

BF179A
BF179B
BF179C

NPN SILICON ANNULAR TRANSISTORS

... designed for high-frequency applications in color difference signal power stages of color television.

- High Collector-Emitter Breakdown Voltage –
 $V_{CER} = 250 \text{ Vdc (Min) @ } I_C = 4.0 \text{ mAdc} - \text{BF179C}$
- Low Collector-Base Time Constant –
 $r_{bb} C_{b'c} = 100 \text{ ps (Max) @ } I_C = 10 \text{ mAdc}$
- Low Collector Cutoff Current –
 $I_{CBO} = 200 \text{ nAdc (Max) @ } V_{CB} = 160 \text{ Vdc}$

**NPN SILICON
 HIGH-FREQUENCY
 TRANSISTORS**

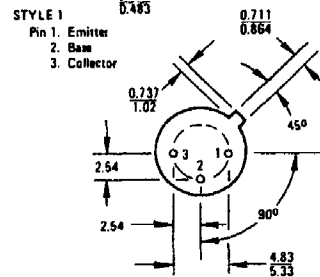
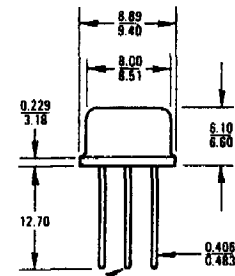


MAXIMUM RATINGS

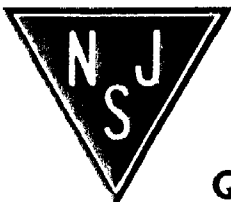
Rating	Symbol	BF179A	BF179B	BF179C	Unit
Collector-Emitter Voltage ($R_{BE} = 1.0 \text{ k ohm}$)	V_{CER}	160	220	250	Vdc
Collector-Emitter Voltage	V_{CES}	160	220	250	Vdc
Emitter-Base Voltage	V_{EB}	5.0			Vdc
Collector Current – Continuous	I_C	50			mAdc
Base Current	I_B	10			mAdc
Total Device Dissipation @ $T_A = 65^\circ\text{C}$	P_D	0.6			Watts
Operating Junction Temperature Range	T_J	200			$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +200			$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{THJcase}$	45	$^\circ\text{C/W}$
Thermal Resistance, Junction to Ambient	R_{THJamb}	220	$^\circ\text{C/W}$



All Dimensions in Millimeters



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.

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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit	
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage ($I_C = 4.0 \text{ mA}$, $R_B = 1.0 \text{ k ohm}$, $R_E = 100 \text{ ohms}$)	BF179A BF179B BF179C	BV _{CE} R	160 220 250	— — —	— — —	V _{dc}
Emitter-Base Breakdown Voltage ($I_E = 100 \mu\text{A}$, $I_C = 0$)		BV _{EB} O	5.0	—	—	V _{dc}
Collector Cutoff Current ($V_{CB} = 160 \text{ Vdc}$, $I_E = 0$)		I _{CBO}	—	—	200	nA _{dc}
ON CHARACTERISTICS						
DC Current Gain ($I_C = 15 \text{ mA}$, $V_{CE} = 10 \text{ Vdc}$)		h _{FE}	20	—	—	—
High Frequency Collector-Emitter Saturation Voltage ($I_C = 20 \text{ mA}$, $R_L = 10 \text{ k ohms}$, $f = 0.5 \text{ MHz}$, $T_J = 150^\circ\text{C}$)		V _{CE(sat)} HF	—	20	—	V _{dc}
DYNAMIC CHARACTERISTICS						
Current-Gain-Bandwidth Product ($I_C = 10 \text{ mA}$, $V_{CE} = 20 \text{ Vdc}$, $f = 500 \text{ kHz}$)		f _T	100	150	—	MHz
Short-Circuit Reverse Capacitance ($V_{CE} = 20 \text{ Vdc}$, $I_C = 1.0 \text{ mA}$, $f = 1.0 \text{ MHz}$)		C _{re}	—	1.3	3.5	pF
Collector-Base Time Constant ($I_C = 10 \text{ mA}$, $V_{CB} = 20 \text{ Vdc}$, $f = 2.5 \text{ MHz}$)		t _{bb'} C _{b'} c	—	—	100	ps