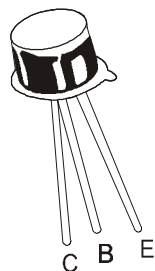


PNP SILICON PLANAR TRANSISTOR

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

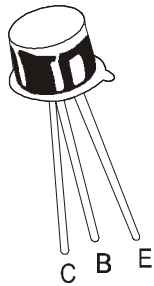
Junction to Case	$R_{th(j-c)}$	146	$^\circ\text{C/W}$
Junction to Ambient in free air	$R_{th(j-a)}$	486	$^\circ\text{C/W}$

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			

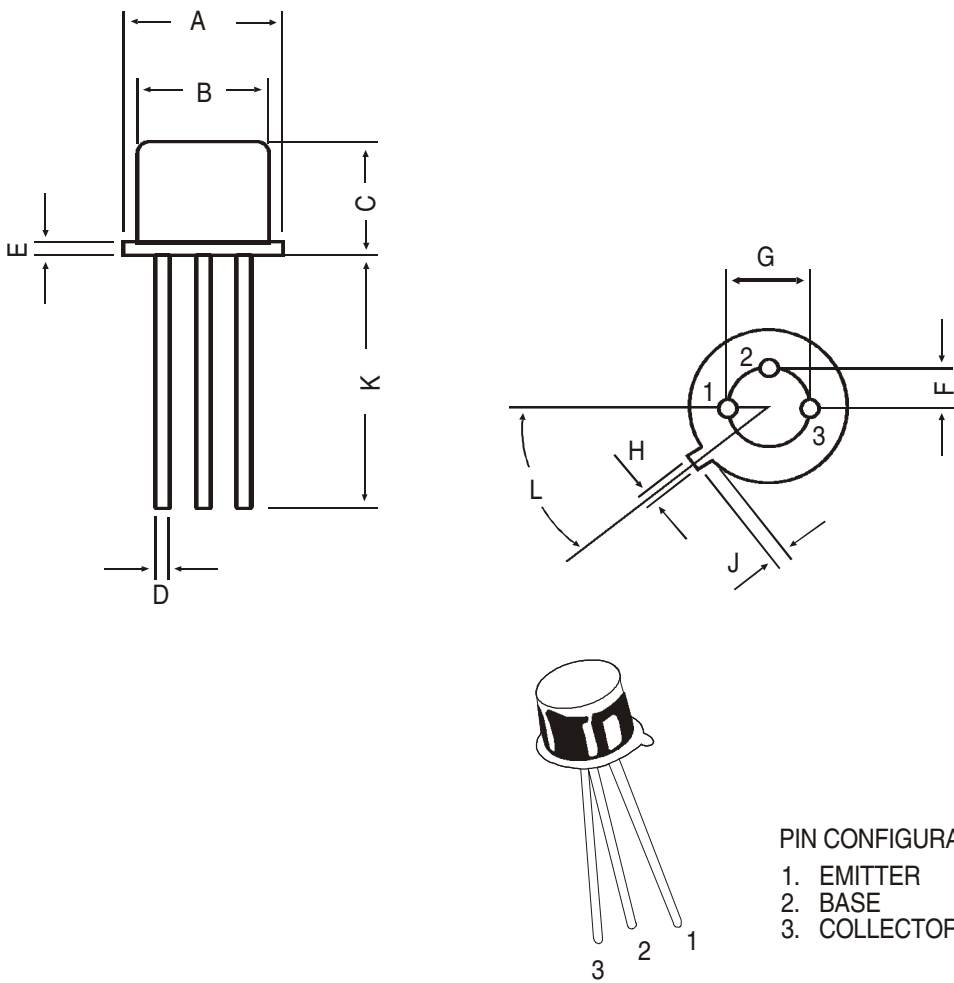
*Pulsed: Pulse duration = 300 μs , duty cycle = 1%

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**SMALL SIGNAL CHARACTERISTICS**

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

TO-18 Metal Can Package



All dimensions in mm.

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	

PIN CONFIGURATION

- 1. EMITTER
- 2. BASE
- 3. COLLECTOR

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-18	1K/polybag	350 gm/1K pcs	3" x 7.5" x 7.5"	5K	17" x 15" x 13.5"	80K	34 kgs

Component Disposal Instructions

- 1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
- 2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.

Telephone + 91-11-2579 6150, 4141 1112 Fax + 91-11-2579 5290, 4141 1119
email@cdil.com www.cdilsemi.com