

ISC Silicon NPN RF Transistor

BFQ540

DESCRIPTION

- High Gain
- High Output Voltage
- Low Noise

APPLICATIONS

- Designed for use in VHF, UHF and CATV amplifiers.

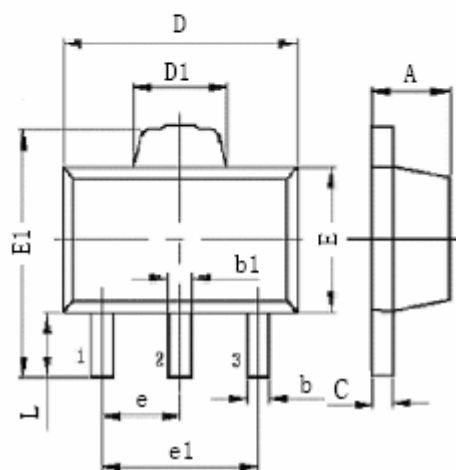
ABSOLUTE MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	20	V
V_{CES}	Collector-Emitter Voltage	15	V
V_{EBO}	Emitter-Base Voltage	2	V
I_C	Collector Current-Continuous	120	mA
P_C	Collector Power Dissipation @ $T_c=25^{\circ}\text{C}$	1.2	W
T_J	Junction Temperature	175	$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^{\circ}\text{C}$

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

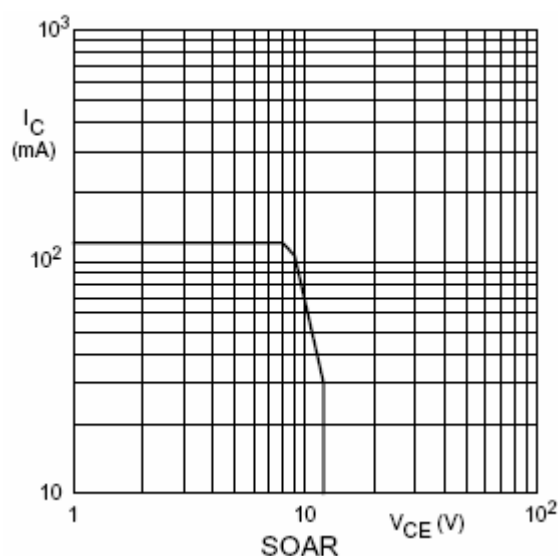
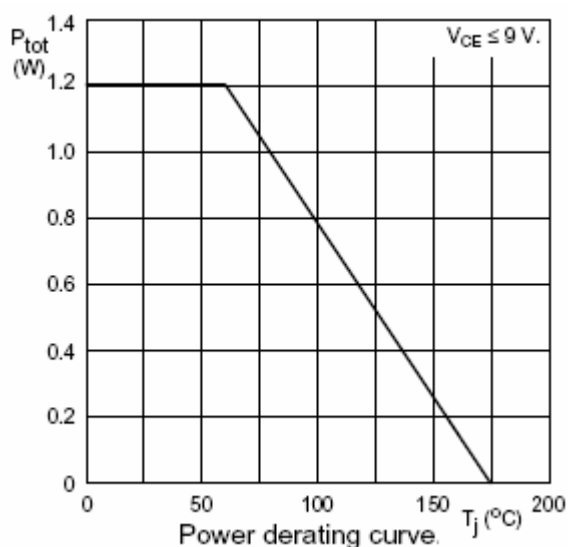
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ELECTRICAL CHARACTERISTICS

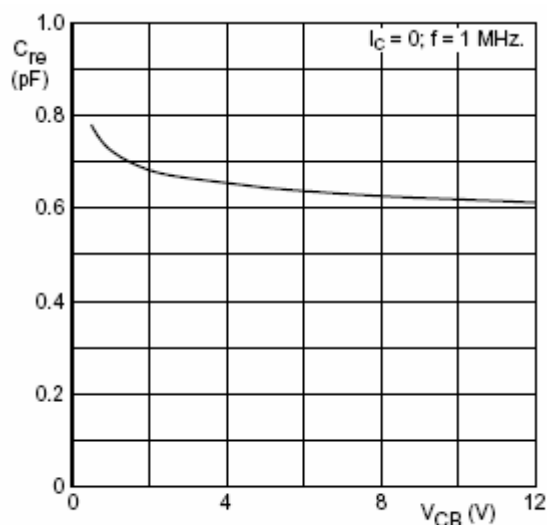
 $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage	$I_C=40\mu\text{A}$; $R_{BE}=0$	15			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=10\mu\text{A}$; $I_E=0$	20			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=100\mu\text{A}$; $I_C=0$	2			V
I_{CBO}	Collector Cutoff Current	$V_{CB}=8\text{V}$; $I_E=0$			0.05	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=1\text{V}$; $I_C=0$			0.2	μA
h_{FE}	DC Current Gain	$I_C=40\text{mA}$; $V_{CE}=8\text{V}$	60		250	
f_T	Current-Gain—Bandwidth Product	$I_C=40\text{mA}$; $V_{CE}=8\text{V}$; $f=1\text{GHz}$		9		GHz
C_{re}	Feedback Capacitance	$I_E=0$; $V_{CB}=8\text{V}$; $f=1\text{MHz}$		0.9		pF
$ S_{21e} ^2$	Insertion Power Gain	$I_C=40\text{mA}$; $V_{CE}=8\text{V}$; $f=900\text{MHz}$	12	13		dB
NF	Noise Figure	$I_C=40\text{mA}$; $V_{CE}=8\text{V}$; $f=900\text{MHz}$		1.9	2.4	dB

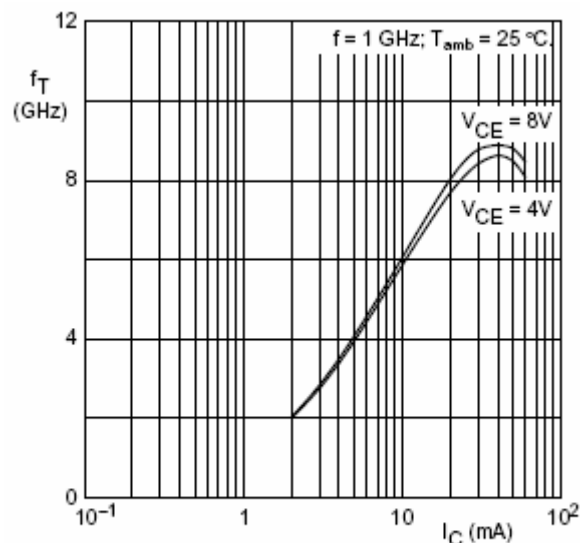


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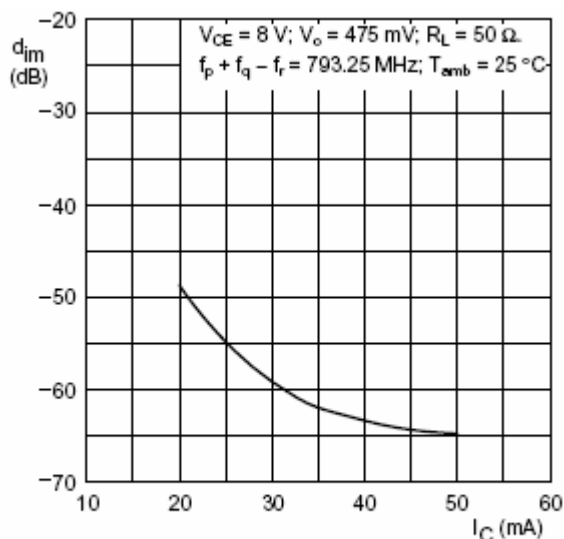
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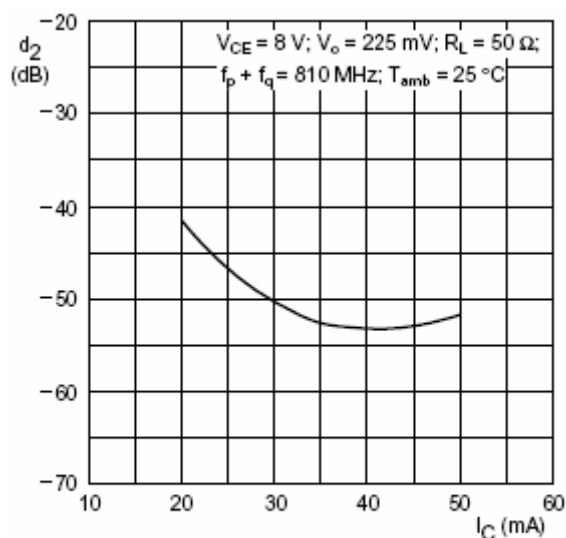
Feedback capacitance as a function of collector-base voltage; typical values.



Transition frequency as a function of collector current; typical values.



Intermodulation distortion as a function of collector current; typical values.



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