

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

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Manufacturers of World Class Discrete Semiconductors

CQ220I-8BR  
CQ220I-8DR  
CQ220I-8MR  
CQ220I-8NR

ISOLATED TAB TRIAC  
8.0 AMP, 200 THRU 800 VOLTS

JEDEC TO-220AB CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR CQ220I-8BR 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 -8BR	CQ220I -8DR	CQ220I -8MR	CQ220I -8NR	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>			8.0		A
Peak One Cycle Surge (t = 10ms)	I <sub>TSM</sub>			80		A
I <sup>2</sup> t Value for Fusing (t = 10ms)	I <sup>2</sup> t			32		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>		4.4			°C/W
Isolation Voltage	V <sub>ISO</sub>		2500			V <sub>(RMS)</sub>

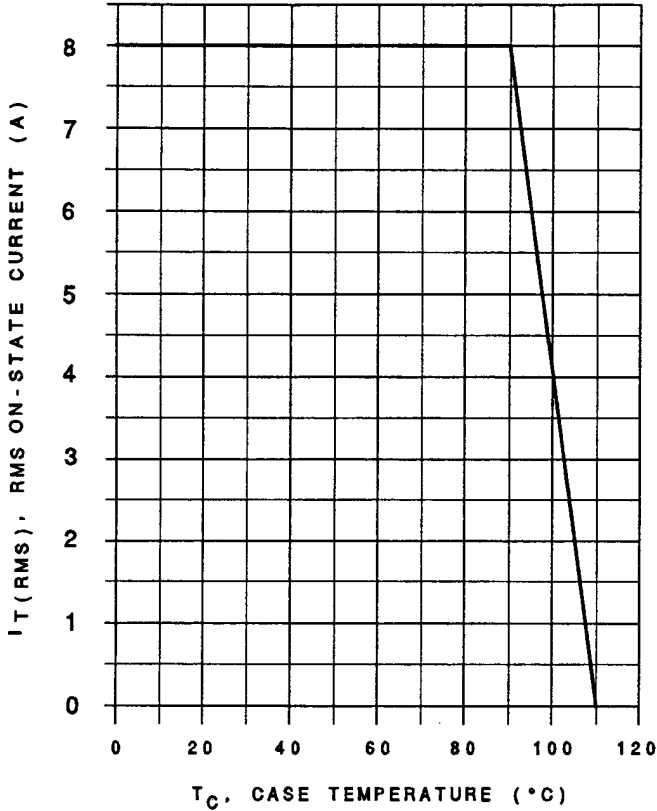
## ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25°C unless otherwise noted)

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			0.75	mA
I <sub>GT</sub>	V <sub>D</sub> = 12V, R <sub>L</sub> = 33Ω, QUAD I,II,III			10	mA
I <sub>GT</sub>	V <sub>D</sub> = 12V, R <sub>L</sub> = 33Ω, QUAD IV			25	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> = 11A, tp = 10ms			1.75	V
dv/dt	V <sub>D</sub> = 2/3 V <sub>DRM</sub> , R <sub>GK</sub> = ∞, T <sub>C</sub> = 110°C	10			V/μs

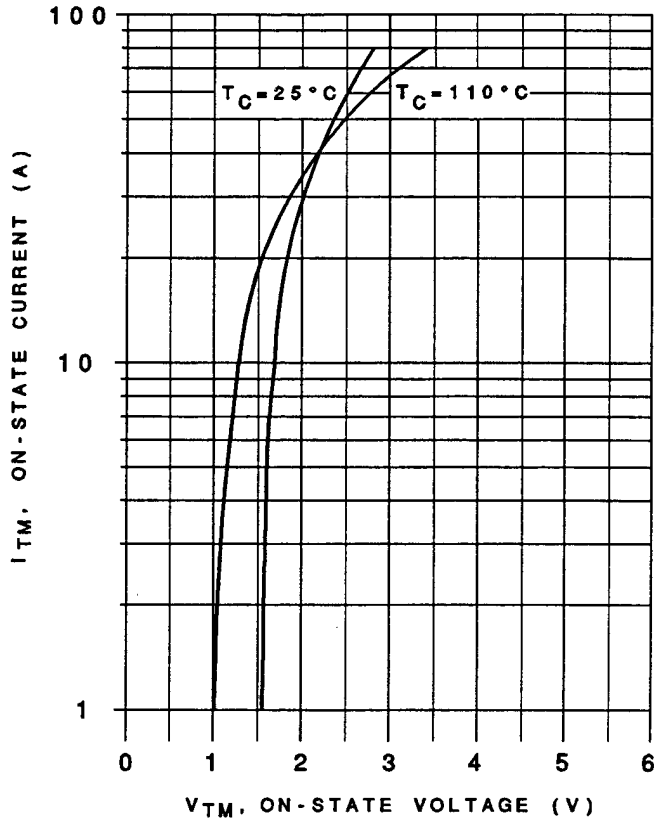
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# CQ220I-8BR SERIES RATING AND CHARACTERISTIC CURVES

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



**MAXIMUM ON-STATE CHARACTERISTICS**



## MECHANICAL DIMENSIONS

All Dimensions in Inches (mm).

