

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

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Manufacturers of World Class Discrete Semiconductors

CS220-12B  
CS220-12D  
CS220-12M  
CS220-12N  
CS220-12P

SILICON CONTROLLED RECTIFIER  
12 AMP, 200 THRU 1000 VOLTS

JEDEC TO-220AB CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR CS220-12B series type is an Epoxy Molded Silicon Controlled Rectifier designed for sensing circuit applications and control systems.

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

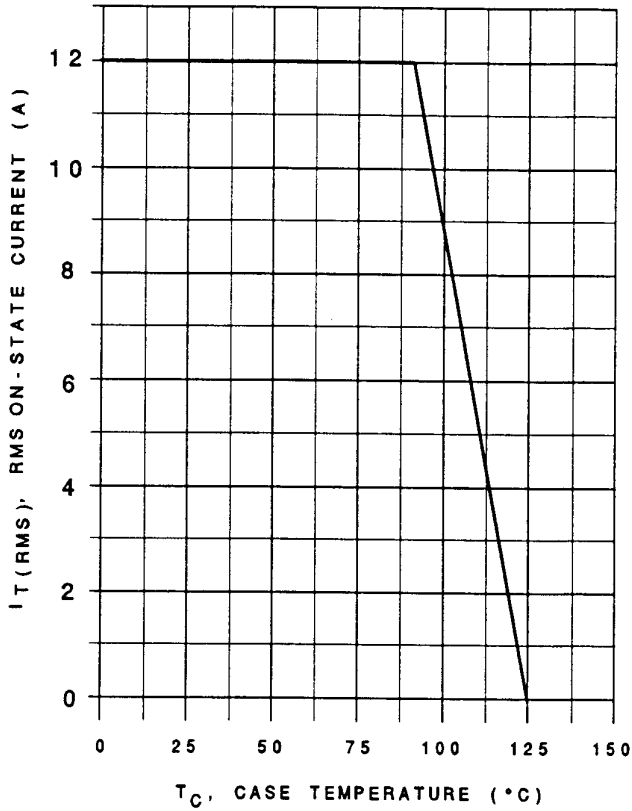
	<u>SYMBOL</u>	<u>CS220 -12B</u>	<u>CS220 -12D</u>	<u>CS220 -12M</u>	<u>CS220 -12N</u>	<u>CS220 -12P</u>	<u>UNITS</u>
Peak Repetitive Off-State Voltage	V <sub>DRM</sub> , V <sub>RRM</sub>	200	400	600	800	1000	V
RMS On-State Current (T <sub>C</sub> = 90°C)	I <sub>T(RMS)</sub>			12			A
Peak One Cycle Surge (t = 10ms)	I <sub>TSM</sub>			120			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 Forward Gate Current (tp = 10μs)	I <sub>FGM</sub>			4.0			A
Peak Forward Gate Voltage (tp = 10μs)	V <sub>FGM</sub>			16			V
Peak Reverse Gate Voltage (tp = 10μs)	V <sub>RGM</sub>			5.0			V
Critical Rate of Rise of On-State Current	di/dt			100			A/μs
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>			60			°C/W
Thermal Resistance	Θ <sub>J-C</sub>			2.5			°C/W

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

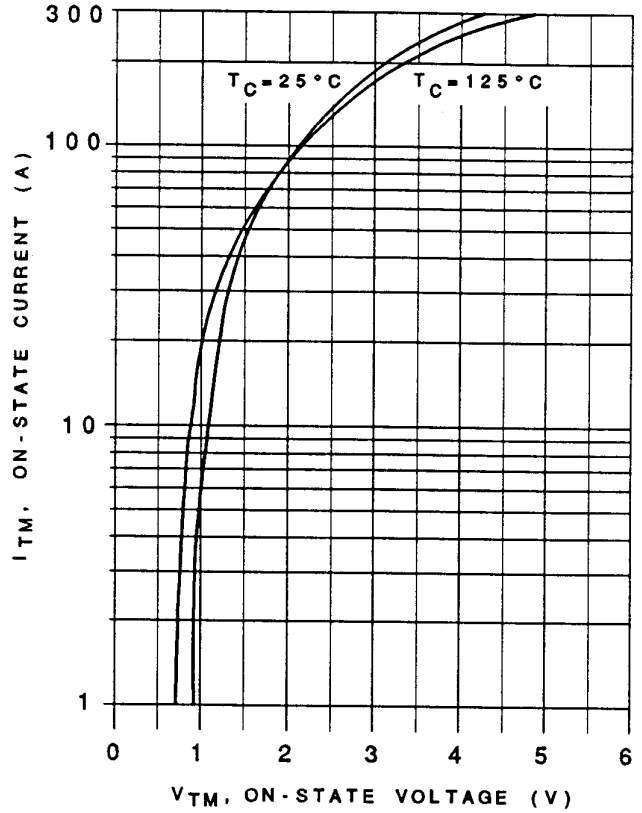
<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>TYP</u>	<u>MAX</u>	<u>UNITS</u>
I <sub>DRM</sub> , I <sub>RRM</sub>	Rated V <sub>DRM</sub> , V <sub>RRM</sub>			0.01	mA
I <sub>DRM</sub> , I <sub>RRM</sub>	Rated V <sub>DRM</sub> , V <sub>RRM</sub> , T <sub>C</sub> = 125°C			3.00	mA
I <sub>GT</sub>	V <sub>D</sub> = 12V, R <sub>L</sub> = 33Ω			15	mA
I <sub>H</sub>	I <sub>T</sub> = 100mA			30	mA
V <sub>GT</sub>	V <sub>D</sub> = 12V, R <sub>L</sub> = 33Ω			1.50	V
V <sub>TM</sub>	I <sub>TM</sub> = 24A, tp = 10ms			1.60	V
dv/dt	V <sub>D</sub> = .67 x V <sub>DRM</sub> , T <sub>C</sub> = 125°C	200			V/μs

# CS220-12B SERIES RATING AND CHARACTERISTIC CURVES

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



**MAXIMUM ON-STATE CHARACTERISTICS**



## MECHANICAL DIMENSIONS

All Dimensions in Inches (mm).

