

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

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Manufacturers of World Class Discrete Semiconductors

2N681,A THRU 2N692,A

SILICON CONTROLLED RECTIFIER  
25 AMPS, 25 THRU 800 VOLTS

JEDEC TO-48 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N681,A Series types are Silicon Controlled Rectifiers designed for phase control applications.

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

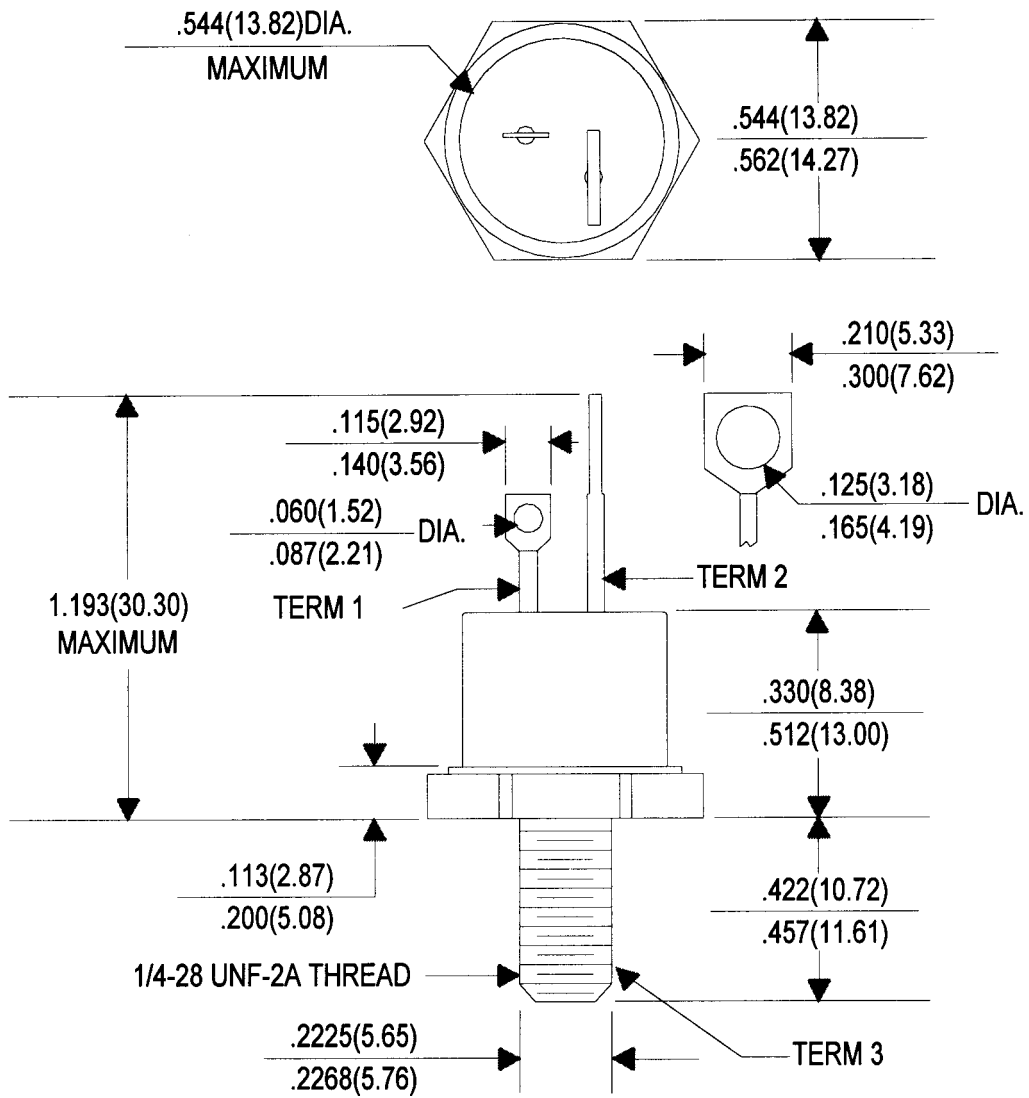
	2N6 81.A	2N6 82.A	2N6 83.A	2N6 84.A	2N6 85.A	2N6 86.A	2N6 87.A	2N6 88.A	2N6 89.A	2N6 90.A	2N6 91.A	2N6 92.A	UNITS
V <sub>DRM</sub>	25	50	100	150	200	250	300	400	500	600	700	800	V
V <sub>RRM</sub>	25	50	100	150	200	250	300	400	500	600	700	800	V
V <sub>RSM</sub>	25	50	100	150	200	250	300	400	500	600	700	800	V
RMS On-State Current (T <sub>C</sub> =70°C)							I <sub>T</sub> (RMS)	25					A
Peak One Cycle Surge Current (60Hz)							I <sub>TSM</sub>	200					A
Peak Gate Power Dissipation							P <sub>GM</sub>	5.0					W
Average Gate Power Dissipation							P <sub>G(AV)</sub>	0.5					W
Storage Temperature							T <sub>stg</sub>	-65 to +150					°C
Operating Junction Temperature							T <sub>J</sub>	-65 to +125					°C
Thermal Resistance, Junction to Case							θ <sub>JC</sub>	1.5					°C/W

## ELECTRICAL CHARACTERISTICS (T<sub>C</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> , T <sub>C</sub> =125°C (2N681,A, 2N682, 2N683, 2N684,A)			13	mA
I <sub>DRM</sub> , I <sub>RRM</sub>	Rated V <sub>DRM</sub> , V <sub>RRM</sub> , T <sub>C</sub> =125°C (2N685,A)			12	mA
I <sub>DRM</sub> , I <sub>RRM</sub>	Rated V <sub>DRM</sub> , V <sub>RRM</sub> , T <sub>C</sub> =125°C (2N686,A)			11	mA
I <sub>DRM</sub> , I <sub>RRM</sub>	Rated V <sub>DRM</sub> , V <sub>RRM</sub> , T <sub>C</sub> =125°C (2N687,A)			10	mA
I <sub>DRM</sub> , I <sub>RRM</sub>	Rated V <sub>DRM</sub> , V <sub>RRM</sub> , T <sub>C</sub> =125°C (2N688,A)			8.0	mA
I <sub>DRM</sub> , I <sub>RRM</sub>	Rated V <sub>DRM</sub> , V <sub>RRM</sub> , T <sub>C</sub> =125°C (2N689,A)			6.0	mA
I <sub>DRM</sub> , I <sub>RRM</sub>	Rated V <sub>DRM</sub> , V <sub>RRM</sub> , T <sub>C</sub> =125°C (2N690,A)			5.0	mA
I <sub>DRM</sub> , I <sub>RRM</sub>	Rated V <sub>DRM</sub> , V <sub>RRM</sub> , T <sub>C</sub> =125°C (2N691,A)			4.5	mA
I <sub>DRM</sub> , I <sub>RRM</sub>	Rated V <sub>DRM</sub> , V <sub>RRM</sub> , T <sub>C</sub> =125°C (2N692,A)			4.0	mA
I <sub>GT</sub>	V <sub>D</sub> =12V, R <sub>L</sub> =50Ω			40	mA
V <sub>GT</sub>	V <sub>D</sub> =12V, R <sub>L</sub> =50Ω			2.0	V
V <sub>TM</sub>	I <sub>TM</sub> =50A, PW=1.0ms, D.C=2.0%			2.0	V
I <sub>H</sub>	V <sub>D</sub> =7.0V, R <sub>GK</sub> =1KΩ (2N681 thru 2N692)			100	mA
I <sub>H</sub>	V <sub>D</sub> =7.0V, R <sub>GK</sub> =1KΩ (2N681A thru 2N692A)			50	mA
dv/dt	Rated V <sub>DRM</sub> , T <sub>C</sub> =125°C		100		V/μs
t <sub>on</sub>	I <sub>F</sub> =10A, I <sub>G</sub> =200mA		2.0		μs
t <sub>off</sub>	I <sub>F</sub> =10A, I <sub>G</sub> =200mA		15		μs

(See Reverse Side)

# JEDEC TO-48 CASE - MECHANICAL OUTLINE



All Dimensions in Inches (mm).

LEAD CODE:

TERM 1) GATE  
TERM 2) CATHODE  
TERM 3) ANODE

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

## 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

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