

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

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Manufacturers of World Class Discrete Semiconductors

CQ220I -12B  
CQ220I -12D  
CQ220I -12M  
CQ220I -12N

ISOLATED TAB TRIAC  
12 AMP, 200 THRU 800 VOLTS

JEDEC TO-220AB CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR CQ220I-12B series type is an Epoxy Molded Silicon Triac designed for full wave AC control applications featuring gate triggering in all four (4) quadrants. This device is mounted in a TO-220 case with an isolated mounting tab.

## MAXIMUM RATINGS (T<sub>C</sub>=25°C unless otherwise noted)

	SYMBOL	CQ220I -12B	CQ220I -12D	CQ220I -12M	CQ220I -12N	UNITS
Peak Repetitive Off-State Voltage	V <sub>DRM</sub>	200	400	600	800	V
RMS On-State Current (T <sub>C</sub> =90°C)	I <sub>T(RMS)</sub>			12		A
Peak One Cycle Surge (t=10ms)	I <sub>TSM</sub>			125		A
I <sup>2</sup> t Value for Fusing (t=10ms)	I <sup>2</sup> t			72		A <sup>2</sup> s
Peak Gate Power (tp=10μs)	P <sub>GM</sub>			40		W
Average Gate Power Dissipation	P <sub>G(AV)</sub>			1.0		W
Peak Gate Current (tp=10μs)	I <sub>GM</sub>			4.0		A
Peak Gate Voltage (tp=10μs)	V <sub>GM</sub>			16		V
Critical Rate of Rise of On-State Current						
Repetitive (F=50Hz)	di/dt			10		A/μs
Storage Temperature	T <sub>stg</sub>		-40 to +150			°C
Junction Temperature	T <sub>J</sub>		-40 to +110			°C
Thermal Resistance	θ <sub>J-A</sub>		60			°C/W
Thermal Resistance	θ <sub>J-C</sub>		3.3			°C/W
Isolation Voltage	V <sub>ISO</sub>		2500			V <sub>(RMS)</sub>

## ELECTRICAL CHARACTERISTICS (T<sub>C</sub>=25°C unless otherwise noted)

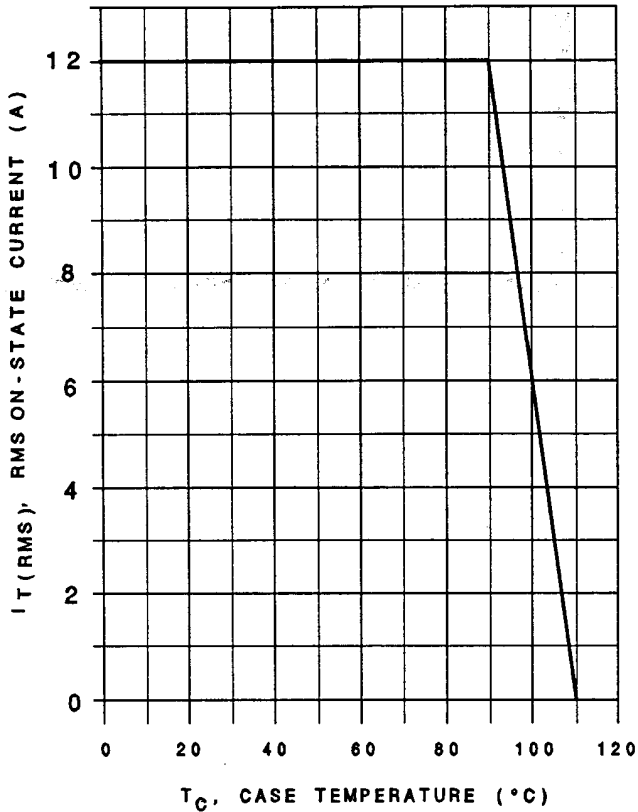
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I <sub>DRM</sub>	Rated V <sub>DRM</sub>			0.01	mA
I <sub>DRM</sub>	Rated V <sub>DRM</sub> , T <sub>C</sub> =110°C			0.50	mA
I <sub>GT</sub>	V <sub>D</sub> =12V, R <sub>L</sub> =33Ω, QUAD I,II,III			25	mA
I <sub>GT</sub>	V <sub>D</sub> =12V, R <sub>L</sub> =33Ω, QUAD IV			50	mA
I <sub>H</sub>	I <sub>T</sub> =100mA			25	mA
V <sub>GT</sub>	V <sub>D</sub> =12V, R <sub>L</sub> =33Ω, QUAD I,II,III,IV			1.50	V
V <sub>TM</sub>	I <sub>TM</sub> =17A, tp=10ms			1.50	V
dV/dt	V <sub>D</sub> =2/3 V <sub>DRM</sub> , R <sub>GK</sub> =∞, T <sub>C</sub> =110°C	100			V/μs
dV/dt(c)	V <sub>D</sub> =Rated V <sub>DRM</sub> , I <sub>TM</sub> =17A, di/dt(c)=6.5A/ms T <sub>C</sub> =80°C, Gate open		5.0		V/μs

(OVER)

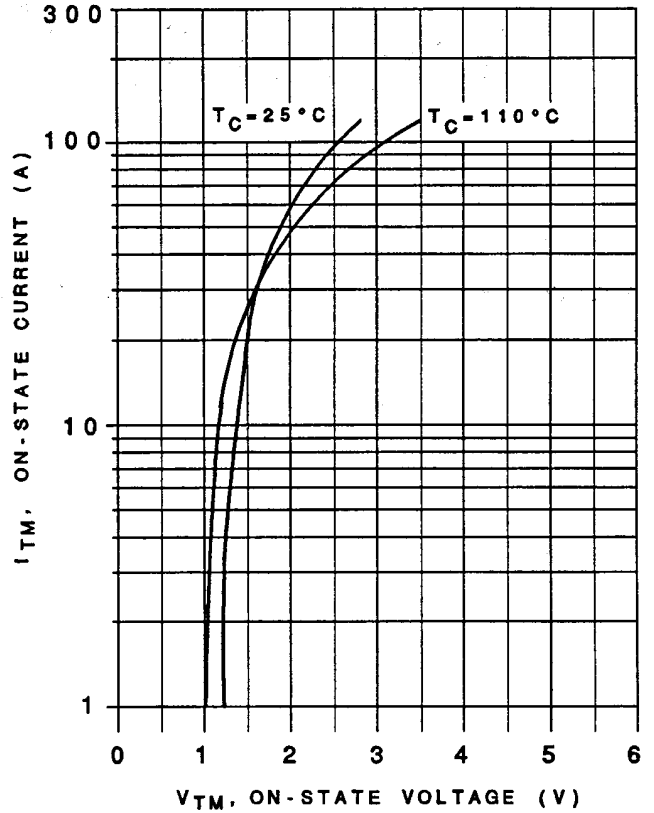
R3

# CQ220I-12B SERIES RATING AND CHARACTERISTIC CURVES

**RMS ON-STATE CURRENT vs. CASE TEMPERATURE**

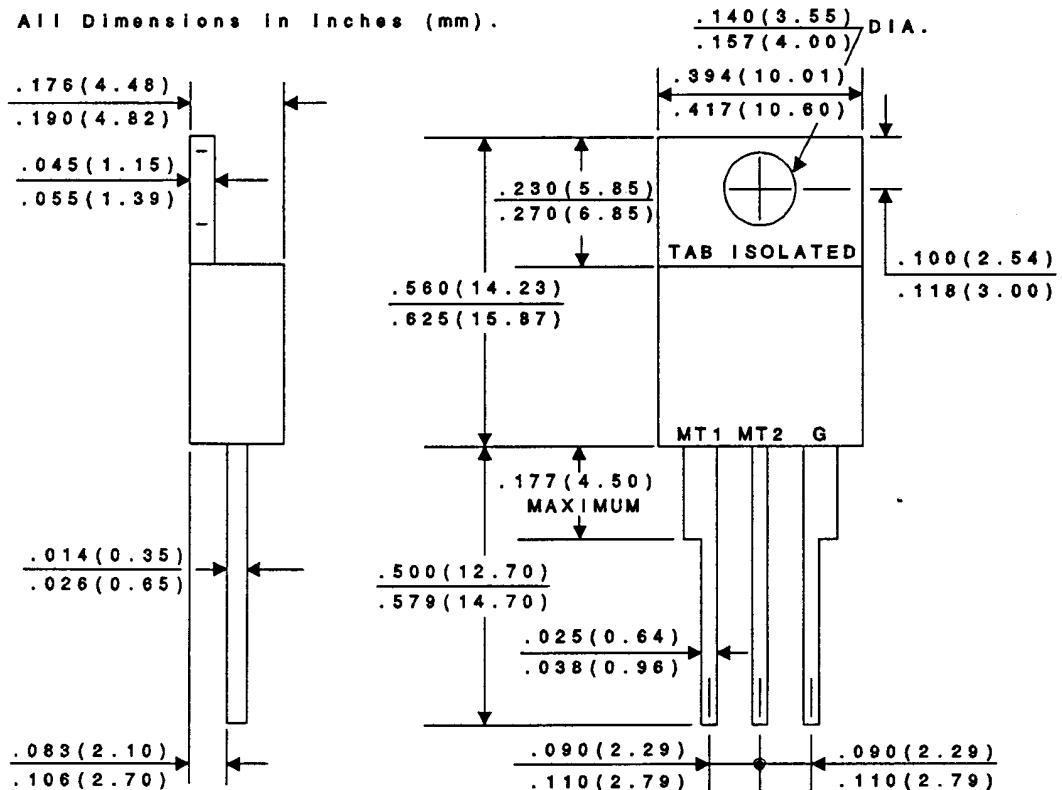


**MAXIMUM ON-STATE CHARACTERISTICS**



## MECHANICAL DIMENSIONS

All Dimensions in Inches (mm).



## 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

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# Product End of Life Notification

<b>PDN ID:</b>	PDN01054
<b>Notification Date:</b>	8/24/16
<b>Last Buy Date:</b>	2/24/17
<b>Last Shipment Date</b>	8/24/17

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

\*\*\* CONTINUED \*\*\*

DISCLAIMER: This End of Life (EOL) notification is in accordance with JEDEC standard JESD48 - Product Discontinuance. Central Semiconductor Corp. will make every effort to offer life-time buy (LTB) opportunities and/or offer replacement devices to existing customers for discontinued devices, however, one or both may not be possible for all devices. Please contact your local Central Semiconductor sales representative for LTB opportunities/additional information.

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\*\*\* CONTINUED FROM PRIOR PAGE \*\*\*

<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).

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