

CQ220-8B  
 CQ220-8D  
 CQ220-8M  
 CQ220-8N

8.0 AMP TRIAC  
 200 THRU 800 VOLTS



TO-220 CASE

# Central<sup>TM</sup>

Semiconductor Corp.

## DESCRIPTION:

The CENTRAL SEMICONDUCTOR CQ220-8B series type is an Epoxy Molded Silicon Triac designed for full wave AC control applications featuring gate triggering in all four (4) quadrants.

MARKING CODE: FULL PART NUMBER

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

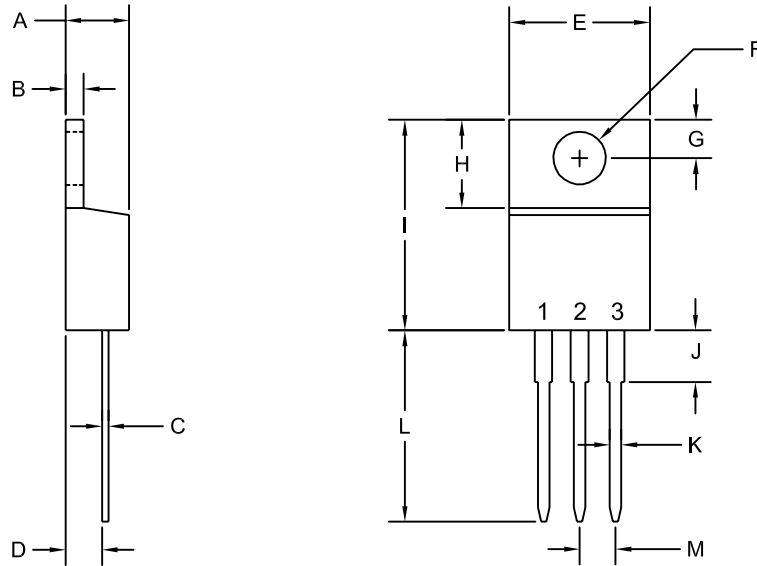
	SYMBOL	CQ220 -8B	CQ220 -8D	CQ220 -8M	CQ220 -8N	UNITS
Peak Repetitive Off-State Voltage	$V_{DRM}$	200	400	600	800	V
RMS On-State Current ( $T_C=90^\circ\text{C}$ )	$I_T(\text{RMS})$		8.0			A
Peak One Cycle Surge ( $t=8.3\text{ms}$ )	$I_{TSM}$		50			A
$I^2t$ Value for Fusing ( $t=8.3\text{ms}$ )	$I^2t$		10			$\text{A}^2\text{s}$
Peak Gate Power ( $t_p=10\mu\text{s}$ )	$P_{GM}$		40			W
Average Gate Power Dissipation	$P_G(\text{AV})$		1.0			W
Peak Gate Current ( $t_p=10\mu\text{s}$ )	$I_{GM}$		4.0			A
Peak Gate Voltage ( $t_p=10\mu\text{s}$ )	$V_{GM}$		16			V
Critical Rate of Rise of On-State Current						
Repetitive ( $f=60\text{Hz}$ )	$di/dt$		10			$\text{A}/\mu\text{s}$
Storage Temperature	$T_{stg}$		-40 to +150			$^\circ\text{C}$
Junction Temperature	$T_J$		-40 to +125			$^\circ\text{C}$
Thermal Resistance	$\theta_{JA}$		60			$^\circ\text{C}/\text{W}$
Thermal Resistance	$\theta_{JC}$		3.2			$^\circ\text{C}/\text{W}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{DRM}$	Rated $V_{DRM}$			10	$\mu\text{A}$
$I_{DRM}$	Rated $V_{DRM}$ , $T_C=125^\circ\text{C}$			500	$\mu\text{A}$
$I_{GT}$	$V_D=12\text{V}$ , $R_L=10\Omega$ , QUAD I, II, III		4.5	20	mA
$I_{GT}$	$V_D=12\text{V}$ , $R_L=10\Omega$ , QUAD IV		17	50	mA
$I_H$	$I_T=100\text{mA}$		4.7	25	mA
$V_{GT}$	$V_D=12\text{V}$ , $R_L=10\Omega$ , QUAD I, II, III		0.95	1.50	V
$V_{GT}$	$V_D=12\text{V}$ , $R_L=10\Omega$ , QUAD IV		1.35	2.50	V
$V_{TM}$	$I_{TM}=11\text{A}$ , $t_p=380\mu\text{s}$		1.30	1.75	V
$dv/dt$	$V_D=2/3 V_{DRM}$ , $R_{GK}=\infty$ , $T_C=125^\circ\text{C}$	5.0			$\text{V}/\mu\text{s}$

R2 (24-September 2004)

TO-220 CASE - MECHANICAL OUTLINE



R2

**LEAD CODE:**

- 1) MT1
- 2) MT2
- 3) GATE

NOTE: TAB IS COMMON  
TO PIN 2 (MT2)

**MARKING CODE:**

**FULL PART NUMBER**

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.170	0.190	4.31	4.82
B	0.045	0.055	1.15	1.39
C	0.013	0.026	0.33	0.65
D	0.083	0.107	2.10	2.72
E	0.394	0.417	10.01	10.60
F (DIA)	0.140	0.157	3.55	4.00
G	0.100	0.118	2.54	3.00
H	0.230	0.270	5.85	6.85
I	0.560	0.625	14.23	15.87
J	-	0.250	-	6.35
K	0.025	0.038	0.64	0.96
L	0.500	0.579	12.70	14.70
M	0.090	0.110	2.29	2.79

TO-220 (REV: R2)

## 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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### CONTACT US

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centalsemi.com](http://www.centalsemi.com)

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[www.centalsemi.com/wwreps](http://www.centalsemi.com/wwreps)

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Summary: The CQ220 series of TRIACS in the TO-220 case is discontinued and now classified as End of Life (EOL).

Although Central Semiconductor Corp. makes every effort to continue to produce devices that have been proclaimed EOL (End of Life) by various manufacturers, it is an accepted industry practice to discontinue certain devices when customer demand falls below a minimum level of sustainability. Accordingly, the following product(s) have been transitioned to End of Life status as part of Central's Product Management Process. Any replacement product will be noted below. The effective date for placing the last purchase order will be six(6) months from the date of this notice and twelve(12) months from the notice date for final shipments; this may be extended if inventory is available.

<b>Central Part Number</b>	<b>Replacement</b>
CQ220-10B	N/A
CQ220-10D	N/A
CQ220-10M	N/A
CQ220-10N	N/A
CQ220-12B	N/A
CQ220-12D	N/A
CQ220-12M	N/A
CQ220-12M SL	N/A
CQ220-12MFP	N/A
CQ220-12M3 SL	N/A
CQ220-12N	N/A
CQ220-16B	N/A
CQ220-16D	N/A
CQ220-16M	N/A
CQ220-16M SL	N/A
CQ220-16MFP	N/A
CQ220-16N	N/A
CQ220-25B	N/A
CQ220-25D	N/A
CQ220-25M	N/A
CQ220-25MFP	N/A
CQ220-25N	N/A
CQ220-40M	N/A
CQ220-40MFP	N/A
CQ220-40N	N/A
CQ220-40NFP	N/A
CQ220-6BS	N/A
CQ220-6D	N/A
CQ220-6DS	N/A
CQ220-6MS	N/A
CQ220-6NS	N/A
CQ220-8B	N/A
CQ220-8B W/DC SL	N/A
CQ220-8D	N/A
CQ220-8DS	N/A
CQ220-8M	CQ220-8M      H
CQ220-8MFP	N/A
CQ220-8M3 SL	N/A

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<b>Central Part Number</b>	<b>Replacement</b>
CQ220-8N	N/A
CQ220-8NR	N/A
CQ220I-10B	N/A
CQ220I-10D	N/A
CQ220I-10M	N/A
CQ220I-10N	N/A
CQ220I-100	N/A
CQ220I-12B	N/A
CQ220I-12D	N/A
CQ220I-12M	N/A
CQ220I-12N	N/A
CQ220I-16B	N/A
CQ220I-16D	N/A
CQ220I-16M	N/A
CQ220I-16N	N/A
CQ220I-6BS	N/A
CQ220I-6D	N/A
CQ220I-6DS	N/A
CQ220I-6MS	N/A
CQ220I-6NS	N/A
CQ220I-8B	N/A
CQ220I-8D	N/A
CQ220I-8DR	N/A
CQ220I-8M	N/A
CQ220I-8N	N/A
CQ220L-8DS	N/A

Central would be happy to assist you by providing additional information or technical data to help locate an alternate source if we have no replacement available. Please email your requests to [engineering@centrasemi.com](mailto:engineering@centrasemi.com).