

isc Silicon NPN RF Transistor

BFR540

DESCRIPTION

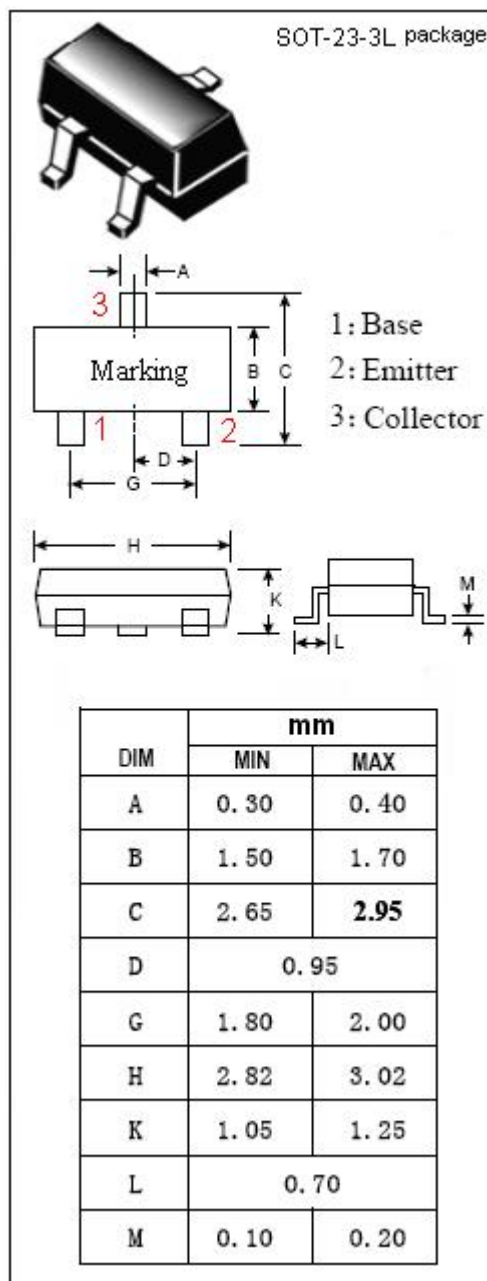
- High Power Gain
- High Current Gain Bandwidth Product
- Low Noise Figure
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for RF frontend in wideband applications in the GHz range, such as analog and digital cellular telephones, cordless telephones (CT1, CT2, DEC, etc.).

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	2.5	V
I_C	Collector Current-Continuous	120	mA
P_C	Collector Power Dissipation @ $T_c=25^{\circ}\text{C}$	0.5	W
T_J	Junction Temperature	175	$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^{\circ}\text{C}$



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ELECTRICAL CHARACTERISTICS

T_c=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
I _{CBO}	Collector Cutoff Current	V _{CB} = 8V; I _E = 0			50	nA
h _{FE}	DC Current Gain	I _C = 40mA; V _{CE} = 8V	100		250	
f _T	Current-Gain—Bandwidth Product	I _C = 40mA; V _{CE} = 8V; f= 1GHz		9		GHz
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 8V; f= 1MHz		0.9		pF
C _{re}	Feedback Frequency	I _E = 0; V _{CB} = 8V; f= 1MHz		0.6		pF
PG	Power Gain	I _C = 40mA; V _{CE} = 8V; f= 900MHz		14		dB
PG	Power Gain	I _C = 40mA; V _{CE} = 8V; f= 2GHz		7		dB
S _{21e} ²	Insertion Power Gain	I _C = 40mA; V _{CE} = 8V; f= 900MHz	12	13		dB
NF	Noise Figure	I _C = 10mA; V _{CE} = 8V; f= 900MHz		1.3	1.8	dB
NF	Noise Figure	I _C = 40mA; V _{CE} = 8V; f= 900MHz		1.9	2.4	dB
NF	Noise Figure	I _C = 10mA; V _{CE} = 8V; f= 2GHz		2.1		dB
V _O	Output Voltage	I _C = 40 mA; V _{CE} = 8 V; Z _L = Z _S = 75 Ω		550		mV

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