

PNP SILICON PLANAR TRANSISTOR



BFX37

TO-18  
Metal Can Package

Low Level, Low Noise Amplifier

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector Emitter Voltage	$V_{CES}$	90	V
Collector Emitter Voltage	$V_{CEO}$	80	V
Emitter Base Voltage	$V_{EBO}$	6.0	V
Collector Current Continuous	$I_C$	100	mA
Power Dissipation at $T_a=25^\circ\text{C}$	$P_D$	360	mW
Power Dissipation at $T_c=25^\circ\text{C}$	$P_D$	1.2	W
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	- 55 to +200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Junction to Case	$R_{th(j-c)}$	146	$^\circ\text{C/W}$
Junction to Ambient in free air	$R_{th(j-a)}$	486	$^\circ\text{C/W}$

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

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Cut Off Current	$I_{CES}$	$V_{CE}=70\text{V}, V_{BE}=0$			10	nA
		$V_{CE}=70\text{V}, V_{BE}=0, T_a=150^\circ\text{C}$			10	$\mu\text{A}$
Emitter Cut Off Current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			10	nA
Collector Emitter Voltage	$V_{CES}$	$I_C=10\mu\text{A}, V_{BE}=0$	90			V
Collector Emitter Voltage	$V_{CEO}$	$I_C=1\text{mA}, I_B=0$	80			V
Emitter Base Voltage	$V_{EBO}$	$I_E=10\mu\text{A}, I_C=0$	6.0			V
Collector Emitter Saturation Voltage	$*V_{CE(sat)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$			0.25	V
		$I_C=50\text{mA}, I_B=5\text{mA}$			0.40	V
Base Emitter On Voltage	$V_{BE(on)}$	$I_C=1\text{mA}, V_{CE}=5\text{V}$		0.65		V
Base Emitter Saturation Voltage	$*V_{BE(sat)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$			0.9	V
		$I_C=50\text{mA}, I_B=5\text{mA}$			0.95	V
DC Current Gain	$*h_{FE}$	$I_C=1\mu\text{A}, V_{CE}=5\text{V}$		130		
		$I_C=10\mu\text{A}, V_{CE}=5\text{V}$	70		230	
		$I_C=100\mu\text{A}, V_{CE}=5\text{V}$	125			
		$I_C=1\text{mA}, V_{CE}=5\text{V}$	125		280	
		$I_C=10\text{mA}, V_{CE}=5\text{V}$	125			



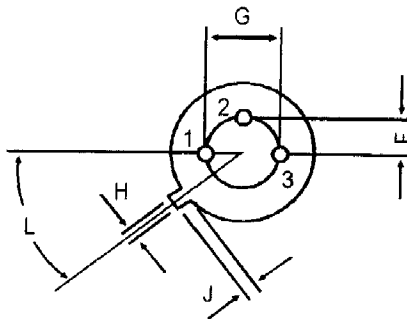
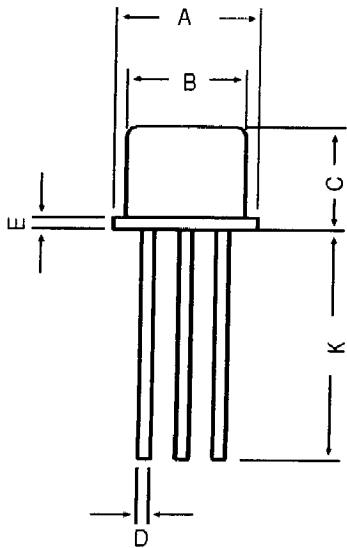
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**SMALL SIGNAL CHARACTERISTICS**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Small Signal Current Gain	$h_{ie}$	$I_C=1mA, V_{CE}=5V, f=1KHz$		250		
Transition Frequency	$f_T$	$I_C=0.5mA, V_{CE}=5V, f=20MHz$	40			MHz
Emitter Base Capacitance	$C_{ebo}$	$V_{EB}=0.5V, I_C=0, f=1MHz$			15	pF
Collector Base Capacitance	$C_{cbo}$	$V_{CB}=5V, I_E=0, f=1MHz$			6.0	pF
Noise Figure	NF	$I_C=20\mu A, V_{CE}=5V, R_g=10k\Omega, f=1KHz$ $f=10 \text{ to } 10000 \text{ Hz}$			2.5 3.5	dB dB
Input Impedance	$h_{ie}$	$I_C=1mA, V_{CE}=5V, f=1KHz$		6.5		k $\Omega$
Reverse Voltage Ratio	$h_{re}$	$I_C=1mA, V_{CE}=5V, f=1KHz$		2.5		$\times 10^{-4}$
Output Admittance	$h_{oe}$	$I_C=1mA, V_{CE}=5V, f=1KHz$		15		$\mu s$

**TO-18 Metal Can Package**



DIM	MIN	MAX
A	5.24	5.84
B	4.52	4.97
C	4.31	5.33
D	0.40	0.53
E	—	0.76
F	—	1.27
G	—	2.97
H	0.91	1.17
J	0.71	1.21
K	12.70	—
L	45 DEG	

All dimensions in mm.