

isc Silicon NPN RF Transistor

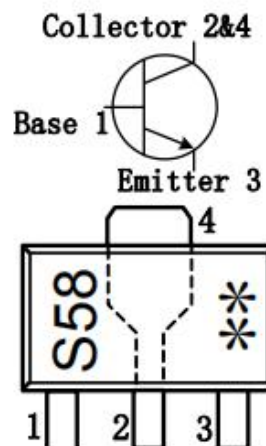
BFU580Q

DESCRIPTION

- Low Noise Figure
 $f_T = 8.5\text{GHz TYP. @ } I_C = 30\text{mA} ; V_{CE} = 8\text{V} ; f = 900\text{MHz}$
- High Gain
 $|S_{21}|^2 = 13\text{dB TYP. @ } I_C = 30\text{mA} ; V_{CE} = 8\text{V} ; f = 900\text{MHz}$
- 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.

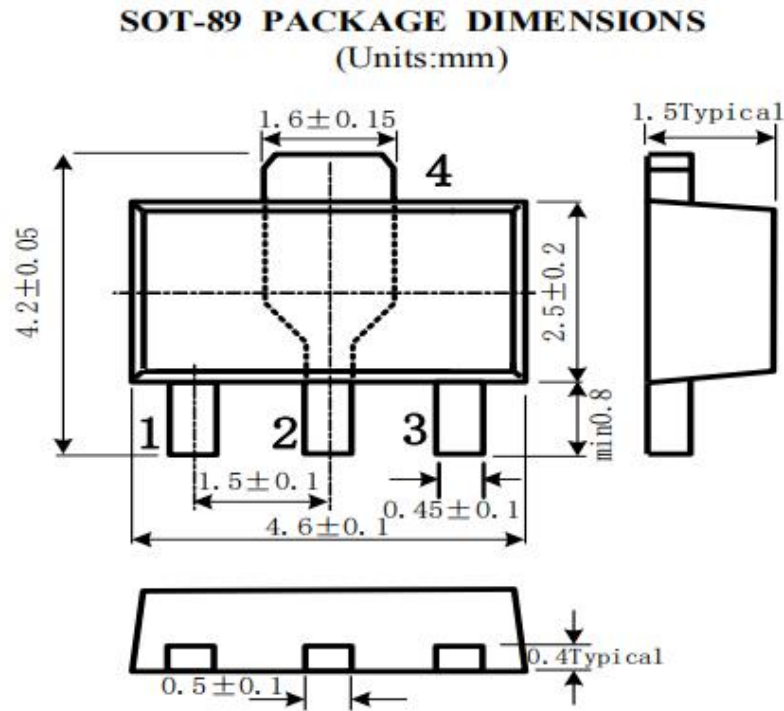


ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	25	V
V_{CEO}	Collector-Emitter Voltage	15	V
V_{EBO}	Emitter-Base Voltage	2.5	V
I_C	Collector Current-Continuous	60	mA
P_C	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	1	W
T_J	Junction Temperature	-40~150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$

isc Silicon NPN RF Transistor**BFU580Q****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	15			V
I _{CBO}	Collector Cutoff Current	V _{CB} = 6V; I _E = 0			0.05	μ A
h _{FE}	DC Current Gain	I _C =30mA ; V _{CE} = 8V	60		250	
f _T	Current-Gain—Bandwidth Product	I _C = 30mA ; V _{CE} = 8V; f= 900MHz	8	8.5		GHz
C _{re}	Feedback Capacitance	I _E = 0 ; V _{CB} = 8V; f= 1MHz		1.2		pF
C _e	Emitter capacitance	I _C =I _C =0, V _{EB} =0.5V, f=1MHz		3.0		pF
C _c	Collector capacitance	I _E =I _E =0, V _{CB} =8V, f=1MHz		1.8		pF
S ₂₁ ²	Insertion Power Gain	I _C = 30mA ; V _{CE} = 8V; f= 433MHz	17	17.5		dB
		I _C = 30mA ; V _{CE} = 8V; f= 900MHz	12.5	13		
		I _C = 30mA ; V _{CE} = 8V; f= 1800MHz	7.5	8		
G _{UM}	maximum power gain	I _C = 30mA ; V _{CE} = 8V; f= 433MHz	18.5	19		dB
		I _C = 30mA ; V _{CE} = 8V; f= 900MHz	13.5	14		
		I _C = 30mA ; V _{CE} = 8V; f= 1800MHz	8	8.5		

isc Silicon NPN RF Transistor**BFU580Q****PACKAGE SIZE DRAWING**

PIN CONNECTIONS
1.Base 2&4. Collector 3.Emitter

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