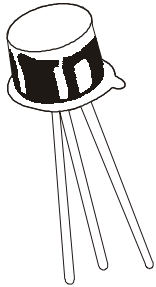


PNP COMPLEMENTARY SILICON PLANAR EPITAXIAL TRANSISTORS

**BCY77, BCY78
BCY79
TO-18**



Complementary BCY58/59

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	BCY77	BCY78	BCY79	UNIT
Collector -Emitter Voltage	VCEO	60	32	45	V
Collector -Emitter Voltage	VCES	60	32	45	V
Emitter -Base Voltage	VEBO	5.0	5.0	5.0	V
Collector Current Continuous	IC	100	200	200	mA
Base Current Continuous	IB	50	50	50	mA
Power Dissipation@ Ta=25 degC	PD		600		mW
@ TC=45 deg C			1.0		W
Operating And Storage Junction Temperature Range	Tj, Tstg		-65 to +200		deg C
THERMAL RESISTANCE					
Junction to Ambient in Free Air	Rth(j-a)		450		K/W
Junction to Case	Rth(j-c)		150		K/W

ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)

DESCRIPTION	SYMBOL	TEST CONDITION	BCY77	BCY78	BCY79	UNIT
Collector -Emitter Voltage	VCEO	IC=2mA, IB=0	>60	>32	>45	V
Collector -Emitter Voltage	VCES	IC=10uA, VBE=0	>60	>32	>45	V
Emitter-Base Voltage	VEBO	IE=1uA, IC=0	>5.0	>5.0	>5.0	V
Collector-Cut off Current	ICES	VCE=VCE max, VBE=0	<100	<100	<100	nA
		VCE=50V, VBE=0	<20	-	.-	nA
		VCE=25V, VBE=0	-	<20	-	nA
		VCE=35V, VBE=0	-	-	<20	nA
		TA=150 deg C				
Emitter Cut off Current	ICEX	VCE=60V, VBE=0	<10	-	.-	uA
		VCE=25V, VBE=0	-	<10	-	uA
		VCE=35V, VBE=0	-	-	<10	uA
		VCE=VCE, max	<20	<20	<20	uA
		VBE=0.2V, Ta=100 deg C				
Emitter Cut off Current	IEBO	VEB=4V, IC=0	<20	<20	<20	nA
Base Emitter on Voltage	VBE(on)	IC=10uA, VCE=5V		TYP 0.55		V
		IC=2mA, VCE=5V		0.6 to 0.75		V
		IC=10mA, VCE=1V		TYP 0.68		V
		IC=50mA, VCE=1V (2)		TYP 0.72		V
		IC=100mA, VCE=1V (1)		TYP 0.75		V

ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)			BCY77-79		
DESCRIPTION	SYMBOL	TEST CONDITION	VALUE	UNIT	
Collector Emitter Saturation Voltage	VCE(Sat)	IC=10mA, IB=0.25mA	<0.25	V	
		IC=50mA, IB=1.25mA (2)	<0.80	V	
		IC=100mA, IB=2.5mA (1)	<0.80	V	
Base Emitter Saturation Voltage	VBE(Sat)	IC=10mA, IB=0.25mA	0.60-0.85	V	
		IC=50mA, IB=1.25mA (2)	0.70-1.2	V	
		IC=100mA, IB=2.5mA (1)	0.70-1.2	V	
DC Current	hFE	IC=10uA, VCE=5V	7	TYP140	
			8	>30	
			9	>40	
			10	>100	
			Only BCY78/79 IC=2mA, VCE=5V	7	120-220
				8	180-310
				9	250-460
			Only BCY78/79 IC=10mA, VCE=1V	10	380-630
				7	>80
				8	120-400
			Only BCY78/79 IC=100mA, VCE=1V (1)	9	160-630
				10	240-1000
				7	>40
			Only BCY78/79 IC=50mA, VCE=1V (2)	8	>45
				9	>60
10	>60				
Small Signal Current Gain	hfe	IC=2mA, VCE=5V, f=1kHz	7	125-250	
			8	175-350	
			9	250-500	
			10	350-700	
			7	1.6-4.5	
Input Impedance	hie	IC=2mA, VCE=5V, f=1kHz	8	2.5-6.0	
			9	3.2-8.5	
			10	TYP 7.5	
Voltage Feedback Ratio	hre	IC=2mA, VCE=5V, f=1kHz	7	TYP1.5	
			8	TYP2.0	
			9	TYP2.0	
Output Admittance	hoe	IC=2mA, VCE=5V, f=1kHz	10	TYP 3.0	
			7	<30	
			8	<50	
			9	<60	
			10	<100	

ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)**BCY77-79**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Noise Figure	NF	VCE=5V, IC=0.2mA RS=2khoms, f=1kHz, B=200Hz		<6.0		dB
Transition Frequency	ft	VCE=5V, IC=10mA, f=100MHz		TYP180		MHz
Collector base Capacitance	Ccbo	VCB=10V, IE=0, f=1MHz		<7.0		pF
Emitter base Capacitance	Cebo	VEB=0.5V, IC=0, f=1MHz		<15		pF

SWITCHING CHARACTERISTICS**BCY77/78/79**

Delay time	td		-	35	-	ns
Rise time	tr	IC=10mA, IB1=IB2=1mA	-	50	-	ns
Turn on time	ton	VBB=3.6V, R1=R2=5kohms	-	-	150	ns
Storage time	ts	RL=990 ohms	-	400	-	ns
Fall time	tf		-	80	-	ns
Turn off time	toff		-	-	800	ns

BCY78/79

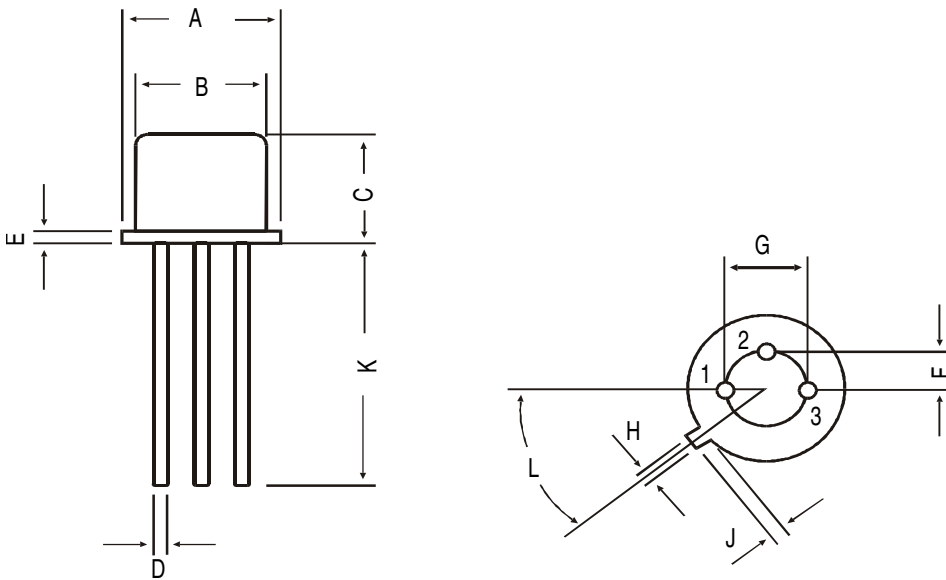
Delay Time	td		-	5.0	-	ns
Rise Time	tr	IC=100mA, IB1=1B2=10mA	-	50	-	ns
Turn-on time	ton	R1=500 ohms, R2=700 ohms	-	-	150	ns
Storage Time	ts	RL=98 ohms, VBB=5V	-	250	-	ns
Fall time	tf		-	200	-	ns
Turn-Off time	toff		-	-	800	ns

BCY77

Delay Time	td		-	15	-	ns
Rise Time	tr	IC=50mA, IB1=1B2=5mA	-	50	-	ns
Turn-on time	ton	R1=1kohms, R2=1.3kohms	-	-	150	ns
Storage Time	ts	RL=195 ohms, VBB=4.7V	-	300	-	ns
Fall time	tf		-	150	-	ns
Turn-Off time	toff		-	-	800	ns

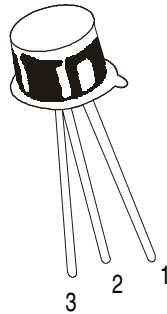
(1) ONLY BCY78/79**(2) ONLY BCY77****Pulse Test : Pulse Width=300us, Duty Cycle=2%**

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"	5.0K	17" x 15" x 13.5"	80.0K	34 kgs

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