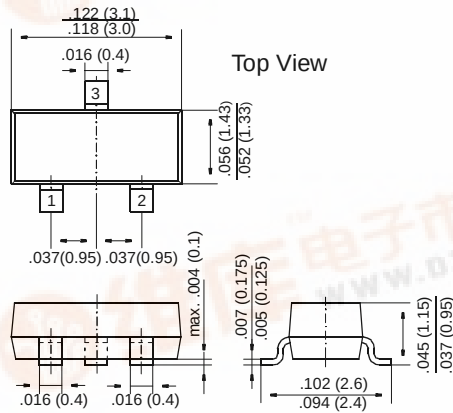


BF820, BF822

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	BF820	V_{CBO}	300	V
	BF822	V_{CBO}	250	V
Collector-Emitter Voltage	BF822	V_{CEO}	250	V
Collector-Emitter Voltage	BF820	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 ¹⁾	mW
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_S	-65 to +150	°C

① Device on fiberglass substrate, see layout

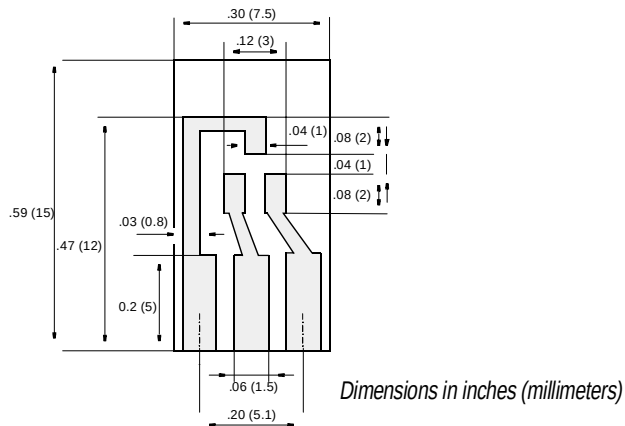
BF820, BF822

ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

	Symbol	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage at $I_C = 100 \mu\text{A}$, $I_B = 0$	BF820 $V_{(BR)CBO}$ BF822 $V_{(BR)CBO}$	300 250	— —	— —	V V
Collector-Emitter Breakdown Voltage at $I_C = 10 \text{ mA}$, $I_E = 0$	BF822 $V_{(BR)CEO}$	250	—	—	V
Collector-Emitter Breakdown Voltage at $R_{BE} = 2.7 \text{ k}\Omega$, $I_C = 10 \text{ mA}$	BF820 $V_{(BR)CER}$	300	—	—	V
Emitter-Base Breakdown Voltage at $I_E = 100 \mu\text{A}$, $I_B = 0$	$V_{(BR)EBO}$	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 μA
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 ¹⁾	K/W

¹⁾ 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)