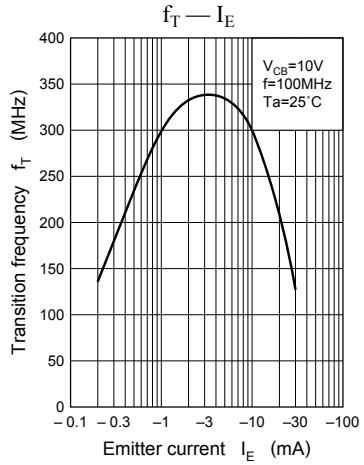
$V_{CE(sat)}$ — I_C



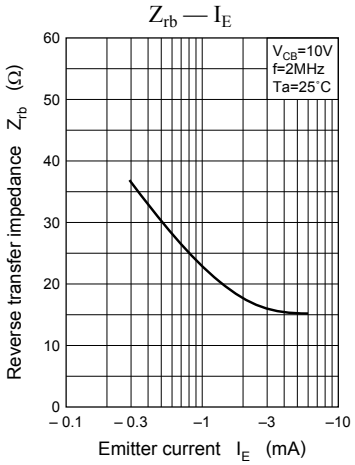
h_{FE} — I_C



f_T — I_E



Z_{rb} — I_E



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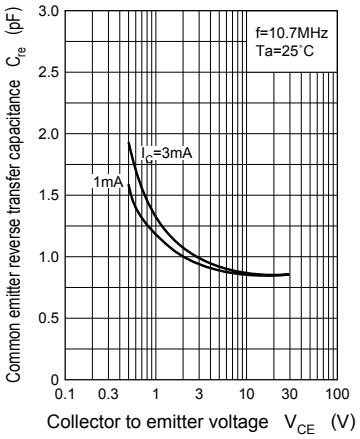
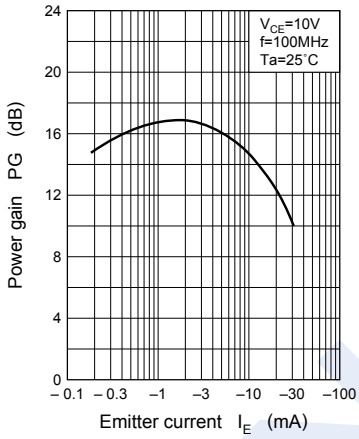
■ Typical Characterisitics

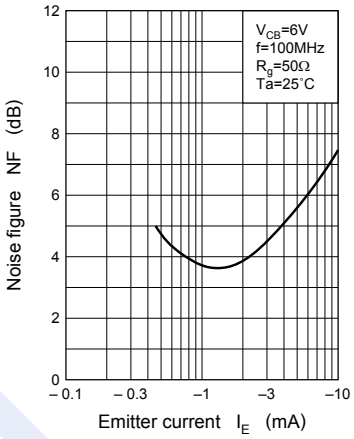
C_{re} — V_{CE}



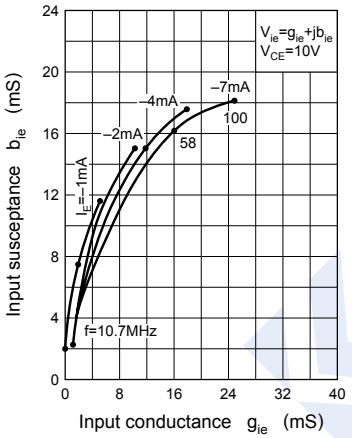
PG — I_E



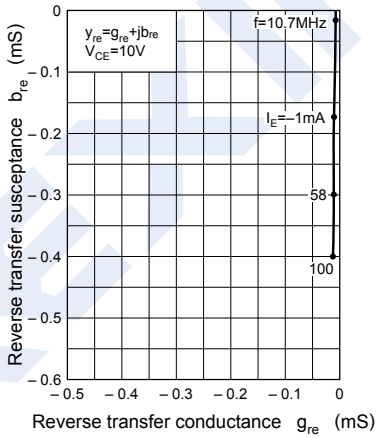
NF — I_E



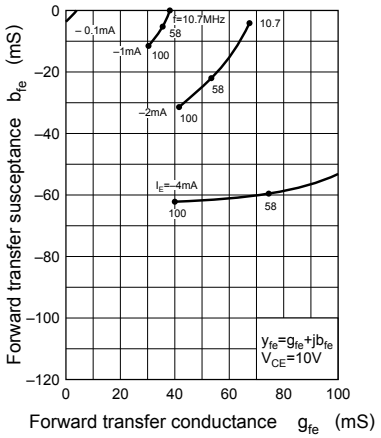
b_{ie} — g_{ie}



b_{re} — g_{re}



b_{fe} — g_{fe}



b_{oe} — g_{oe}