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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BC107,A,B
BC108B,C
BC109B,C

NPN SILICON TRANSISTOR

TO-18 CASE

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR BC107, BC108, BC109 series types are small signal NPN silicon transistors, manufactured by the epitaxial planar process, designed for general purpose amplifier applications.

MARKING: FULL PART NUMBER

MAXIMUM RATINGS: (T_A=25°C)	**SYMBOL**	**BC107**	**BC108**	**BC109**	**UNITS**
Collector-Base Voltage	V_{CBO}	50	30	30	V
Collector-Emitter Voltage	V_{CEO}	45	25	25	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	5.0	V
Continuous Collector Current	I_C		200		mA
Power Dissipation	P_D		600		mW
Operating and Storage Junction Temperature	T_J, T_{stg}		-65 to +200		°C
Thermal Resistance	Θ_{JC}		175		°C/W

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

SYMBOL	**TEST CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNITS**
I_{CBO}	V_{CB}=45V (BC107)			15	nA
I_{CBO}	V_{CB}=45V, T_A=125°C (BC107)			4.0	μA
I_{CBO}	V_{CB}=25V (BC108, BC109)			15	nA
I_{CBO}	V_{CB}=25V, T_A=125°C (BC108, BC109)			4.0	μA
BV_{CEO}	I_C=2.0mA (BC107)	45			V
BV_{CEO}	I_C=2.0mA (BC108, BC109)	25			V
BV_{EBO}	I_E=10μA (BC107)	6.0			V
BV_{EBO}	I_E=10μA (BC108, BC109)	5.0			V
$V_{CE(SAT)}$	I_C=10mA, I_B=0.5mA			0.25	V
$V_{CE(SAT)}$	I_C=100mA, I_B=5.0mA			0.6	V
$V_{BE(SAT)}$	I_C=10mA, I_B=0.5mA		0.7	0.83	V
$V_{BE(SAT)}$	I_C=100mA, I_B=5.0mA		1.0	1.05	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=2.0mA	0.55		0.7	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=10mA			0.77	V
h_{FE}	V_{CE}=5.0V, I_C=10μA (BC107B, BC108B, BC109B)	40			
h_{FE}	V_{CE}=5.0V, I_C=10μA (BC108C, BC109C)	100			
h_{FE}	V_{CE}=5.0V, I_C=2.0mA (BC107)	110		450	
h_{FE}	V_{CE}=5.0V, I_C=2.0mA (BC107A)	110		220	
h_{FE}	V_{CE}=5.0V, I_C=2.0mA (BC107B, BC108B, BC109B)	200		450	
h_{FE}	V_{CE}=5.0V, I_C=2.0mA (BC108C, BC109C)	420		800	

R1 (16-August 2012)

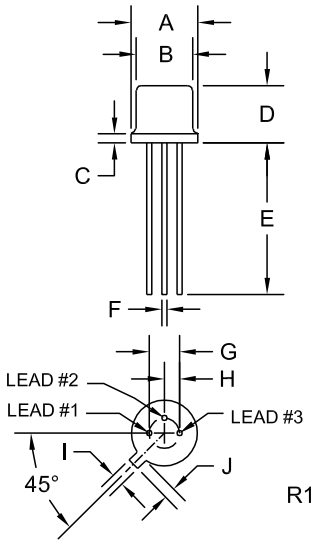
BC107,A,B
BC108B,C
BC109B,C

NPN SILICON TRANSISTOR

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
h_{fe}	V_{CE}=5.0V, I_C=2.0mA, f=1.0kHz (BC107)	125		500	
h_{fe}	V_{CE}=5.0V, I_C=2.0mA, f=1.0kHz (BC107A)	125		260	
h_{fe}	V_{CE}=5.0V, I_C=2.0mA, f=1.0kHz (BC107B, BC108B, BC109B)	240		500	
h_{fe}	V_{CE}=5.0V, I_C=2.0mA, f=1.0kHz (BC108C)		500		
h_{fe}	V_{CE}=5.0V, I_C=2.0mA, f=1.0kHz (BC109C)	450		900	
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	150			MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz			4.5	pF
NF	V_{CE}=5.0V, I_C=0.2mA, R_g=2.0kΩ, B=200Hz, f=1.0kHz (BC107, BC108)			10	dB
NF	V_{CE}=5.0V, I_C=0.2mA, R_g=2.0kΩ, B=200Hz, f=1.0kHz (BC109)			4.0	dB

TO-18 CASE - 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

MARKING:
FULL PART NUMBER

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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