

isc Silicon NPN RF Transistor

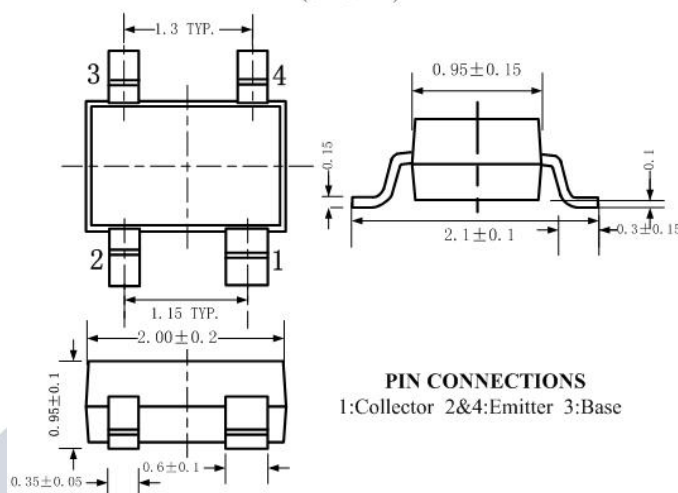
BFG540

DESCRIPTION

- Low Noise Figure
NF = 1.3 dB TYP.
@ $V_{CE} = 8\text{ V}$, $I_C = 10\text{ mA}$, $f = 900\text{ MHz}$
- High Gain
 $|S_{21}|^2 = 16\text{ dB}$ TYP.
@ $V_{CE} = 8\text{ V}$, $I_C = 40\text{ mA}$, $f = 900\text{ MHz}$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for use in low noise ,high-gain amplifiers and linear broadband amplifiers.

SOT-343R(SC82) PACKAGE DIMENSIONS
(Units:mm)PIN CONNECTIONS
1:Collector 2&4:Emitter 3:BaseABSOLUTE MAXIMUM RATINGS($T_a = 25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	20	V
V_{CEO}	Collector-Emitter Voltage	12	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	150	$^\circ\text{C}$
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
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 1mA ; I _B = 0	12			V
I _{CBO}	Collector Cutoff Current	V _{CB} = 8V; I _E = 0			0.05	μ A
h _{FE}	DC Current Gain	I _C =40mA ; V _{CE} = 8V	60		250	
f _T	Current-Gain—Bandwidth Product	I _C = 40mA ; V _{CE} = 8V; f= 1MHz		9		GHz
C _{re}	Feedback Capacitance	I _E = 0 ; V _{CB} = 8V; f= 1MHz		0.5		pF
C _e	Emitter capacitance	I _C =i _C =0, V _{EB} =0.5V, f=1MHz		2.0		pF
C _c	Collector capacitance	I _E =i _e =0, V _{CB} =8V, f=1MHz		0.9		pF
S ₂₁ ²	Insertion Power Gain	I _C = 40mA ; V _{CE} = 8V; f= 900MHz	15	16		dB
NF	Noise Figure	I _C = 10mA ; V _{CE} = 8V; f= 900MHz		1.3	1.8	dB
		I _C = 40mA ; V _{CE} = 8V; f= 900MHz		1.9	2.4	
		I _C = 10mA ; V _{CE} = 8V; f= 2GHz		2.1		

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