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BFQ19

CASE 345-01, STYLE 1
SOT-89

RF TRANSISTOR

NPN SILICON

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	15	V
Collector-Base Voltage	V_{CBO}	20	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current Max (f > 1.0 MHz)	I_{CM}	150	mA
Collector Current — Average	I_{CAV}	75	mA
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−55 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
*Total Device Dissipation, T_A = 25°C Derate above 25°C	P_D	1.0 8.0	Watt mW/°C
Storage Temperature	T_{stg}	150	°C
*Thermal Resistance Junction to Ambient	$R_{\theta JA}$	125	°C/W

*Package mounted on 99.5% alumina 10 x 12 x 0.6 mm.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage (I_C = 10 mA)	$V_{(BR)CEO}$	15	—	V
Collector-Base Breakdown Voltage (I_C = 10 μA)	$V_{(BR)CBO}$	20	—	V
Emitter-Base Breakdown Voltage (I_E = 10 μA)	$V_{(BR)EBO}$	3.0	—	V
Collector Cutoff Current (V_{CB} = 10 V)	I_{CBO}	—	100	nA
Emitter Cutoff Current (V_{EB} = 1.0 V)	I_{EBO}	—	100	nA
ON CHARACTERISTICS				
DC Current Gain (I_C = 50 mA, V_{CE} = 10 V) (I_C = 75 mA, V_{CE} = 10 V)	h_{FE}	 25 25	 — —	—
SMALL-SIGNAL CHARACTERISTICS				
Current-Gain — Bandwidth Product (I_C = 50 mA, V_{CE} = 10 V, f = 500 MHz) (I_C = 75 mA, V_{CE} = 10 V, f = 500 MHz)	f_T	 4.0 4.4	 — —	GHz
Collector-Base Capacitance (V_{CB} = 10 V, f = 1.0 MHz)	C_{cb}	—	1.6	pF
Capacitance Emitter-to-Base (V_{EB} = 0.5 V, f = 1.0 MHz)	C_{eb}	—	5.0	pF
Reverse Transfer Capacitance Common Emitter (V_{CE} = 10 V, I_C = 10 mA, f = 1.0 MHz)	C_{re}	—	1.3	pF
Noise Figure (I_C = 50 mA, V_{CE} = 10 V, f = 500 MHz)	NF	—	3.3	dB