

# Central<sup>TM</sup> Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

BC237, A, B  
BC238, A, B, C  
BC239, B, C

NPN SILICON TRANSISTOR

TO-92-18R CASE (CBE)

## DESCRIPTION

The CENTRAL SEMICONDUCTOR BC237, BC238, BC239 series types are silicon NPN small signal transistors manufactured by the epitaxial planar process designed for general purpose amplifier applications.

MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$  unless otherwise noted)

	SYMBOL	BC237	BC238	BC239	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	50	30	30	V
Collector-Emitter Voltage	V <sub>CES</sub>	50	30	30	V
Collector-Emitter Voltage	V <sub>CEO</sub>	45	20	20	V
Emitter-Base Voltage	V <sub>EBO</sub>	6.0	5.0	5.0	V
Collector Current	I <sub>C</sub>		100		mA
Collector Current (PEAK)	I <sub>CM</sub>		200		mA
Power Dissipation	P <sub>D</sub>		300		mW
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>STG</sub>		-65 TO +150		°C
Thermal Resistance	θ <sub>JA</sub>		420		°C/W

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

SYMBOL	TEST CONDITIONS	BC237		BC238		BC239		UNIT
		MIN	MAX	MIN	MAX	MIN	MAX	
I <sub>CES</sub>	V <sub>CE</sub> =Rated V <sub>CES</sub>		15		15		15	nA
I <sub>CES</sub>	V <sub>CE</sub> =Rated V <sub>CES</sub> , T <sub>A</sub> =125°C		4.0		4.0		4.0	μA
BV <sub>CEO</sub>	I <sub>C</sub> =2.0mA	45		20		20		V
BV <sub>EBO</sub>	I <sub>E</sub> =1.0μA	6.0		5.0		5.0		V
V <sub>CE</sub> (SAT)	I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA		0.25		0.25		0.25	V
V <sub>CE</sub> (SAT)	I <sub>C</sub> =100mA, I <sub>B</sub> =5.0mA		0.60		0.60		0.60	V
V <sub>BE</sub> (SAT)	I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA		0.83		0.83		0.83	V
V <sub>BE</sub> (SAT)	I <sub>C</sub> =100mA, I <sub>B</sub> =5.0mA		1.05		1.05		1.05	V
V <sub>BE</sub> (ON)	V <sub>CE</sub> =5.0V, I <sub>C</sub> =2.0mA	0.55	0.70	0.55	0.70	0.55	0.70	V

		BC237		BC238		BC239		
		MIN	MAX	MIN	MAX	MIN	MAX	UNIT
h <sub>FE</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =2.0mA (BC237A, BC238A)					120	220	
h <sub>FE</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =2.0mA (BC237B, BC238B, BC239B)					180	460	
h <sub>FE</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =2.0mA (BC238C, BC239C)					380	800	

		BC237		BC238		BC239		UNIT
		MIN	MAX	MIN	MAX	MIN	MAX	
f <sub>T</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =10mA, f=100MHz	150		150		150		MHz
C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1.0MHz		4.5		4.5		4.5	pF
C <sub>ib</sub>	V <sub>EB</sub> =0.5V, I <sub>C</sub> =0, f=1.0MHz	8.0	TYP	8.0	TYP	8.0	TYP	pF
NF	V <sub>CE</sub> =5.0V, I <sub>C</sub> =0.2mA, R <sub>GK</sub> =2.0kΩ, f=1.0kHz		10		10		10	dB

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### 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

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### DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2<sup>nd</sup> 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

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### 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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### CONTACT US

#### Corporate Headquarters & Customer Support Team

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