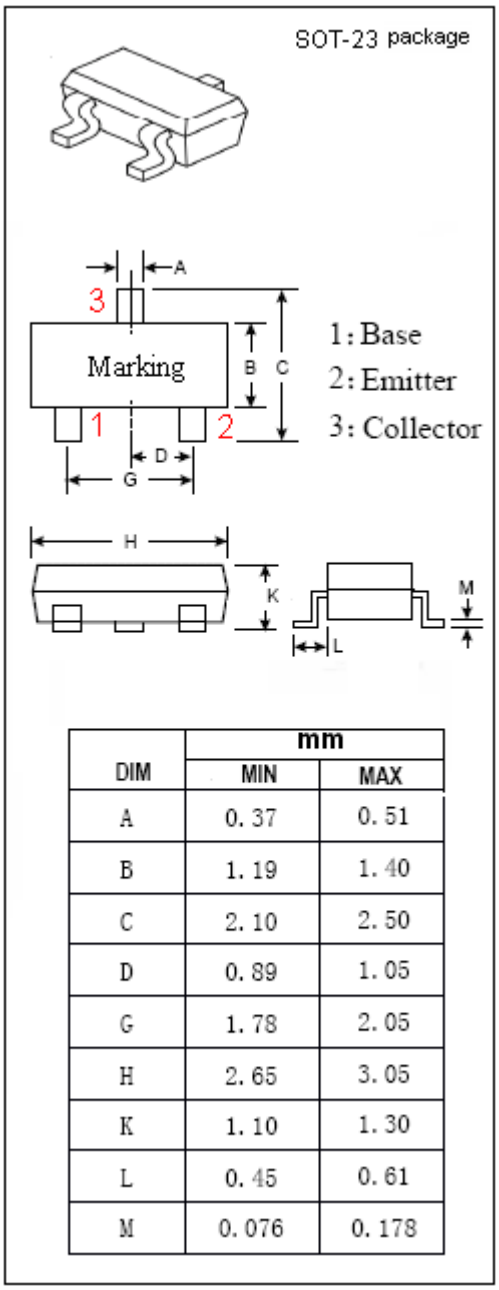
isc Silicon NPN RF Transistor BFR520

DESCRIPTION

- High Power Gain
- High Current Gain Bandwidth Product
- Low Noise Figure



DIM	mm MIN	mm MAX
A	0.37	0.51
B	1.19	1.40
C	2.10	2.50
D	0.89	1.05
G	1.78	2.05
H	2.65	3.05
K	1.10	1.30
L	0.45	0.61
M	0.076	0.178

APPLICATIONS

- Designed for RF frontend in wideband applications in the GHz range,such as analog and digital cellular telephones, cordless.

MARKING: 32W

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	20	V
V_{CES}	Collector-Emitter Voltage	15	V
V_{EBO}	Emitter-Base Voltage	2.5	V
I_C	Collector Current-Continuous	70	mA
P_C	Collector Power Dissipation @T_C=25℃	0.3	W
T_J	Junction Temperature	175	℃
T_{stg}	Storage Temperature Range	-65~150	℃

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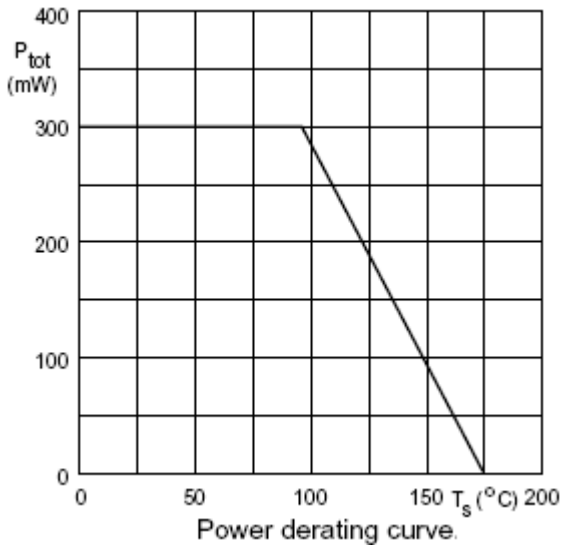
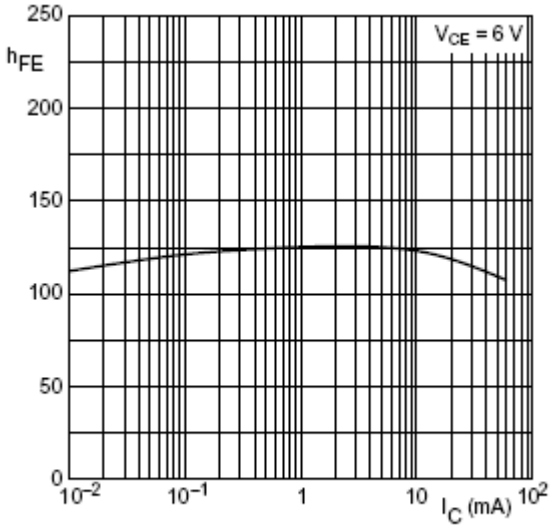
ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
I_{CBO}	Collector Cutoff Current	V_{CB}= 6V; I_E= 0			0.05	μA
h_{FE}	DC Current Gain	I_C= 20mA ; V_{CE}= 6V	60		250	
f_T	Current-Gain—Bandwidth Product	I_C= 20mA ; V_{CE}= 6V; f= 1GHz		9		GHz
C_{OB}	Output Capacitance	I_E= 0 ; V_{CB}= 6V; f= 1MHz		0.5		pF
PG	Power Gain	I_C= 20mA ; V_{CE}= 6V; f= 900MHz		15		dB
PG	Power Gain	I_C= 20mA ; V_{CE}= 6V; f= 2GHz		9		dB
$\lvert S_{21e} \rvert^2$	Insertion Power Gain	I_C= 20mA ; V_{CE}= 6V; f= 900MHz	13	14		dB
NF	Noise Figure	I_C= 5mA ; V_{CE}= 6V; f= 900MHz		1.1	1.6	dB
NF	Noise Figure	I_C= 20mA ; V_{CE}= 6V; f= 900MHz		1.6	2.1	dB



Power derating curve.



DC current gain as a function of collector current

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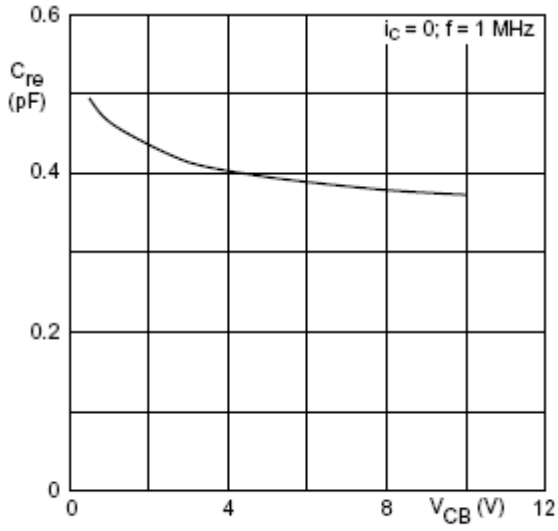
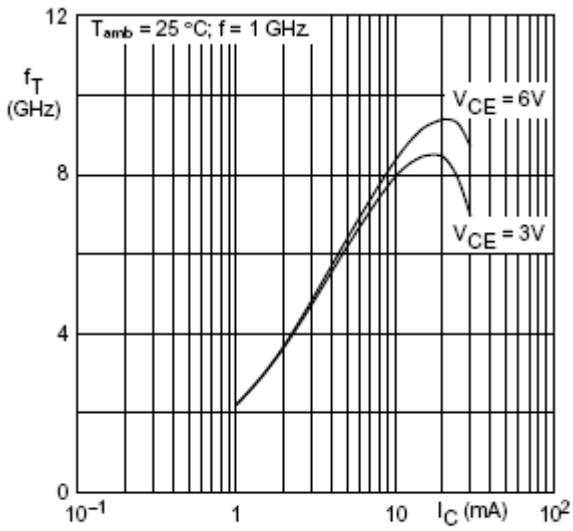
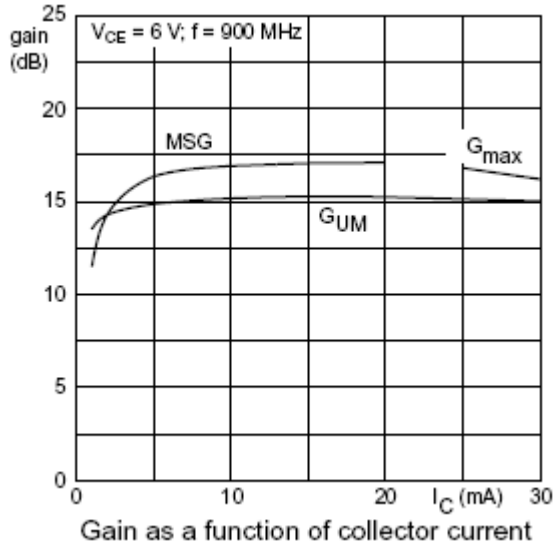


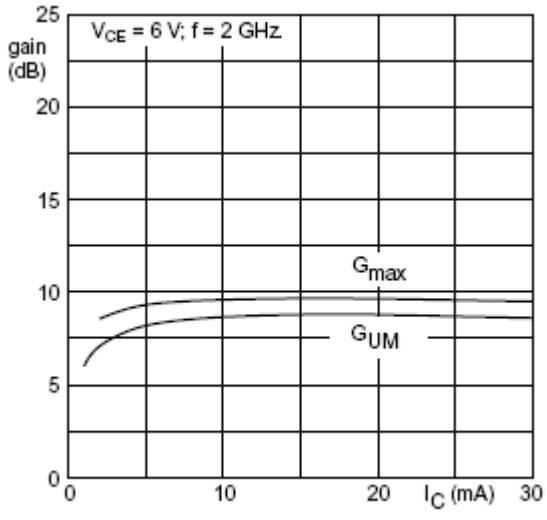
Feedback capacitance as a function of collector-base voltage



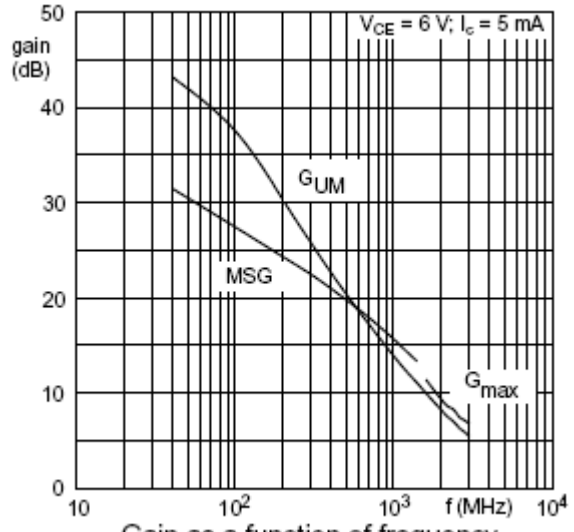
Transition frequency as a function of collector current



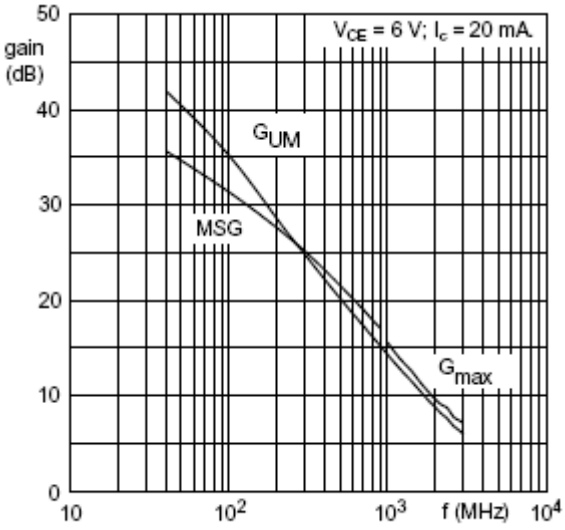
Gain as a function of collector current



Gain as a function of collector current



Gain as a function of frequency



Gain as a function of frequency

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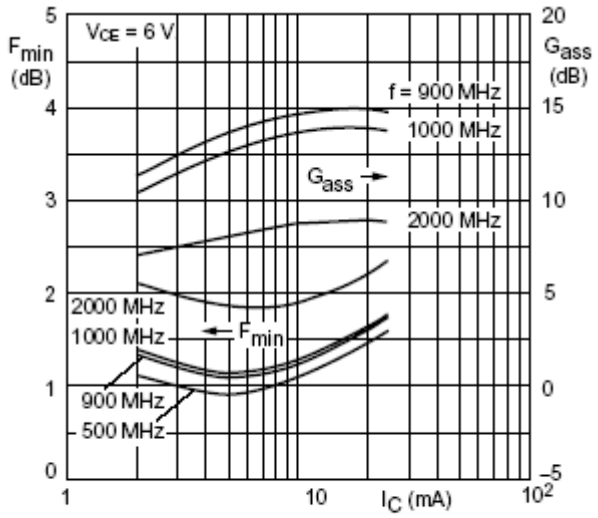
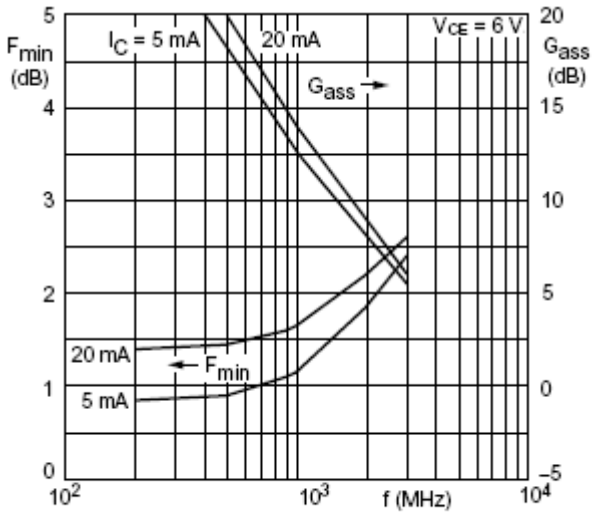
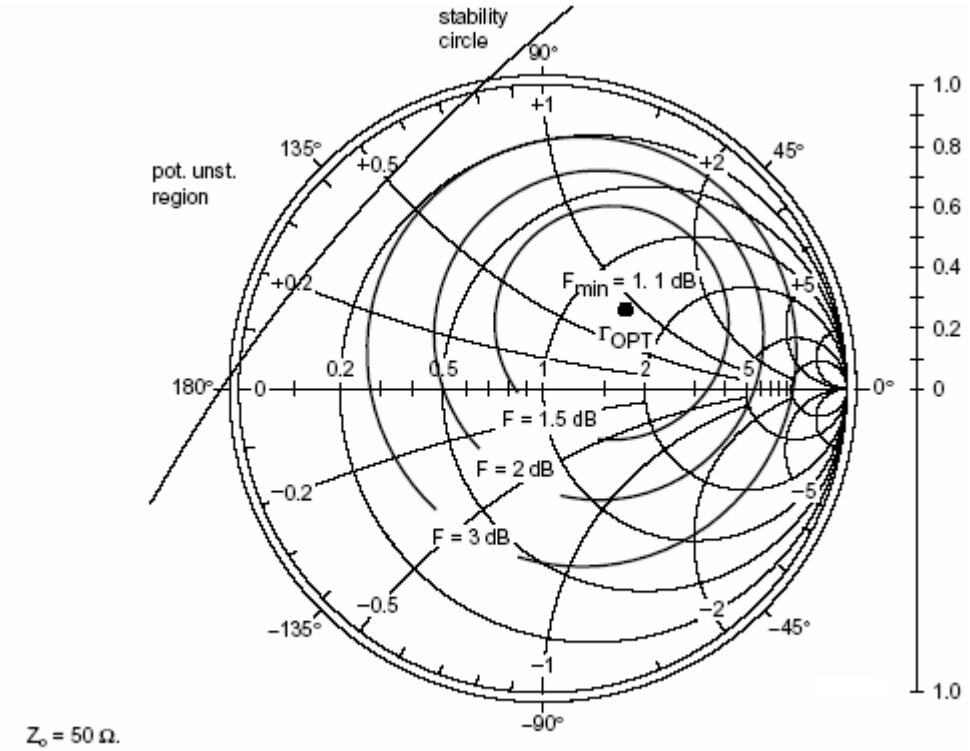


Minimum noise figure and associated available gain as functions of collector current



Minimum noise figure and associated available gain as functions of frequency



Z_o = 50 Ω.
V_{CE} = 6 V; I_C = 5 mA; f = 900 MHz.

Noise circle figure.

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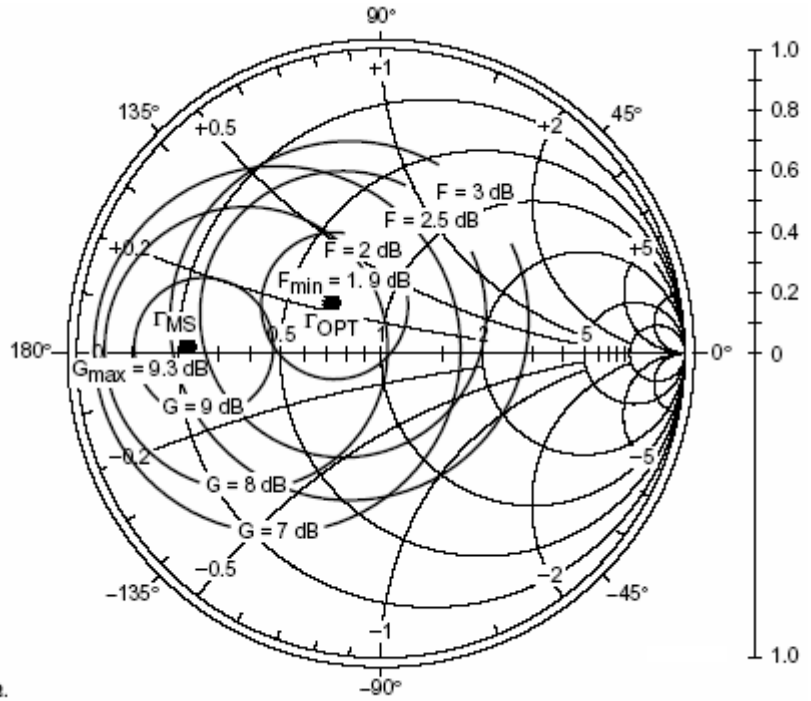
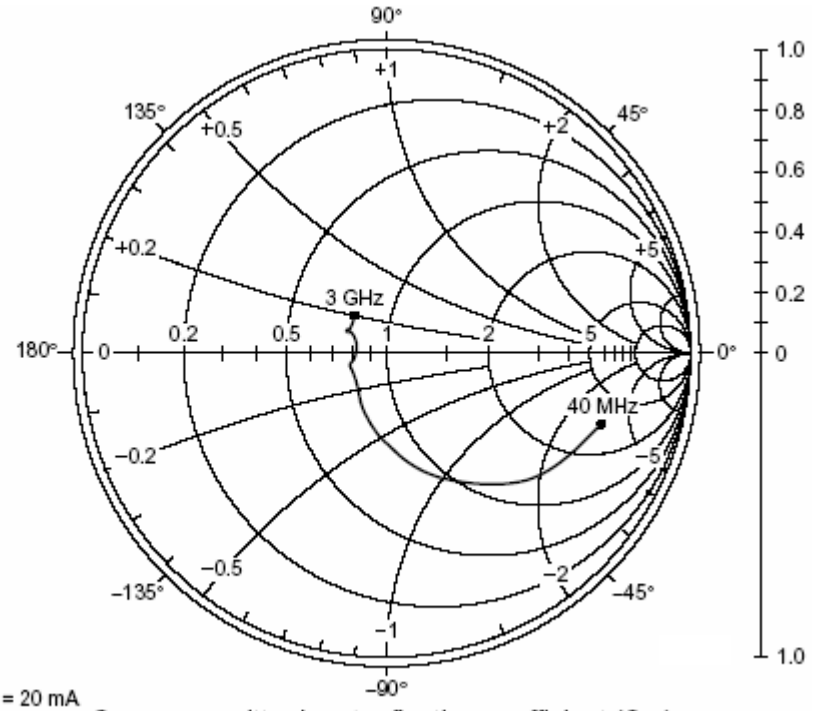


Z_o = 50 Ω.
V_{CE} = 6 V; I_C = 5 mA; f = 2000 MHz Noise circle figure.



V_{CE} = 6 V; I_C = 20 mA
Z_o = 50 Ω.
Common emitter input reflection coefficient (S_{11})

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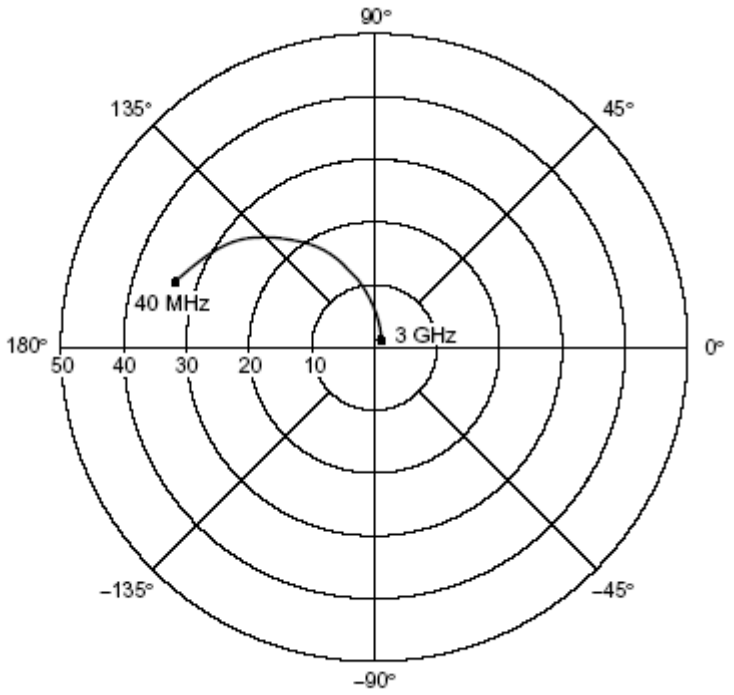
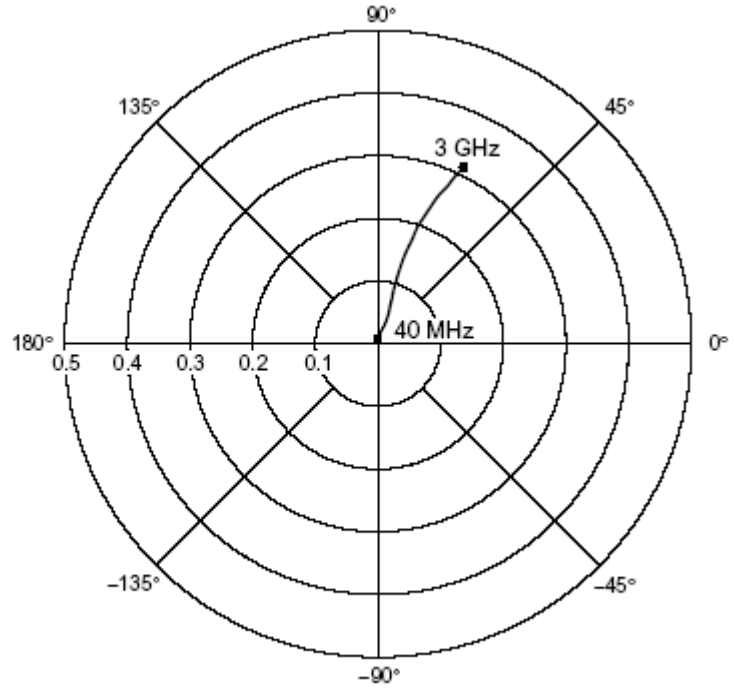


V_{CE} = 6 V; I_C = 20 mA Common emitter forward transmission coefficient (S_{21})



V_{CE} = 6 V; I_C = 20 mA Common emitter reverse transmission coefficient (S_{12})

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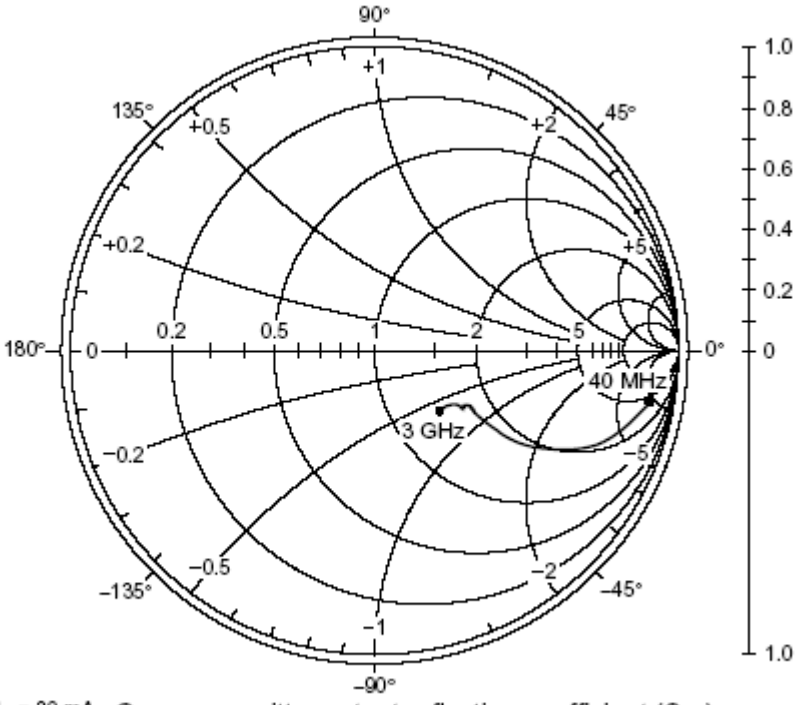

V_{CE} = 6 V; I_C = 20 mA
Z_o = 50 Ω.

Common emitter output reflection coefficient (S_{22})