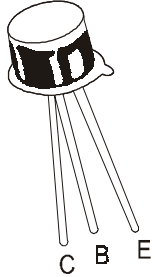


**PNP SILICON PLANAR EPITAXIAL TRANSISTORS**

**BCY70 , 71, 72**



**TO-18  
Metal Can Package**

**General Purpose Industrial Applications.**

**ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless specified otherwise)**

DESCRIPTION	SYMBOL	BCY70	BCY71	BCY72	UNIT
Collector Emitter Voltage	$V_{CEO}$	40	45	25	V
Collector Base Voltage	$V_{CBO}$	50	45	30	V
Emitter Base Voltage	$V_{EBO}$	5	5	5	V
Collector Current Continuous	$I_C$		200		mA
Collector Current Peak	$I_{CM}$		200		mA
Power Dissipation @Ta=25°C	$P_D$		350		mW
Derate Above 25°C			2		mW/°C
Operating Storage and Junction Temperature Range	$T_{stg}$		-65 to +200		°C

**THERMAL RESISTANCE**

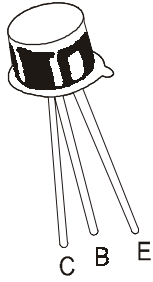
Junction to Ambient	$R_{th(j-a)}$		500		°C/W
Junction to Case	$R_{th(j-c)}$		150		°C/W

**ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise )**

DESCRIPTION	SYMBOL	TEST CONDITION	VALUE			UNIT
			BCY70	BCY71	BCY72	
Collector Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=1mA, I_B=0$	>40	>45	>25	V
Collector Base Breakdown Voltage	$BV_{CBO}$	$I_C=100\mu A, I_E=0$	>50	>45	>30	V
Emitter Base Breakdown Voltage	$BV_{EBO}$	$I_E=100\mu A, I_C=0$	>5	>5	>5	V
Collector Cut off Current	$I_{CBO}$	$V_{CB}=40V, I_E=0$	<10	<50		nA
		$V_{CB}=25V, I_E=0$			<50	nA
		$V_{CB}=40V, I_E=0$	<0.5	<2.0		μA
		$T_j = 100^\circ C$				
		$V_{CB}=25V, I_E=0$			<2	μA
		$T_j = 100^\circ C$				
		$V_{CB}=V_{CBO} \text{ MAX}, I_E=0$	<500	<500	<500	nA
Collector Cut off Current	$I_{CEX}$	$V_{CE} =50V, V_{EB} =3V$	<20			nA

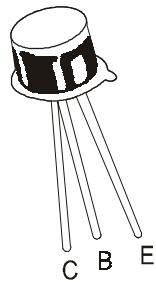
PNP SILICON PLANAR EPITAXIAL TRANSISTORS

BCY70 , 71, 72



TO-18  
Metal Can Package

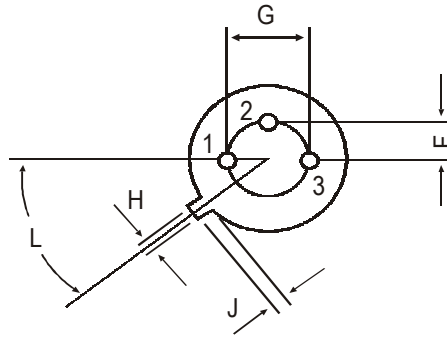
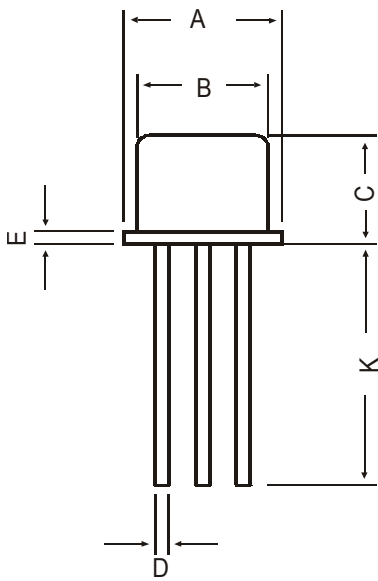
DESCRIPTION	SYMBOL	TEST CONDITION	VALUE			UNIT
			MIN	TYP	MAX	
Emitter Cut off Current	$I_{EBO}$	$V_{EB}=4V, I_C=0$			10	nA
		$V_{EB}=4V, I_C=0,$ $T_j = 100^\circ C$			2	$\mu A$
		$V_{EB}=54V, I_C=0$			500	nA
DC Current Gain	$h_{FE}$	$I_C=10\mu A, V_{CE}=1V$	60			
		$I_C=100\mu A, V_{CE}=1V$	80			
		$I_C=1mA, V_{CE}=1V$	100			
		<b>BCY70</b> <b>BCY71</b> $I_C=10mA, V_{CE}=1V$	100		400	
		$I_C=50mA, V_{CE}=1V$	45			
Collector Emitter Saturation Voltage	$V_{CE(Sat)}$	$I_C=10mA, I_B=1mA$			250	mV
		$I_C=50mA, I_B=5mA$			500	mV
Base Emitter Saturation Voltage	$V_{BE(Sat)}$	$I_C=10mA, I_B=1mA$	600		900	V
		$I_C=50mA, I_B=5mA$			1.2	V
<b><u>DYNAMIC CHARACTERISTICS</u></b>						
Transition Frequency	$f_T$	$I_C=10mA, V_{CE}=20V$ $f=100MHz$	250			MHz
		<b>BCY71</b> $I_C=100\mu A, V_{CE}=20V$ $f=10.7MHz$	15			MHz
Collector Capacitance	$C_c$	$V_{CB}=10V, I_E=0, f=1MHz$			6.0	pF
Emitter Capacitance	$C_e$	$V_{EB}=1.0V, f=1MHz, I_C=0$			8.0	pF
Noise Figure	NF	$I_C=0.1mA, V_{CE}=5V$				
		<b>BCY70, 72</b> <b>BCY71</b> $R_s=2K\Omega, f=10Hz \text{ to } 10KHz$			6	dB
					2	dB
Input Impedance	$h_{ie}$	$I_C=10mA, V_{CE}=10V, f=1KHz$		4.0		$K\Omega$
Reverse Voltage Transfer Ratio	$h_{re}$	$I_C=10mA, V_{CE}=10V, f=1KHz$		2.1		$\times 10^{-4}$
Small Signal Current Gain	$ h_{fe} $	$I_C=10mA, V_{CE}=10V, f=1KHz$		325		
Out put Admittance	$h_{oe}$	$I_C=10mA, V_{CE}=10V, f=1KHz$		20		$\mu mhos$



TO-18  
Metal Can Package

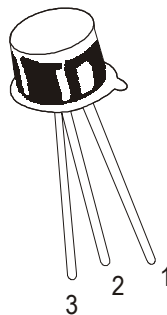
DESCRIPTION	SYMBOL	TEST CONDITION	VALUE			UNIT
			MIN	TYP	MAX	
<b>SWITCHING CHARACTERISTICS</b>						
Delay time	$t_d$	$I_C=10\text{mA}, I_{B\text{on}}=I_{B\text{off}}=1\text{mA}$			35	ns
Rise time	$t_r$	$I_C=10\text{mA}, I_{B\text{on}}=I_{B\text{off}}=1\text{mA}$			35	ns
Turn on Time	$t_{\text{on}}$	$I_C=10\text{mA}, I_{B\text{on}}=I_{B\text{off}}=1\text{mA}$			65	
Storage time	$t_s$	$I_C=10\text{mA}, I_{B\text{on}}=I_{B\text{off}}=1\text{mA}$			350	ns
Fall time	$t_f$	$I_C=10\text{mA}, I_{B\text{on}}=I_{B\text{off}}=1\text{mA}$			80	ns
Turn Off Time	$t_{\text{off}}$	$I_C=10\text{mA}, I_{B\text{on}}=I_{B\text{off}}=1\text{mA}$			420	ns

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

### **Disclaimer**

The product information and the selection guides facilitate selection of the CDIL's Discrete 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 is 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 Discrete 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).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered Trademark of

**Continental Device India Limited**

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

Telephone + 91-11-579 6150 Fax + 91-11-579 9569, 579 5290

e-mail [sales@cdil.com](mailto:sales@cdil.com) [www.cdil.com](http://www.cdil.com)