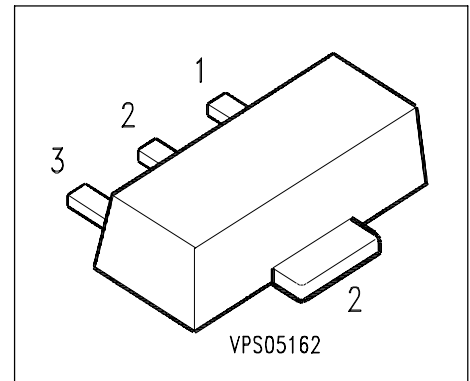


NPN Silicon RF Transistor

- For low noise, low distortion broadband amplifiers in antenna and telecommunications systems up to 1.5GHz at collector currents from 10 mA to 70 mA
- CECC-type available: CECC 50 002/259



ESD: Electrostatic discharge sensitive device, observe handling precaution!

Type	Marking	Ordering Code	Pin Configuration			Package
BFQ 19S	FGs	Q62702-F1088	1 = B	2 = C	3 = E	SOT-89

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CEO}	15	V
Collector-base voltage	V_{CBO}	20	
Emitter-base voltage	V_{EBO}	3	
Collector current	I_C	75	mA
Base current	I_B	12	
Total power dissipation $T_S \leq 85 \text{ }^\circ\text{C}$	P_{tot}	1	W
Junction temperature	T_j	150	$^\circ\text{C}$
Ambient temperature	T_A	- 65 ... + 150	
Storage temperature	T_{stg}	- 65 ... + 150	

Thermal Resistance

Junction - soldering point ¹⁾	R_{thJS}	≤ 65	K/W
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Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified.

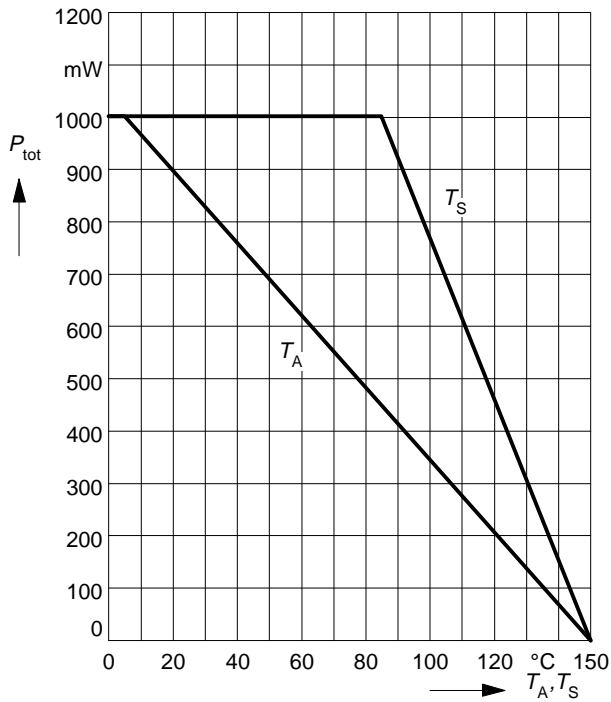
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Collector-emitter breakdown voltage $I_C = 1 \text{ mA}, I_B = 0$	$V_{(BR)CEO}$	15	-	-	V
Collector-emitter cutoff current $V_{CE} = 20 \text{ V}, V_{BE} = 0$	I_{CES}	-	-	100	μA
Collector-base cutoff current $V_{CB} = 10 \text{ V}, I_E = 0$	I_{CBO}	-	-	100	nA
Emitter-base cutoff current $V_{EB} = 2 \text{ V}, I_C = 0$	I_{EBO}	-	-	10	μA
DC current gain $I_C = 70 \text{ mA}, V_{CE} = 8 \text{ V}$	h_{FE}	40	100	220	-

Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified.

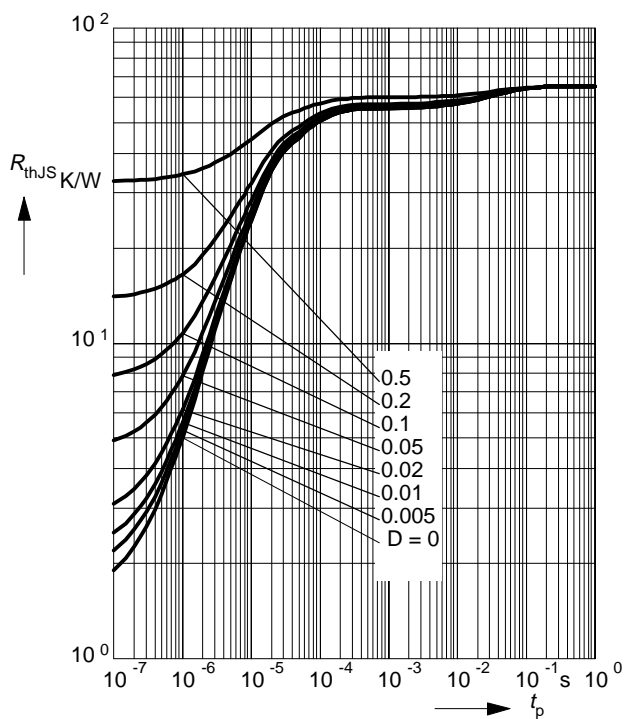
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Transition frequency $I_C = 70 \text{ mA}$, $V_{CE} = 8 \text{ V}$, $f = 500 \text{ MHz}$	f_T	4	5.5	-	GHz
Collector-base capacitance $V_{CB} = 10 \text{ V}$, $f = 1 \text{ MHz}$	C_{cb}	-	1	1.5	pF
Collector-emitter capacitance $V_{CE} = 10 \text{ V}$, $f = 1 \text{ MHz}$	C_{ce}	-	0.4	-	
Emitter-base capacitance $V_{EB} = 0.5 \text{ V}$, $f = 1 \text{ MHz}$	C_{eb}	-	4.4	-	
Noise figure $I_C = 20 \text{ mA}$, $V_{CE} = 8 \text{ V}$, $Z_S = Z_{\text{Sopt}}$ $f = 900 \text{ MHz}$ $f = 1.8 \text{ GHz}$	F	-	2.5 4	-	dB
Power gain ²⁾ $I_C = 70 \text{ mA}$, $V_{CE} = 8 \text{ V}$, $Z_S = Z_{\text{Sopt}}$ $Z_L = Z_{\text{Lopt}}$ $f = 900 \text{ MHz}$ $f = 1.8 \text{ GHz}$	G_{ma}	-	11.5 7	-	
Transducer gain $I_C = 30 \text{ mA}$, $V_{CE} = 8 \text{ V}$, $Z_S = Z_L = 50 \Omega$ $f = 900 \text{ MHz}$ $f = 1.8 \text{ GHz}$	$ S_{21e} ^2$	-	9.5 4	-	
Third order intercept point $I_C = 70 \text{ mA}$, $V_{CE} = 8 \text{ V}$, $f = 900 \text{ MHz}$ $Z_S = Z_L = 50 \Omega$	IP_3	-	35	-	dBm

Total power dissipation $P_{tot} = f(T_A^*, T_S)$

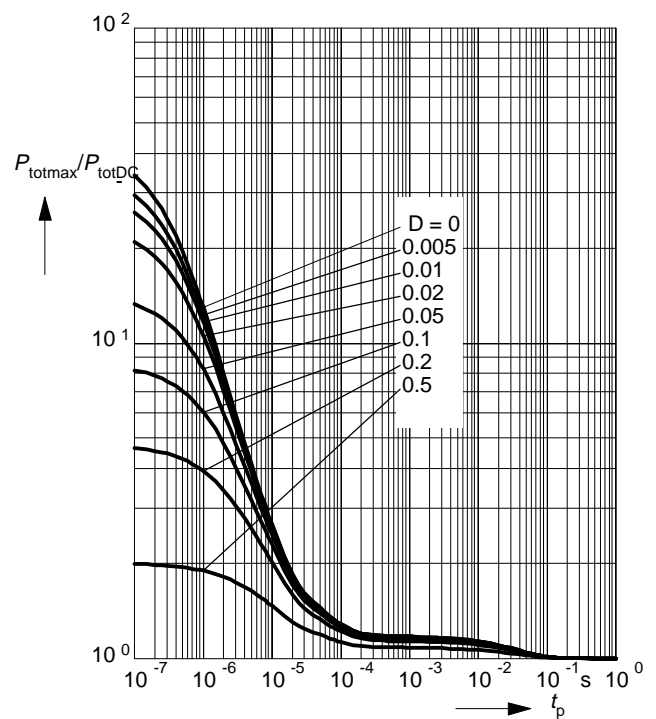
* Package mounted on epoxy



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



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





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