

isc Silicon NPN RF Transistor

BFQ591

DESCRIPTION

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

APPLICATIONS

- Designed for use in MATV or CATV amplifiers and RF communications subscribers equipment.

ABSOLUTE MAXIMUM RATINGS(T_a=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V _{CBO}	Collector-Base Voltage	20	V
V _{CEO}	Collector-Emitter Voltage	15	V
V _{EBO}	Emitter-Base Voltage	3	V
I _C	Collector Current-Continuous	200	mA
P _C	Collector Power Dissipation @T _C =25°C	2.25	W
T _J	Junction Temperature	175	°C
T _{stg}	Storage Temperature Range	-65~150	°C

SOT-89 package

1: Base
2: Emitter
3: Collector

DIM	mm	
	MIN	MAX
A	1.40	1.60
b	0.32	0.52
b1	0.36	0.56
C	0.35	0.44
D	4.40	4.46
D1	1.40	1.80
E	2.30	2.60
E1	3.94	4.25
e	1.50typ	
e1	2.90	3.10
L	0.90	1.10

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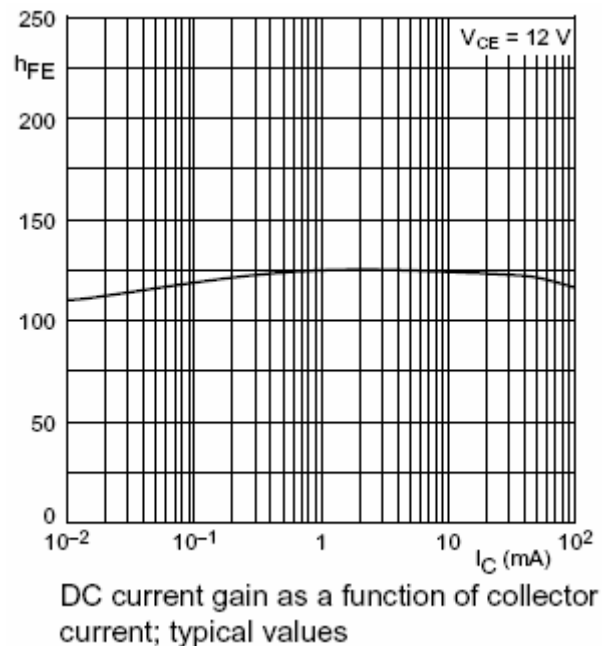
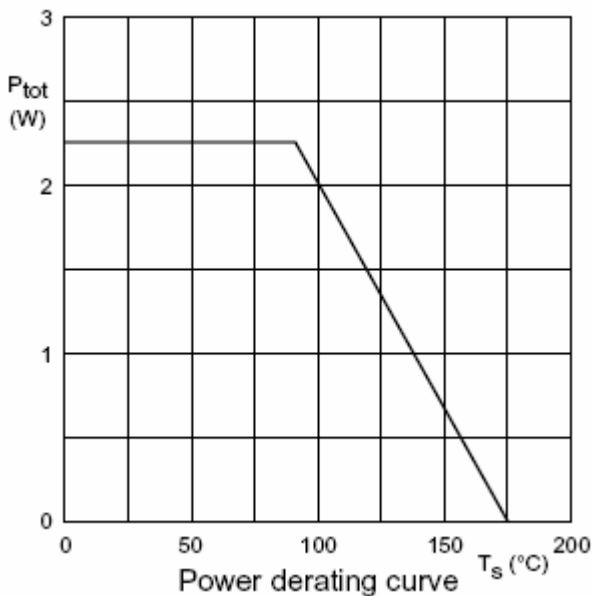
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ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

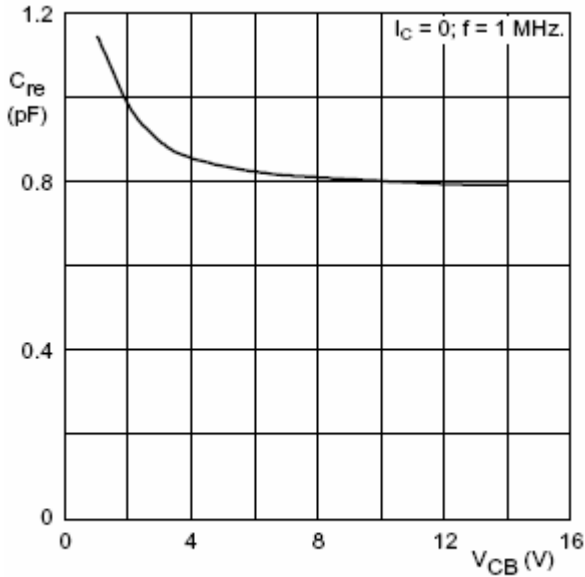
SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CES}	Collector-Emitter Breakdown Voltage	I _C = 0.1mA ; I _B = 0	15			V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 0.1mA ; I _E = 0	20			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 0.1mA ; I _C = 0	3			V
I _{CBO}	Collector Cutoff Current	V _{CB} = 10V; I _E = 0			0.1	μ A
h _{FE}	DC Current Gain	I _C = 70mA ; V _{CE} = 8V	60		250	
f _T	Current-Gain—Bandwidth Product	I _C = 70mA ; V _{CE} = 12V; f= 1GHz		7		GHz
PG	Power Gain	I _C = 70mA;V _{CE} = 12V; f= 900MHz		11		dB
PG	Power Gain	I _C = 70mA;V _{CE} = 12V; f= 2GHz		5.5		dB
C _{re}	Feedback Capacitance	I _E = 0 ; V _{CB} = 12V; f= 1MHz		0.8		pF
S _{21e} ²	Insertion Power Gain	I _C = 70mA ; V _{CE} = 12V; f= 1GHz		10		dB
V _O	Output Voltage	note		700		mV

Note: dim = 60 dB (DIN45004B); V_p = V_o; V_q = V_o - 6 dB; f_p = 795.25 MHz; f_q = 803.25 MHz; f_r = 803.25 MHz; measured @ f_(p+q+r) = 793.25 MHz.

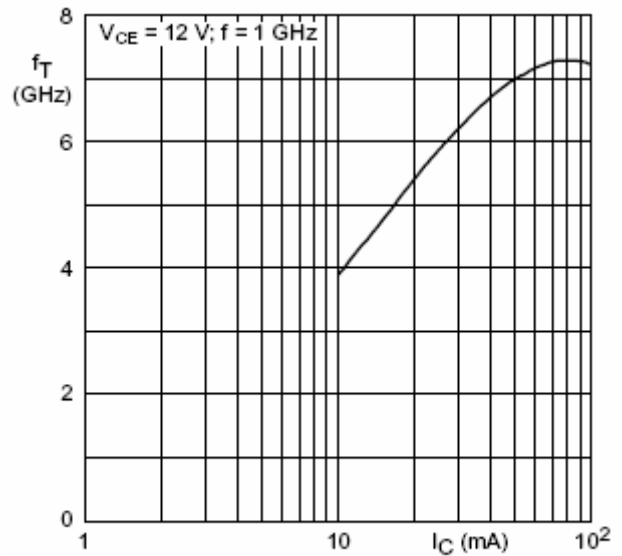


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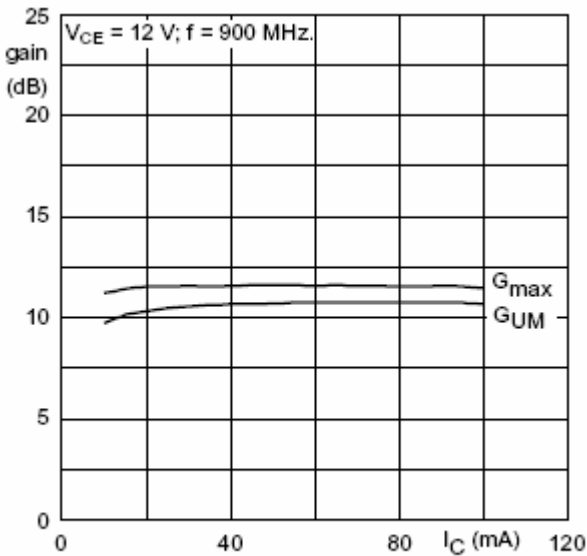
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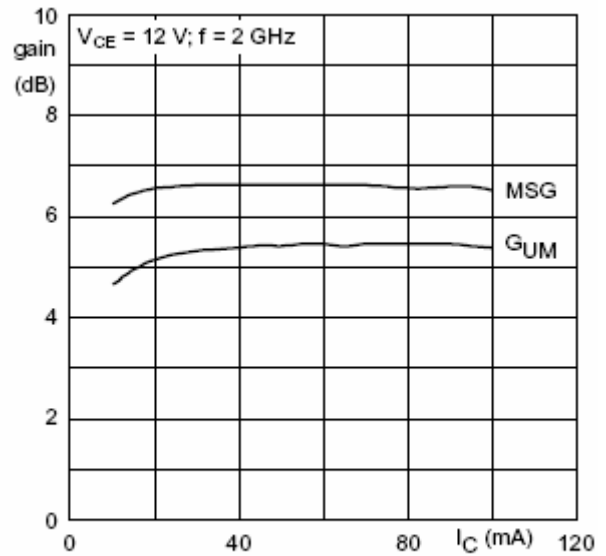
Feedback capacitance as a function of collector-base voltage; typical values



Transition frequency as a function of collector current



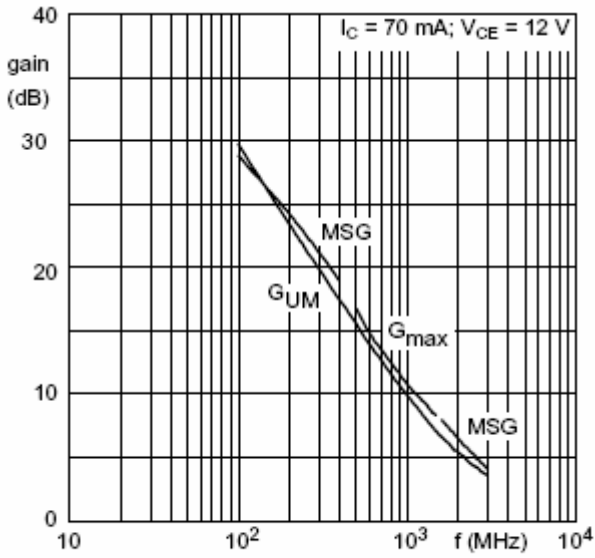
Gain as a function of collector current; typical values



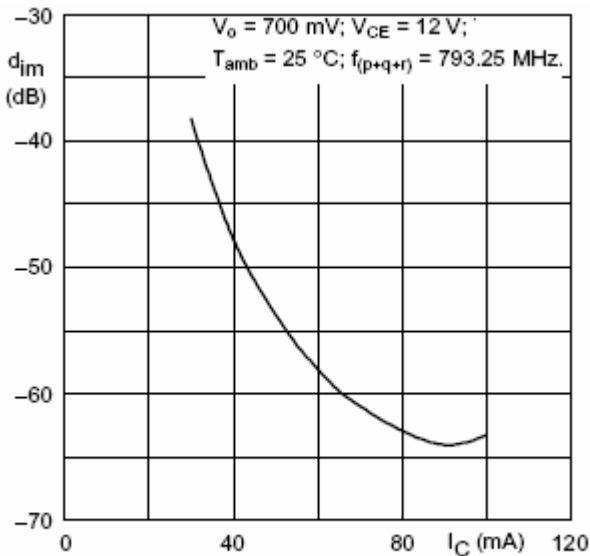
Gain as a function of collector current; typical values

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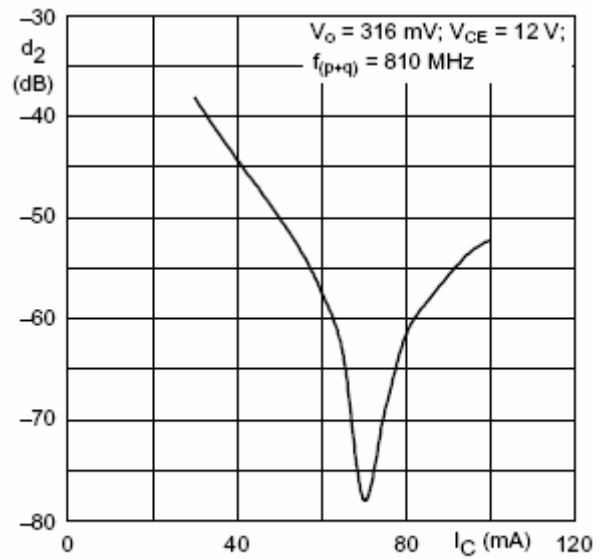
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Gain as a function of frequency; typical values



Intermodulation distortion as function of collector current; typical values.



Second order intermodulation distortion as function of collector current; typical values.