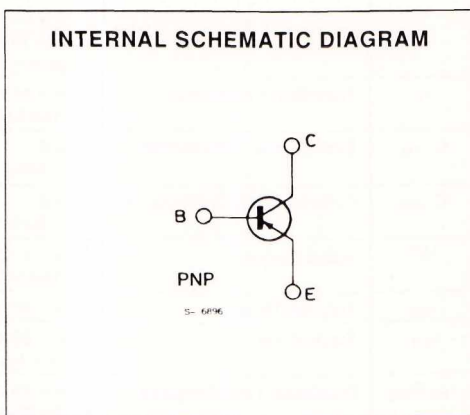
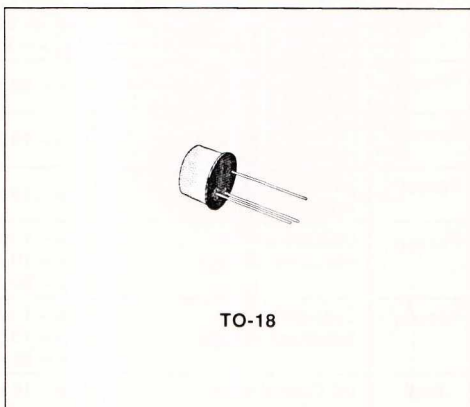


HIGH-FREQUENCY AMPLIFIER

DESCRIPTION

The BFX48 is a silicon planar epitaxial PNP transistor in Jedec TO-18 metal case. It is suitable for a wide range of applications including low noise, low current high gain RF and wide band pulse amplifiers.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	- 30	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	- 30	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	- 5	V
I_C	Collector Current	- 100	mA
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25^\circ\text{C}$ at $T_{case} \leq 25^\circ\text{C}$	0.36	W
		1	W
T_{stg}, T_j	Storage and Junction Temperature	- 65 to 200	$^\circ\text{C}$

THERMAL DATA

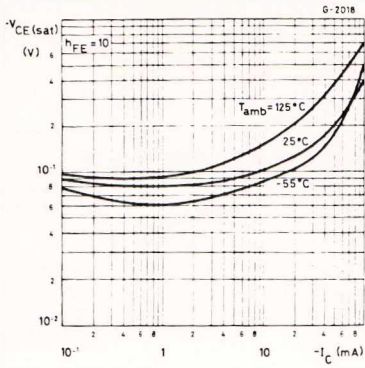
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	175	$^{\circ}C/W$
$R_{th\ j\text{-}amb}$	Thermal Resistance Junction-ambient	Max	486	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\ ^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cutoff Current ($V_{BE} = 0$)	$V_{CE} = -20\ V$ $V_{CE} = -20\ V$ $T_{amb} = 125\ ^{\circ}C$			- 15 - 15	nA μA
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ($I_E = 0$)	$I_C = -10\ \mu A$	- 30			V
$V_{(BR)CEO}^*$	Collector-emitter Breakdown Voltage ($I_B = 0$)	$I_C = -10\ mA$	- 30			V
$V_{(BR)EBO}$	Emitter-base Breakdown Voltage ($I_C = 0$)	$I_E = -10\ \mu A$	- 5			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = -1\ mA$ $I_B = -0.1\ mA$ $I_C = -10\ mA$ $I_B = -1\ mA$ $I_C = -50\ mA$ $I_B = -5\ mA$		- 0.1	- 0.13 - 0.14 - 0.3	V V V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = -1\ mA$ $I_B = -0.1\ mA$ $I_C = -10\ mA$ $I_B = -1\ mA$ $I_C = -50\ mA$ $I_B = -5\ mA$		- 0.77	- 0.75 - 0.9 - 1.1	V V V
h_{FE}^*	DC Current Gain	$I_C = -10\ \mu A$ $V_{CE} = -1\ V$ $I_C = -100\ \mu A$ $V_{CE} = -1\ V$ $I_C = -10\ mA$ $V_{CE} = -1\ V$ $I_C = -50\ mA$ $V_{CE} = -1\ V$ $I_C = -10\ mA$ $V_{CE} = -1\ V$ $T_{amb} = -55\ ^{\circ}C$	40 70 90 20 30	80 130 160 40		
f_T	Transition Frequency	$I_C = -10\ mA$ $V_{CE} = -20\ V$ $f = 100\ MHz$	400	550		MHz
C_{EBO}	Emitter-base Capacitance	$I_C = 0$ $V_{EB} = -0.5\ V$ $f = 1\ MHz$		4	5.5	pF
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $V_{CB} = -10\ V$ $f = 1\ MHz$		2.2	3.5	pF
NF	Noise Figure	$I_C = -1\ mA$ $V_{CE} = -5\ V$ $f = 100\ MHz$ $R_9 = 100\ \Omega$		3.5	6	dB
t_{on}	Turn-on Time	$I_C = -50\ mA$ $I_{B1} = -5\ mA$		20	50	ns
t_{off}	Turn-off Time	$I_C = -50\ mA$ $I_{B1} = -I_{B2} = -5\ mA$		95	160	ns
$\tau_{bb}^*C_{b'c}$	Feedback Time Constant	$I_C = -10\ mA$ $V_{CE} = -20\ V$ $f = 80\ MHz$			40	ps

* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.

Collector-emitter Saturation Voltage.



Base-emitter Saturation Voltage.

