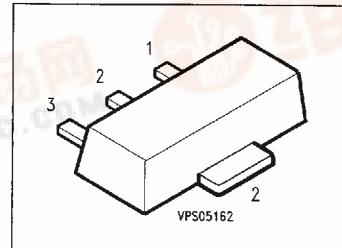# SIEMENS

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.

VPS05162

Type	Marking	Ordering Code (tape and reel)	Pin Configuration			Package[1]
			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, $T_A \leq 25$ ℃[2]	P_{tot}	1	W
Junction temperature	T_J	150	℃
Ambient temperature range	T_A	$-65 \ldots +150$	
Storage temperature range	T_{stg}	$-65 \ldots +150$	

Thermal Resistance

	Symbol		Unit
Junction - ambient [2]	$R_{th\,JA}$	≤ 125	K/W

[1] For detailed information see chapter Package Outlines.
[2] $l \times 16.7$ mm $\times 0.7$ mm.

Electrical Characteristics

at $T_A = 25\,°C$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC Characteristics

Parameter	Symbol	min.	typ.	max.	Unit
Collector-emitter cutoff current $V_{CE} = 30$ V, $V_{BE} = 0$	I_{CES}	–	–	1	mA
Collector-base cutoff current $V_{CB} = 15$ V, $I_E = 0$	I_{CBO}	–	–	200	nA
Emitter-base cutoff current $V_{EB} = 2$ V, $I_C = 0$	I_{EBO}	–	–	10	µA
DC current gain $I_C = 120$ mA, $V_{CE} = 5$ V	h_{FE}	25	–	–	–

AC Characteristics

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

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