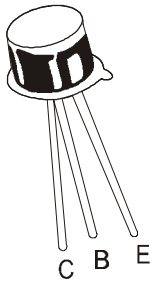
NPN SILICON PLANAR TRANSISTORS

BCY56
BCY57

TO-18
Metal Can Package



For General Purpose, Very High Gain Low Level and Low Noise Applications

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	BCY56	BCY57	UNIT
Collector Emitter Voltage	V_{CEO}	45	20	V
Collector Base Voltage	V_{CBO}	45	25	V
Emitter Base Voltage	V_{EBO}	5		V
Collector Current Continuous	I_C	100		mA
Collector Current Peak	I_{CM}	100		mA
Power Dissipation @ T_a=25ºC Derate Above 25ºC	P_D	300 2		mW mW/ ºC
Power Dissipation @ T_c=25ºC Derate Above 25ºC	P_D	750 5		mW mW/ ºC
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +175		ºC

THERMAL CHARACTERISTICS

Junction to Ambient in free air	$R_{th\ (j\text{-}a)}$	500	ºC/W
Junction to Case	$R_{th\ (j\text{-}c)}$	200	ºC/W

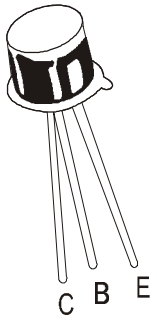
ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	BCY56	BCY57	UNIT
Collector Emitter Voltage	V_{CEO}	I_C=1mA, $I_{B=}$0	>45	>20	V
Collector Base Voltage	V_{CBO}	I_C=100µA, I_E=0	>45	>25	V
Emitter Base Voltage	V_{EBO}	I_E=100µA, I_C=0	>5		V
Collector Cut off Current	I_{CBO}	V_{CB}=20V, I_E=0	<100		nA
Emitter Cut off Current	I_{EBO}	V_{EB}=5V, I_C=0	<100		nA
Base Emitter on Voltage	$V_{BE\ (on)}$	I_C=2mA, V_{CE}=5V	0.6 - 0.7		V
Collector Emitter Saturation Voltage	$V_{CE\ (sat)}$	I_C=10mA, I_B=1mA *I_C=100mA, I_B=10mA	Typ 0.08 Typ 0.20		V V
DC Current Gain	h_{FE}	I_C=10µA, V_{CE}=5V **BCY56** **BCY57** I_C=2mA, V_{CE}=5V **BCY56** **BCY57**	 >40 >100 100 - 450 200 - 800		

***Pulse Test: Pulse width ≤300µs, Duty cycle≤ 2%**

NPN SILICON PLANAR TRANSISTORS

BCY56
BCY57



TO-18
Metal Can Package

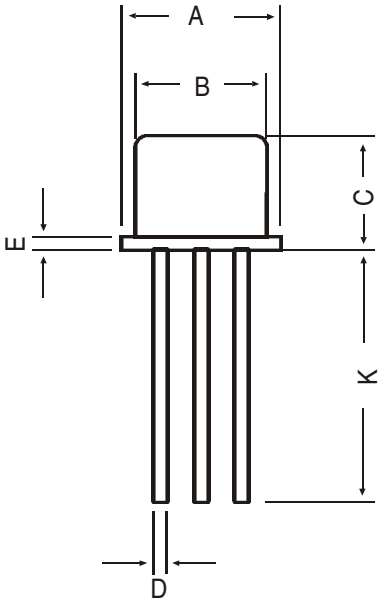
ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

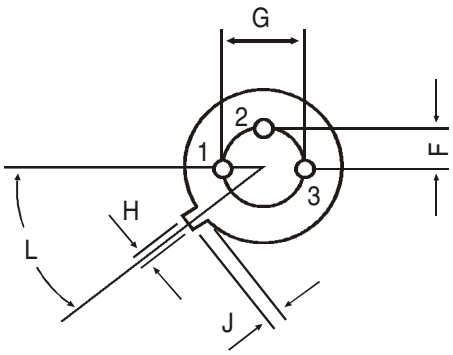
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
DC Current Gain	h_{FE}	I_C=10mA, V_{CE}=5V				
		BCY56	100			
		BCY57	200			

DYNAMIC CHARACTERISTICS

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Small Signal Current Gain	h_{fe}	I_C=2mA, V_{CE}=5V, f=1kHz				
		BCY56	125		500	
		BCY57	240		900	
Input Impedance	h_{ie}	I_C=2mA, V_{CE}=5V, f=1kHz				
		BCY56		3.5		kΩ
		BCY57		7.5		kΩ
Reverse Voltage Transfer Ratio	h_{re}	I_C=2mA, V_{CE}=5V, f=1kHz				
		BCY56		1.75		$x10^{-4}$
		BCY57		3.50		$x10^{-4}$
Output Admittance	h_{oe}	I_C=2mA, V_{CE}=5V, f=1kHz				
		BCY56		17.5		µS
		BCY57		35.0		µS
Noise Figure	NF	I_C=0.2mA,V_{CE}=5V, Rg=2kΩ, f=30kHz to 15.7kHz			5.0	dB
Transition frequency	f_T	I_C=0.5mA,V_{CE}=5V, f=100MHz				
		BCY56		85		MHz
		BCY57		100		MHz
		I_C=10mA,V_{CE}=5V, f=100MHz				
		BCY56		250		MHz
		BCY57		350		MHz
Collector Capacitance	C_C	V_{CB}=5V, I_E=0, f=1MHz		4.5		pF

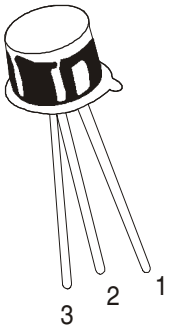
TO-18 Metal Can Package





All diminsions 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 Details

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

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