

Silicon NPN RF Transistor

BFQ591

DESCRIPTION

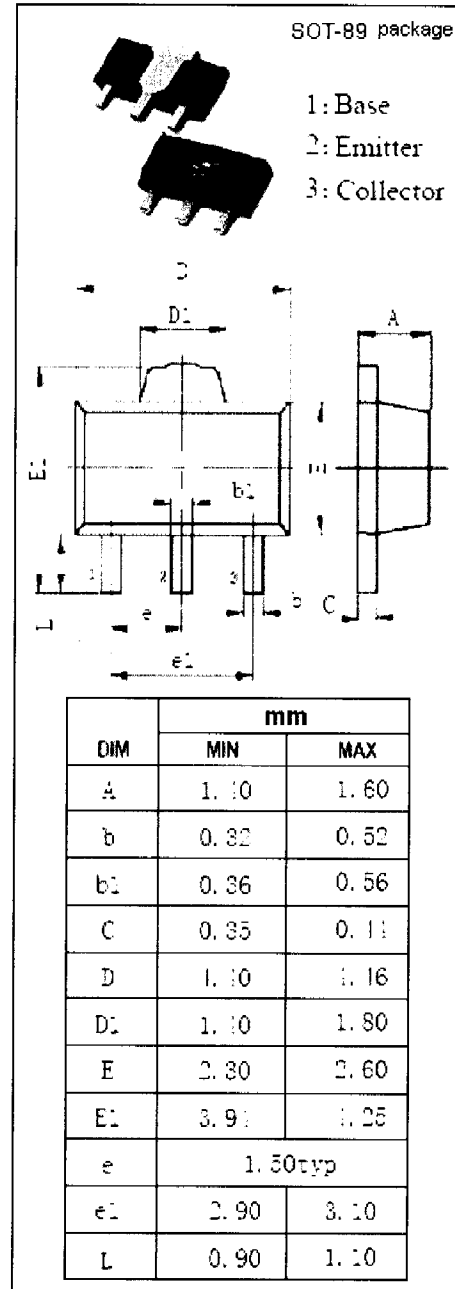
- High Power Gain
- High Current Gain Bandwidth Product
- Low Noise Figure

APPLICATIONS

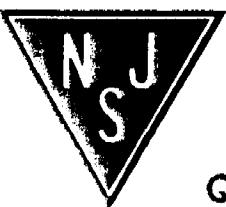
- Designed for use in MATV or CATV amplifiers and RF communications subscribers equipment.

ABSOLUTE MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	20	V
V_{CEO}	Collector-Emitter Voltage	15	V
V_{EBO}	Emitter-Base Voltage	3	V
I_c	Collector Current-Continuous	200	mA
P_c	Collector Power Dissipation @ $T_c=25^{\circ}\text{C}$	2.25	W
T_j	Junction Temperature	175	$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^{\circ}\text{C}$



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ELECTRICAL CHARACTERISTICS

$T_C=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage	$I_C = 0.1\text{mA}; I_B = 0$	15			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 0.1\text{mA}; I_E = 0$	20			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 0.1\text{mA}; I_C = 0$	3			V
I_{CBO}	Collector Cutoff Current	$V_{CB} = 10\text{V}; I_E = 0$			0.1	μA
h_{FE}	DC Current Gain	$I_C = 70\text{mA}; V_{CE} = 8\text{V}$	60		250	
f_T	Current-Gain—Bandwidth Product	$I_C = 70\text{mA}; V_{CE} = 12\text{V}; f = 1\text{GHz}$		7		GHz
PG	Power Gain	$I_C = 70\text{mA}; V_{CE} = 12\text{V}; f = 900\text{MHz}$		11		dB
PG	Power Gain	$I_C = 70\text{mA}; V_{CE} = 12\text{V}; f = 2\text{GHz}$		5.5		dB
C_{re}	Feedback Capacitance	$I_E = 0; V_{CB} = 12\text{V}; f = 1\text{MHz}$		0.8		pF
$ S_{21e} ^2$	Insertion Power Gain	$I_C = 70\text{mA}; V_{CE} = 12\text{V}; f = 1\text{GHz}$		10		dB
V_O	Output Voltage	note		700		mV

Note: $d_{im} = 60\text{ dB}$ (DIN45004B); $V_p = V_o$; $V_q = V_o - 6\text{ dB}$; $f_p = 795.25\text{ MHz}$; $f_q = 803.25\text{ MHz}$; $f_r = 803.25\text{ MHz}$; measured @ $f_{(p+q+r)} = 793.25\text{ MHz}$.

