Central™
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Manufacturers of World Class Discrete Semiconductors
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BCY78, VII, VIII, IX, X
BCY79, VII, VIII, IX, X

PNP SILICON TRANSISTOR

JEDEC TO-18 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR BCY78, BCY79 Series types are Silicon PNP Epitaxial Planar Transistors, mounted in a hermetically sealed metal case, designed for low noise amplifier and switching applications.

MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

	SYMBOL	BCY78	BCY79	UNITS
Collector-Base Voltage	V_{CBO}	32	45	V
Collector-Emitter Voltage	V_{CEO}	32	45	V
Emitter-Base Voltage	V_{EBO}	5.0		V
Collector Current	I_C	100		mA
Collector Current (Peak)	I_{CM}	200		mA
Base Current (Peak)	I_{BM}	200		mA
Power Dissipation	P_D	340		mW
Power Dissipation(T_C=25°C)	P_D	1.0		W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +200		°C
Thermal Resistance	Θ_{JA}	450		°C/W
Thermal Resistance	Θ_{JC}	150		°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}= Rated V_{CBO}		15	nA
I_{CBO}	V_{CB}= Rated V_{CBO}, T_A=150°C		10	µA
I_{EBO}	V_{EB}=5.0V		20	nA
BV_{CBO}	I_C=10µA (BCY78)	32		V
BV_{CBO}	I_C=10µA (BCY79)	45		V
BV_{CEO}	I_C=2.0mA (BCY78)	32		V
BV_{CEO}	I_C=2.0mA (BCY79)	45		V
BV_{EBO}	I_E=1.0µA	5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=250µA		0.25	V
$V_{CE(SAT)}$	I_C=100mA, I_B=2.5mA		0.80	V
$V_{BE(SAT)}$	I_C=10mA, I_B=250µA	0.60	0.85	V
$V_{BE(SAT)}$	I_C=100mA, I_B=2.5mA	0.70	1.20	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=2.0mA	0.60	0.75	V

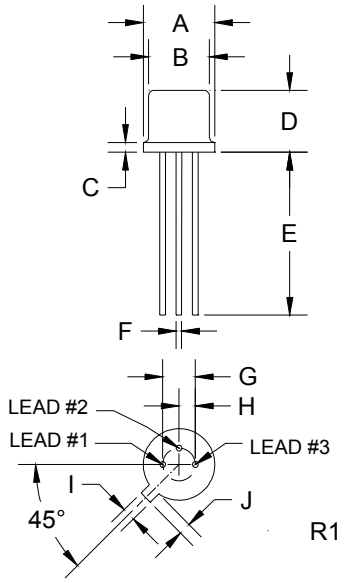
		BCY78-VII BCY79-VII		BCY78-VIII BCY79-VIII		BCY78-IX BCY79-IX		BCY78-X BCY79-X	
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
h_{FE}	V_{CE}=5.0V, I_C=10µA	140 TYP		30		40		100	
h_{FE}	V_{CE}=5.0V, I_C=2.0mA	120	220	180	310	250	460	380	630
h_{FE}	V_{CE}=1.0V, I_C=10mA	80		120	400	160	630	240	1000
h_{FE}	V_{CE}=1.0V, I_C=100mA	40		45		60		60	

(SEE REVERSE SIDE)

ELECTRICAL CHARACTERISTICS Continued

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	100			MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz			7.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz			15	pF
NF	V_{CE}=5.0V, I_C=200μA, R_S=2kΩ, f=1.0kHz, B=200Hz			10	dB
t_{on}	V_{CC}=3.0V, I_C=10mA, I_{B1}=-I_{B2}=1.0mA			100	ns
t_d	V_{CC}=3.0V, I_C=10mA, I_{B1}=-I_{B2}=1.0mA			50	ns
t_r	V_{CC}=3.0V, I_C=10mA, I_{B1}=-I_{B2}=1.0mA			50	ns
t_{off}	V_{CC}=3.0V, I_C=10mA, I_{B1}=-I_{B2}=1.0mA			700	ns
t_s	V_{CC}=3.0V, I_C=10mA, I_{B1}=-I_{B2}=1.0mA			600	ns
t_f	V_{CC}=3.0V, I_C=10mA, I_{B1}=-I_{B2}=1.0mA			100	ns
t_{on}	V_{CC}=10V, I_C=100mA, I_{B1}=-I_{B2}=10mA			100	ns
t_d	V_{CC}=10V, I_C=100mA, I_{B1}=-I_{B2}=10mA			35	ns
t_r	V_{CC}=10V, I_C=100mA, I_{B1}=-I_{B2}=10mA			65	ns
t_{off}	V_{CC}=10V, I_C=100mA, I_{B1}=-I_{B2}=10mA			400	ns
t_s	V_{CC}=10V, I_C=100mA, I_{B1}=-I_{B2}=10mA			300	ns
t_f	V_{CC}=10V, I_C=100mA, I_{B1}=-I_{B2}=10mA			100	ns

TO-18 PACKAGE - MECHANICAL OUTLINE



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A (DIA)	0.209	0.230	5.31	5.84
B (DIA)	0.178	0.195	4.52	4.95
C	-	0.030	-	0.76
D	0.170	0.210	4.32	5.33
E	0.500	-	12.70	-
F (DIA)	0.016	0.019	0.41	0.48
G (DIA)	0.100		2.54	
H	0.050		1.27	
I	0.036	0.046	0.91	1.17
J	0.028	0.048	0.71	1.22

TO-18 (REV: R1)

Lead Code
1. Emitter
2. Base
3. Collector

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