



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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BCY58, VII, VIII, IX, X
BCY59, VII, VIII, IX, X

SILICON
NPN TRANSISTORS



TO-18 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR BCY58 and BCY59 series types are silicon NPN epitaxial planar transistors, mounted in a hermetically sealed metal case, designed for low noise amplifier and switching applications.

MARKING: FULL PART NUMBER

MAXIMUM RATINGS: (T _A =25°C unless otherwise noted)		SYMBOL	BCY58	BCY59	UNITS
Collector-Base Voltage	V _{CB0}		32	45	V
Collector-Emitter Voltage	V _{CEO}		32	45	V
Emitter-Base Voltage	V _{EBO}		7.0		V
Continuous Collector Current	I _C		100		mA
Peak Collector Current	I _{CM}		200		mA
Peak Base Current	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 _{CB0}			10	nA
I _{CBO}	V _{CB} =Rated V _{CB0} , T _A =150°C			10	µA
I _{EBO}	V _{EB} =5.0V			10	nA
BV _{CB0}	I _C =10µA (BCY58)	32			V
BV _{CB0}	I _C =10µA (BCY59)	45			V
BV _{CEO}	I _C =2.0mA (BCY58)	32			V
BV _{CEO}	I _C =2.0mA (BCY59)	45			V
BV _{EBO}	I _E =1.0µA	7.0			V
V _{CE(SAT)}	I _C =10mA, I _B =250µA			0.35	V
V _{CE(SAT)}	I _C =100mA, I _B =2.5mA			0.70	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	0.75		1.20	V

	TEST CONDITIONS	BCY58-VII		BCY58-VIII		BCY58-IX		BCY58-X	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
h _{FE}	V _{CE} =5.0V, I _C =10µA	-	20	-	20	-	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 -

BCY58, VII, VIII, IX, X
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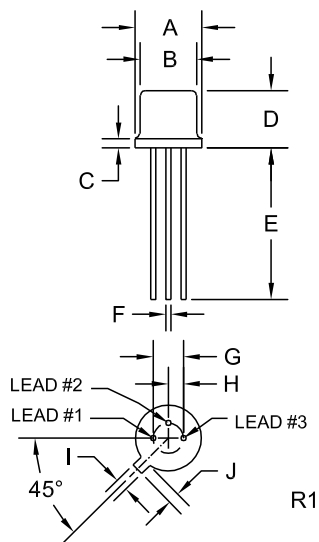
SILICON
NPN TRANSISTORS



ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
f_T	$V_{CE}=5.0\text{V}$, $I_C=10\text{mA}$, $f=100\text{MHz}$	150			MHz
C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1.0\text{MHz}$			5.0	pF
C_{ib}	$V_{EB}=0.5\text{V}$, $I_C=0$, $f=1.0\text{MHz}$			15	pF
NF	$V_{CE}=5.0\text{V}$, $I_C=0.2\text{mA}$, $R_S=2.0\text{k}\Omega$, $f=1.0\text{kHz}$, $B=200\text{Hz}$			10	dB
t_{on}	$V_{CC}=10\text{V}$, $I_C=10\text{mA}$, $I_{B1}=I_{B2}=1.0\text{mA}$		85	150	ns
t_d	$V_{CC}=10\text{V}$, $I_C=10\text{mA}$, $I_{B1}=I_{B2}=1.0\text{mA}$		35		ns
t_r	$V_{CC}=10\text{V}$, $I_C=10\text{mA}$, $I_{B1}=I_{B2}=1.0\text{mA}$		50		ns
t_{off}	$V_{CC}=10\text{V}$, $I_C=10\text{mA}$, $I_{B1}=I_{B2}=1.0\text{mA}$		450	800	ns
t_s	$V_{CC}=10\text{V}$, $I_C=10\text{mA}$, $I_{B1}=I_{B2}=1.0\text{mA}$		400		ns
t_f	$V_{CC}=10\text{V}$, $I_C=10\text{mA}$, $I_{B1}=I_{B2}=1.0\text{mA}$		80		ns
t_{on}	$V_{CC}=10\text{V}$, $I_C=100\text{mA}$, $I_{B1}=I_{B2}=10\text{mA}$		55	150	ns
t_d	$V_{CC}=10\text{V}$, $I_C=100\text{mA}$, $I_{B1}=I_{B2}=10\text{mA}$		5.0		ns
t_r	$V_{CC}=10\text{V}$, $I_C=100\text{mA}$, $I_{B1}=I_{B2}=10\text{mA}$		50		ns
t_{off}	$V_{CC}=10\text{V}$, $I_C=100\text{mA}$, $I_{B1}=I_{B2}=10\text{mA}$		450	800	ns
t_s	$V_{CC}=10\text{V}$, $I_C=100\text{mA}$, $I_{B1}=I_{B2}=10\text{mA}$		250		ns
t_f	$V_{CC}=10\text{V}$, $I_C=100\text{mA}$, $I_{B1}=I_{B2}=10\text{mA}$		20		ns

TO-18 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	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

MARKING:
FULL PART NUMBER

R2 (8-November 2013)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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