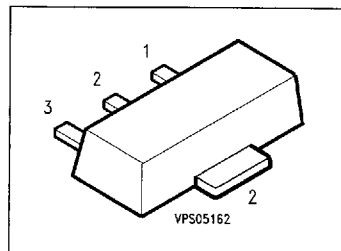


## NPN Silicon RF Transistor

**BFQ 64**

- For low-distortion broadband amplifiers in antenna and telecommunications systems at collector currents from 70 mA to 150 mA.



Type	Marking	Ordering Code (tape and reel)	Pin Configuration			Package <sup>1)</sup>
			1	2	3	
BFQ 64	FC	Q62702-F1061	B	C	E	SOT-89

### Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	$V_{CE0}$	20	V
Collector-base voltage	$V_{CB0}$	30	
Emitter-base voltage	$V_{EB0}$	3	
Collector current	$I_C$	200	mA
Peak collector current, $f \geq 1$ MHz	$I_{CM}$	250	
Base current	$I_B$	25	
Total power dissipation, $T_A \leq 25$ °C <sup>2)</sup>	$P_{tot}$	1	W
Junction temperature	$T_j$	150	°C
Ambient temperature range	$T_A$	- 65 ... + 150	
Storage temperature range	$T_{stg}$	- 65 ... + 150	

### Thermal Resistance

Junction - ambient <sup>2)</sup>	$R_{th JA}$	≤ 125	K/W
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<sup>1)</sup> For detailed information see chapter Package Outlines.

<sup>2)</sup> Package mounted on alumina 15 mm × 16.7 mm × 0.7 mm.

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

**DC Characteristics**

Collector-emitter cutoff current $V_{CE} = 30\text{ V}, V_{BE} = 0$	$I_{CES}$	–	–	1	mA
Collector-base cutoff current $V_{CB} = 15\text{ V}, I_E = 0$	$I_{CBO}$	–	–	200	nA
Emitter-base cutoff current $V_{EB} = 2\text{ V}, I_C = 0$	$I_{EBO}$	–	–	10	$\mu\text{A}$
DC current gain $I_C = 120\text{ mA}, V_{CE} = 5\text{ V}$	$h_{FE}$	25	–	–	–

**AC Characteristics**

Transition frequency $I_C = 100\text{ mA}, V_{CE} = 5\text{ V}, f = 200\text{ MHz}$	$f_T$	–	3	–	GHz
Collector-base capacitance $V_{CB} = 10\text{ V}, V_{BE} = v_{be} = 0, f = 1\text{ MHz}$	$C_{cb}$	–	1	–	pF
Input capacitance $V_{EB} = 0.5\text{ V}, I_C = i_c = 0, f = 1\text{ MHz}$	$C_{ibo}$	–	11.5	–	
Power gain $I_C = 100\text{ mA}, V_{CE} = 10\text{ V}, f = 800\text{ MHz},$ $Z_S = Z_{Sopt}, Z_L = Z_{Lopt}$	$G_{pe}$	–	10	–	dB
Linear output voltage two-tone intermodulation test $I_C = 100\text{ mA}, V_{CE} = 10\text{ V}, d_{IM} = 60\text{ dB}$ $f_1 = 806\text{ MHz}, f_2 = 810\text{ MHz}, Z_S = Z_L = 50\ \Omega$	$V_{o1} = V_{o2}$	–	600	–	mV
Third order intercept point $I_C = 100\text{ mA}, V_{CE} = 10\text{ V}, f = 800\text{ MHz}$	$IP_3$	–	38.5	–	dBm

**Total power dissipation  $P_{\text{tot}} = f(T_A)$**   
Package mounted on alumina

