

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

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Manufacturers of World Class Discrete Semiconductors

CQ39BT  
CQ39DT  
CQ39MT

4.0 AMP TRIAC  
200 THRU 600 VOLTS

JEDEC TO-39 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR CQ39BT series type is a Hermetically Sealed Silicon Triac designed for full wave AC control applications featuring gate triggering in all four (4) quadrants.

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

	SYMBOL	CQ39BT	CQ39DT	CQ39MT	UNITS
Peak Repetitive Off-State Voltage	V <sub>DRM</sub>	200	400	600	V
RMS On-State Current (T <sub>C</sub> = 80°C)	I <sub>T(RMS)</sub>		4.0		A
Peak One Cycle Surge (t = 10ms)	I <sub>TSM</sub>		35		A
I <sup>2</sup> t Value for Fusing (t = 10ms)	I <sup>2</sup> t		2.0		A <sup>2</sup> s
Peak Gate Power (tp = 10μs)	P <sub>GM</sub>		3.0		W
Average Gate Power Dissipation	P <sub>G(AV)</sub>		0.2		W
Peak Gate Current (tp = 10μs)	I <sub>GM</sub>		1.2		A
Storage Temperature	T <sub>stg</sub>		-40 to +150		°C
Junction Temperature	T <sub>J</sub>		-40 to +125		°C
Thermal Resistance	θ <sub>J-A</sub>		160		°C/W
Thermal Resistance	θ <sub>J-C</sub>		9.0		°C/W

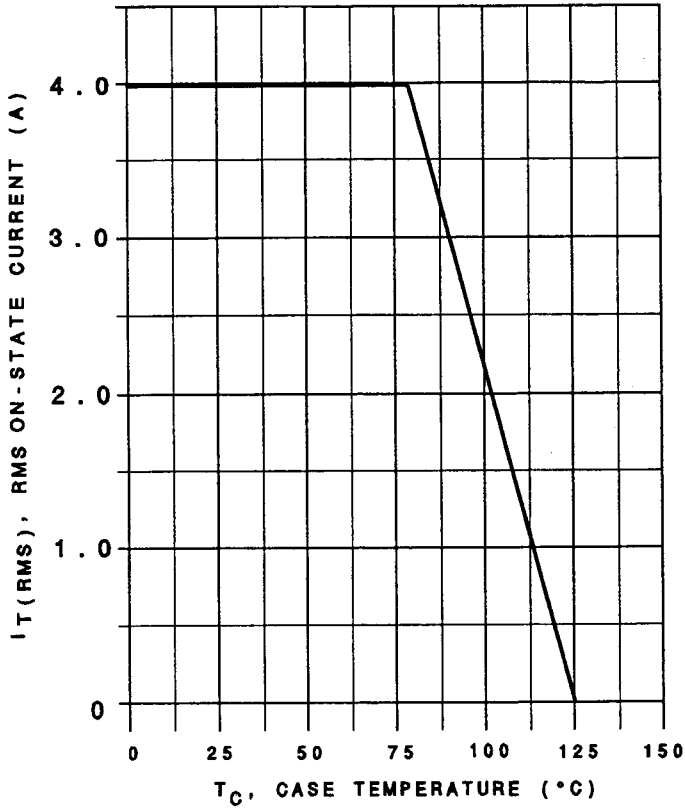
## ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I <sub>DRM</sub>	Rated V <sub>DRM</sub> , R <sub>GK</sub> = 1KΩ			5.00	μA
I <sub>DRM</sub>	Rated V <sub>DRM</sub> , R <sub>GK</sub> = 1KΩ, T <sub>C</sub> = 125°C			200	μA
I <sub>GT</sub>	V <sub>D</sub> = 12V, QUAD I,II,III,IV			3.00	mA
I <sub>H</sub>	R <sub>GK</sub> = 1KΩ			3.00	mA
V <sub>GT</sub>	V <sub>D</sub> = 12V, QUAD I,II,III,IV			2.00	V
V <sub>TM</sub>	I <sub>TM</sub> = 4.5A			2.10	V
dv/dt	V <sub>D</sub> = 2/3 V <sub>DRM</sub> , T <sub>C</sub> = 125°C	30			V/μs

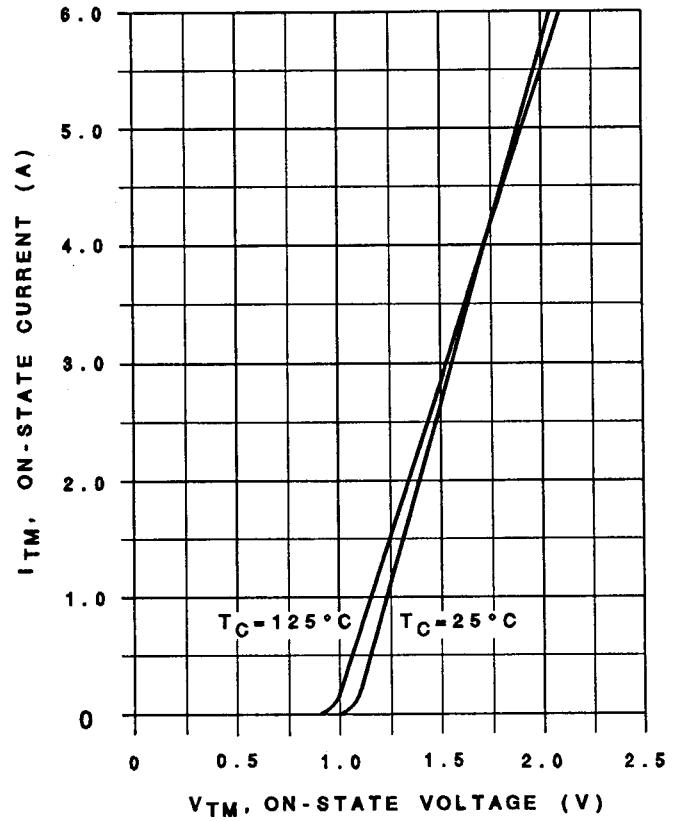
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# CQ39BT SERIES RATING AND CHARACTERISTIC CURVES

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



**MAXIMUM ON-STATE CHARACTERISTICS**



**MECHANICAL DIMENSIONS**

ALL DIMENSIONS  
IN INCHES (mm).

