

# New Jersey Semi-Conductor Products, Inc.

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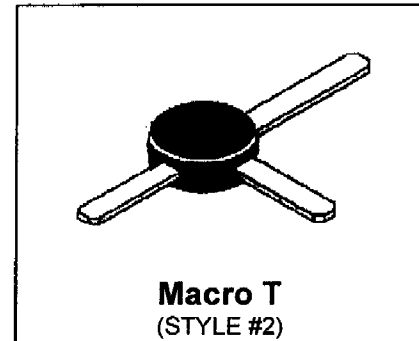
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**BFR96**

## RF & MICROWAVE DISCRETE LOW POWER TRANSISTORS

### Features

- High Current-Gain – Bandwidth Product,  $f_T = 4.5$  GHz (typ) @  $I_C = 50$  mA
- Low Noise Figure –  $NF = 2.4$  dB (typ) @  $f = 0.5$  GHz
- High Power Gain –  $G_{max} = 14.5$  dB (typ) @  $f = 0.5$  GHz




**DESCRIPTION:** Designed primarily for use in high-gain, low noise, small-signal amplifiers. Also used in applications requiring fast switching times.

### ABSOLUTE MAXIMUM RATINGS ( $T_{case} = 25^\circ\text{C}$ )

Symbol	Parameter	Value	Unit
$V_{CEO}$	Collector-Emitter Voltage	15	Vdc
$V_{CBO}$	Collector-Base Voltage	20	Vdc
$V_{EBO}$	Emitter-Base Voltage	3.0	Vdc
$I_C$	Collector Current	100	mA

### Thermal Data

$P_D$	Total Device Dissipation @ $T_C = 100^\circ\text{C}$ Derate above $100^\circ\text{C}$	500 10	mWatts mW/ $^\circ\text{C}$
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NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

**BFR96****ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)****STATIC****(off)**

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BVCEO	Collector-Emitter Breakdown Voltage (I <sub>C</sub> = 1.0 mA <sub>dc</sub> , I <sub>B</sub> = 0)	15	-	-	V <sub>dc</sub>
BVCBO	Collector-Base Breakdown Voltage (I <sub>C</sub> = 0.1 mA <sub>dc</sub> , I <sub>E</sub> = 0)	20	-	-	V <sub>dc</sub>
BVEBO	Emitter-Base Breakdown Voltage (I <sub>E</sub> = 0.1 mA <sub>dc</sub> , I <sub>C</sub> = 0)	3.0	-	-	V <sub>dc</sub>
ICBO	Collector Cutoff Current (V <sub>CB</sub> = 10 V <sub>dc</sub> , V <sub>BE</sub> = 0 V <sub>dc</sub> )	-	-	100	nA

**(on)**

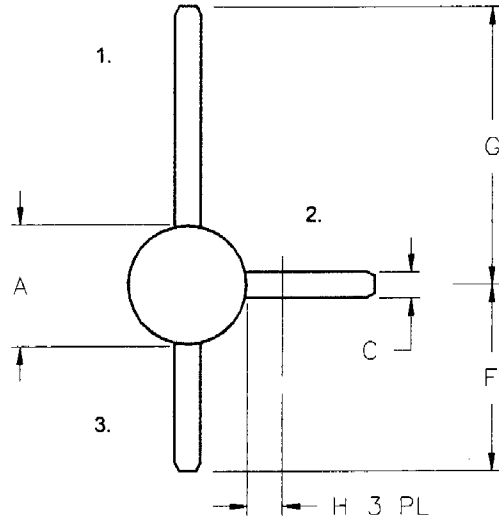
HFE	DC Current Gain (I <sub>C</sub> = 50 mA <sub>dc</sub> , V <sub>CE</sub> = 10 V <sub>dc</sub> )	30	-	200	-
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**DYNAMIC**

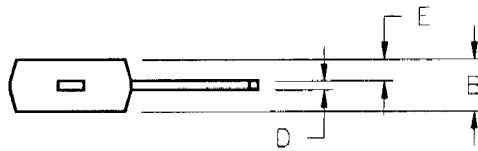
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
F <sub>tau</sub>	Current-Gain – Bandwidth Product (I <sub>C</sub> = 50 mA, V <sub>CE</sub> = 10 V <sub>dc</sub> , f = 0.5 GHz)	-	5.0	-	GHz
CCB	Output Capacitance (V <sub>CB</sub> = 10 V <sub>dc</sub> , I <sub>E</sub> = 0, f = 1.0 MHz)	-	2.6	3.2	pF

PACKAGE STYLE M236

- PIN 1. COLLECTOR
- 2. EMITTER
- 3. BASE



MACRO-T



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.175/4,45	.205/5,21			
B	.075/1,91	.100/2,54			
C	.033/0,84	.039/0,99			
D	.008/0,20	.012/0,31			
E	.030/0,76	.045/1,14			
F	.285/7,24	.320/8,13			
G	.415/10,54	.450/11,43			
H	.065/1,65				