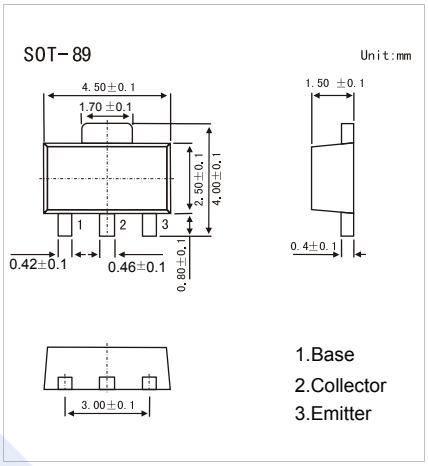
NPN Silicon RF Transistor

BFQ19S



■ Features

- For low noise, low distortion broadband amplifiers in antenna and telecommunications systems up to 1.5 GHz at collector currents from 10 mA to 70 mA

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	20	V
Collector - Emitter Voltage open base	V_{CEO}	15	
Collector - Emitter Voltage shorted base	V_{CES}	20	
Emitter - Base Voltage	V_{EBO}	3	
Collector Current - Continuous	I_C	75	mA
Base current	I_B	10	
Total power dissipation $T_S \leqslant 85$ °C *1	P_{tot}	1	W
Junction - soldering point	R_{thJS}	65	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-65 to 150	

*1: T_S is measured on the collector lead at the soldering point to the pcb.

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■ Electrical Characteristics Ta = 25℃, unless otherwise specified.

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA， I_B= 0	15			V
Collector-base cut-off current	I_{CBO}	V_{CB}= 10 V , I_E= 0			100	nA
Collector- emitter cut-off current	I_{CES}	V_{CE}= 20 V , V_{BE}= 0			100	μA
Emitter cut-off current	I_{EBO}	V_{EB}= 2V , I_C=0			10	
DC current gain	h_{FE}	V_{CE}= 8V, I_C= 70mA	40		220	
Collector-base capacitance	C_{cb}	V_{CB} = 10 V, f = 1 MHz		1	1.5	pF
Collector-emitter capacitance	C_{ce}	V_{CE} = 10 V, f = 1 MHz		0.4		
Emitter-base capacitance	C_{eb}	V_{EB} = 0.5 V, f = 1 MHz		4.4		
Noise figure	F	I_C = 20 mA, V_{CE} = 8 V, Z_S = Z_{Sopt} ,				dB
		f = 900 MHz		2.5		
		f = 1.8 GHz		4		
Power gain, maximum available 1)	Gma	I_C = 70 mA, V_{CE} = 8 V, Z_S = Z_{Sopt}, Z_L = Z_{lopt} ,				
		f = 900 MHz		11.5		
		f = 1.8 GHz		7		
Transducer gain	$\|S_{21e}\|^2$	I_C = 30 mA, V_{CE} = 8 V, Z_S = Z_L = 50Ω,				
		f = 900 MHz		9.5		
		f = 1.8 GHz		4		
Third order intercept point	IP_3	I_C = 70 mA, V_{CE} = 8 V, Z_S=Z_{Sopt} , Z_L=Z_{Lopt} ,				
		f = 1.8 GHz		35		dBm
Transition frequency	f_T	V_{CE}= 8V, I_C= 70mA,f=500MHz	4	5.5		GHz

*1: $G_{ma} = |S_{21} / S_{12}| (k-(k^2-1)^{1/2})$

■ Marking

Marking	FG

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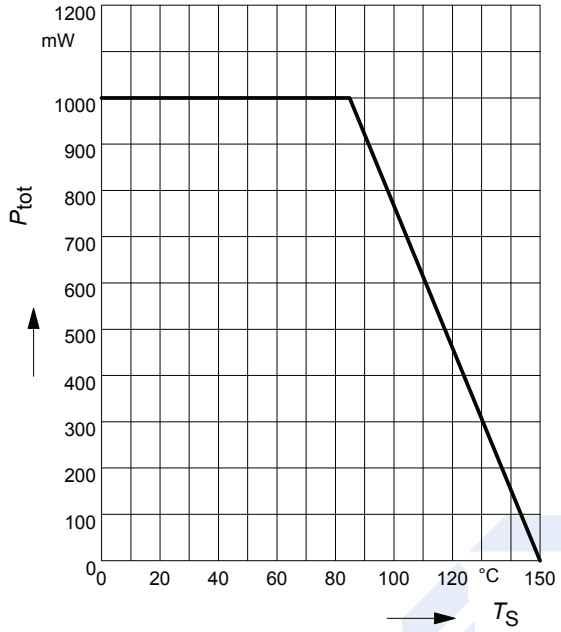
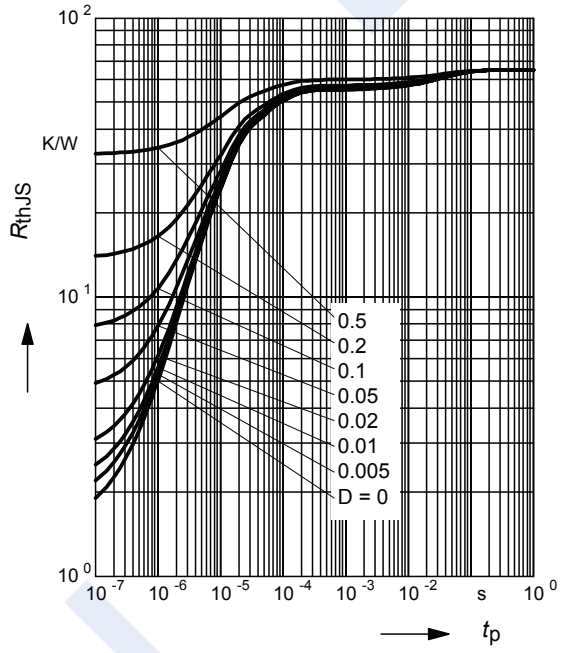
■ Typical Characterisitics

Total power dissipation $P_{tot} = f(T_S)$



Permissible Pulse Load $R_{thJS} = f(t_p)$



Permissible Pulse Load $P_{totmax}/P_{totDC} = f(t_p)$