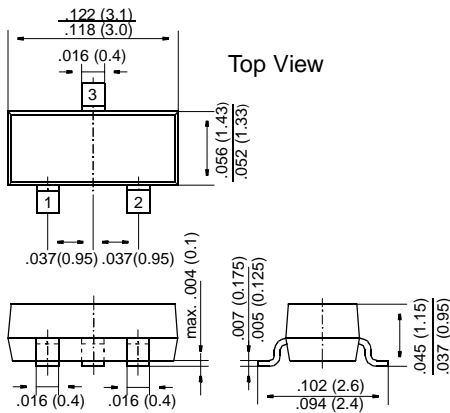


# BF820, BF822

## Small Signal Transistors (NPN)

### SOT-23



Dimensions in inches and (millimeters)

Pin configuration

1 = Base, 2 = Emitter, 3 = Collector.

### FEATURES

- ◆ NPN Silicon Epitaxial Planar Transistors especially suited for application in class-B video output stages of TV receivers and monitors.
- ◆ As complementary types, the PNP transistors BF821 and BF823 are recommended.



### MECHANICAL DATA

**Case:** SOT-23 Plastic Package

**Weight:** approx. 0.008 g

**Marking code**

BF820 = 1V

BF822 = 1X

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

		Symbol	Value	Unit
Collector-Base Voltage	<b>BF820</b>	$V_{CBO}$	300	V
	<b>BF822</b>	$V_{CBO}$	250	V
Collector-Emitter Voltage	<b>BF822</b>	$V_{CEO}$	250	V
Collector-Emitter Voltage	<b>BF820</b>	$V_{CER}$	300	V
Emitter-Base Voltage		$V_{EBO}$	5	V
Collector Current		$I_C$	50	mA
Peak Collector Current		$I_{CM}$	100	mA
Power Dissipation at $T_{SB} = 50\text{ °C}$		$P_{tot}$	300 <sup>1)</sup>	mW
Junction Temperature		$T_j$	150	°C
Storage Temperature Range		$T_S$	-65 to +150	°C

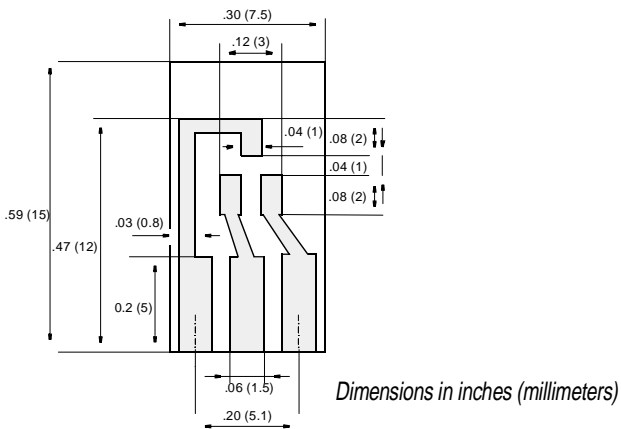
<sup>1)</sup> Device on fiberglass substrate, see layout

# BF820, BF822

## ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

	Symbol	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage at $I_C = 100 \mu A$ , $I_B = 0$	$V_{(BR)CBO}$ $V_{(BR)CBO}$	300 250	– –	– –	V V
Collector-Emitter Breakdown Voltage at $I_C = 10 \text{ mA}$ , $I_E = 0$	$V_{(BR)CEO}$	250	–	–	V
Collector-Emitter Breakdown Voltage at $R_{BE} = 2.7 \text{ k}\Omega$ , $I_C = 10 \text{ mA}$	$V_{(BR)CER}$	300	–	–	V
Emitter-Base Breakdown Voltage at $I_E = 100 \mu A$ , $I_B = 0$	$V_{(BR)EBO}$	5	–	–	V
Collector-Base Cutoff Current at $V_{CB} = 200 \text{ V}$ , $I_E = 0$	$I_{CBO}$	–	–	10	nA
Collector-Emitter Cutoff Current at $R_{BE} = 2.7 \text{ k}\Omega$ , $V_{CE} = 250 \text{ V}$ at $R_{BE} = 2.7 \text{ k}\Omega$ , $V_{CE} = 200 \text{ V}$ , $T_j = 150 \text{ }^\circ\text{C}$	$I_{CER}$ $I_{CER}$			50 10	nA $\mu A$
Collector Saturation Voltage at $I_C = 30 \text{ mA}$ , $I_B = 5 \text{ mA}$	$V_{CEsat}$	–	–	0.6	V
DC Current Gain at $V_{CE} = 20 \text{ V}$ , $I_C = 25 \text{ mA}$	$h_{FE}$	50	–	–	–
Gain-Bandwidth Product at $V_{CE} = 10 \text{ V}$ , $I_C = 10 \text{ mA}$	$f_T$	60	–	–	MHz
Feedback Capacitance at $V_{CE} = 30 \text{ V}$ , $I_C = 0$ , $f = 1 \text{ MHz}$	$C_{re}$	–	–	1.6	pF
Thermal Resistance Junction to Ambient Air	$R_{thJA}$	–	–	430 <sup>1)</sup>	K/W
<sup>1)</sup> Device on fiberglass substrate, see layout					



### Layout for $R_{thJA}$ test

Thickness: Fiberglass 0.059 in (1.5 mm)

Copper leads 0.012 in (0.3 mm)

This datasheet has been download from:

[www.datasheetcatalog.com](http://www.datasheetcatalog.com)

Datasheets for electronics components.