

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	μA
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			



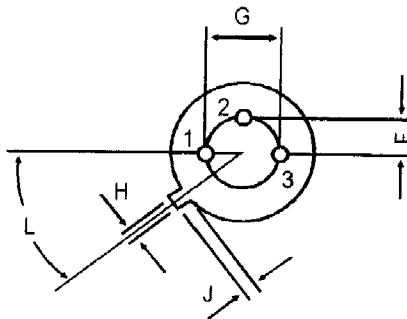
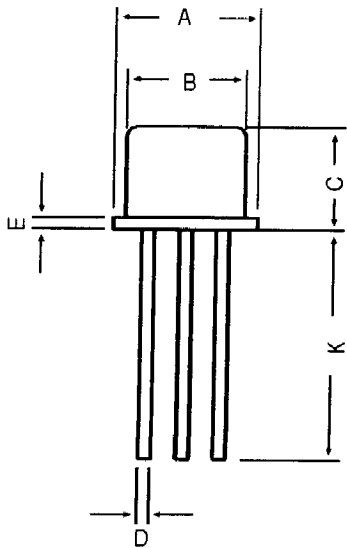
NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

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	$I_C=20\mu A, V_{CE}=5V,$ $R_g=10k\Omega, f=1KHz$ $f=10$ to 10000 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		μs

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.