

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

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Manufacturers of World Class Discrete Semiconductors  
www.centrasemi.com

MCR22-6  
MCR22-8

SENSITIVE GATE  
SILICON CONTROLLED RECTIFIER

TO-92 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR MCR22 series types are PNP Sensitive Gate Silicon Controlled Rectifiers manufactured in a TO-92 case, designed for CD ignition, fuel igniters, flash circuits, and motor control applications.

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

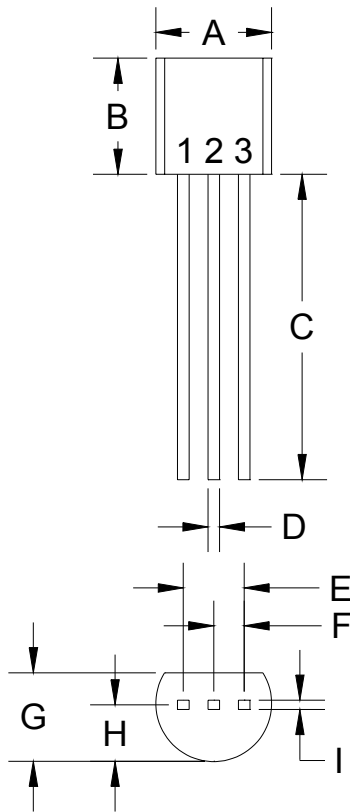
	SYMBOL	MRC22-6	MRC22-8	UNITS
Peak Repetitive Off-State Voltage	V <sub>DRM</sub> , V <sub>RRM</sub>	400	600	V
RMS On-State Current (T <sub>C</sub> = 80°C)	I <sub>T(RMS)</sub>		1.5	A
Non Rept. On-State Current	I <sub>TSM</sub>		15	A
Fusing Current (t=8.3ms)	i <sub>t</sub>		0.9	A <sup>2</sup> s
Peak Reverse Gate Voltage (t≤1.0μs)	V <sub>GRM</sub>		5.0	V
Forward Peak Gate Current (t≤1.0μs)	I <sub>FGM</sub>		0.2	A
Peak Gate Dissipation (t≤1.0μs)	P <sub>GM</sub>		0.5	W
Gate Dissipation (t=8.3ms)	P <sub>G (AV)</sub>		0.1	W
Operating Junction Temperature	T <sub>J</sub>	-40 to +125		°C
Storage Temperature	T <sub>stg</sub>	-40 to +150		°C
Thermal Resistance	θ <sub>JC</sub>	50		°C/W
Thermal Resistance	θ <sub>JA</sub>	160		°C/W

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I <sub>DRM</sub> , I <sub>RRM</sub>	Rated V <sub>DRM</sub> , V <sub>RRM</sub> , R <sub>GK</sub> =1.0kΩ, T <sub>C</sub> = 25°C			10	μA
I <sub>DRM</sub> , I <sub>RRM</sub>	Rated V <sub>DRM</sub> , V <sub>RRM</sub> , R <sub>GK</sub> =1.0kΩ, T <sub>C</sub> = 125°C			200	μA
V <sub>TM</sub>	I <sub>T</sub> =1.0A			1.7	V
I <sub>GT</sub>	V <sub>AK</sub> = 6.0V, R <sub>L</sub> =100Ω, T <sub>C</sub> = 25°C			200	μA
I <sub>GT</sub>	V <sub>AK</sub> = 6.0V, R <sub>L</sub> =100Ω, T <sub>C</sub> = -40°C			500	μA
V <sub>GT</sub>	V <sub>AK</sub> = 7.0V, R <sub>L</sub> =100Ω, T <sub>C</sub> = 25°C			0.8	V
V <sub>GT</sub>	V <sub>AK</sub> = 7.0V, R <sub>L</sub> =100Ω, T <sub>C</sub> = -40°C			1.2	V
V <sub>GD</sub>	V <sub>AK</sub> = 12V, R <sub>L</sub> =100Ω, T <sub>C</sub> = 110°C	0.1			V
I <sub>H</sub>	V <sub>AK</sub> = 12V, I <sub>AK</sub> =200mA, T <sub>C</sub> = 25°C			5.0	mA
I <sub>H</sub>	V <sub>AK</sub> = 12V, I <sub>AK</sub> =200mA, T <sub>C</sub> = -40°C			10	mA
dv/dt	T <sub>C</sub> = 110°C		25		V/μs

(SEE REVERSE SIDE)

TO-92 PACKAGE - MECHANICAL OUTLINE



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.175	0.205	4.45	5.21
B	0.170	0.210	4.32	5.33
C	0.500	-	12.70	-
D	0.016	0.022	0.41	0.56
E	0.100		2.54	
F	0.050		1.27	
G	0.125	0.165	3.18	4.19
H	0.080	0.105	2.03	2.67
I	0.015		0.38	

TO-92 (REV: R1)

Lead Code: 1) Cathode  
 2) Gate  
 3) Anode

R1

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## 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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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

#### Corporate Headquarters & Customer Support Team

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**Worldwide Field Representatives:**  
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