

CentralTM 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 ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

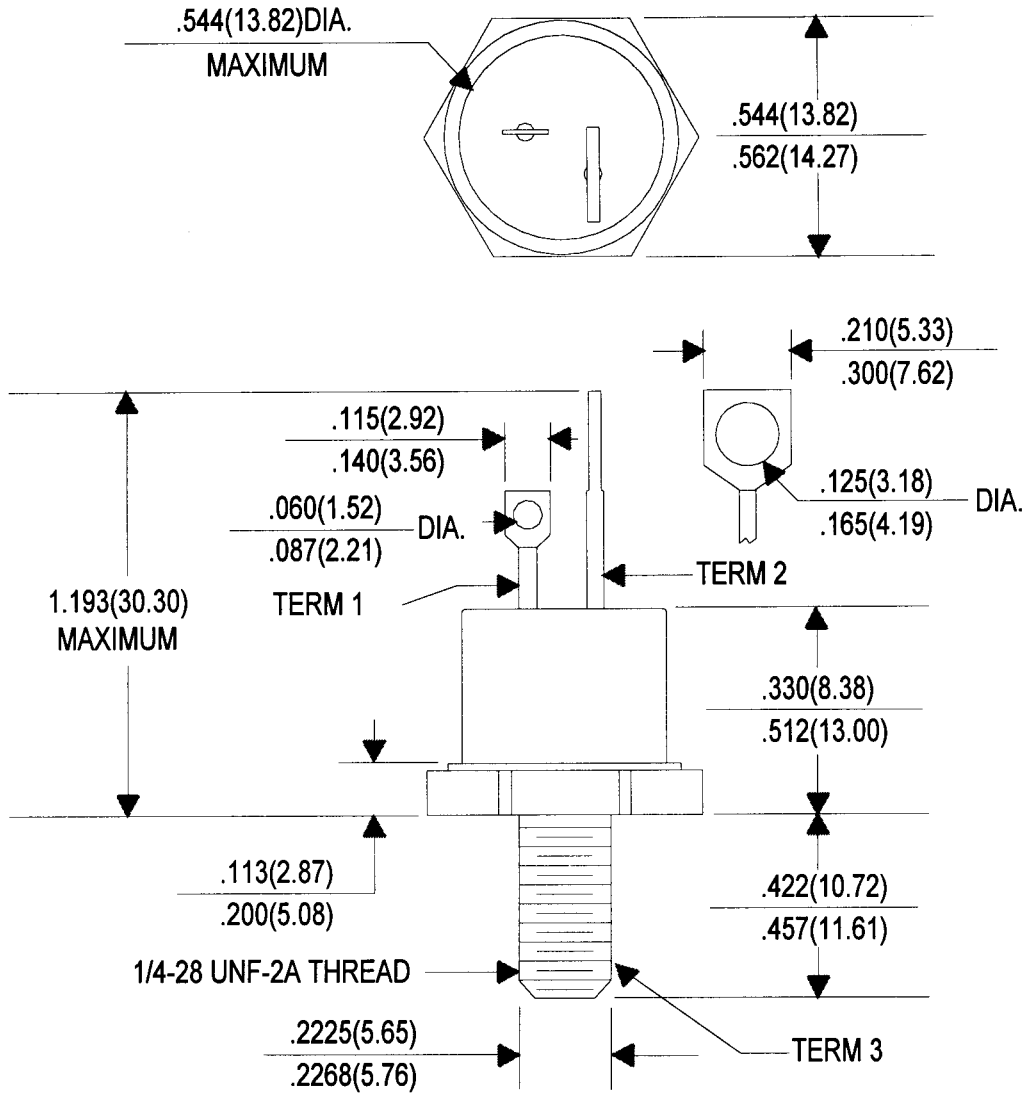
	2N681,A	2N682,A	2N683,A	2N684,A	2N685,A	2N686,A	2N687,A	2N688,A	2N689,A	2N690,A	2N691,A	2N692,A	UNITS
V_{DRM}	25	50	100	150	200	250	300	400	500	600	700	800	V
V_{RRM}	25	50	100	150	200	250	300	400	500	600	700	800	V
V_{RSM}	25	50	100	150	200	250	300	400	500	600	700	800	V
RMS On-State Current ($T_C=70^{\circ}\text{C}$)					$I_T(\text{RMS})$				25				A
Peak One Cycle Surge Current (60Hz)					I_{TSM}				200				A
Peak Gate Power Dissipation					P_{GM}				5.0				W
Average Gate Power Dissipation					$P_{G(AV)}$				0.5				W
Storage Temperature					T_{stg}				-65 to +150				$^{\circ}\text{C}$
Operating Junction Temperature					T_J				-65 to +125				$^{\circ}\text{C}$
Thermal Resistance, Junction to Case					θ_{JC}				1.5				$^{\circ}\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{DRM}, I_{RRM}	Rated $V_{DRM}, V_{RRM}, T_C=125^{\circ}\text{C}$ (2N681,A, 2N682,A, 2N683, 2N684,A)			13	mA
I_{DRM}, I_{RRM}	Rated $V_{DRM}, V_{RRM}, T_C=125^{\circ}\text{C}$ (2N685,A)			12	mA
I_{DRM}, I_{RRM}	Rated $V_{DRM}, V_{RRM}, T_C=125^{\circ}\text{C}$ (2N686,A)			11	mA
I_{DRM}, I_{RRM}	Rated $V_{DRM}, V_{RRM}, T_C=125^{\circ}\text{C}$ (2N687,A)			10	mA
I_{DRM}, I_{RRM}	Rated $V_{DRM}, V_{RRM}, T_C=125^{\circ}\text{C}$ (2N688,A)			8.0	mA
I_{DRM}, I_{RRM}	Rated $V_{DRM}, V_{RRM}, T_C=125^{\circ}\text{C}$ (2N689,A)			6.0	mA
I_{DRM}, I_{RRM}	Rated $V_{DRM}, V_{RRM}, T_C=125^{\circ}\text{C}$ (2N690,A)			5.0	mA
I_{DRM}, I_{RRM}	Rated $V_{DRM}, V_{RRM}, T_C=125^{\circ}\text{C}$ (2N691,A)			4.5	mA
I_{DRM}, I_{RRM}	Rated $V_{DRM}, V_{RRM}, T_C=125^{\circ}\text{C}$ (2N692,A)			4.0	mA
I_{GT}	$V_D=12\text{V}, R_L=50\Omega$			40	mA
V_{GT}	$V_D=12\text{V}, R_L=50\Omega$			2.0	V
V_{TM}	$I_{TM}=50\text{A}, PW=1.0\text{ms}, D.C=2.0\%$			2.0	V
I_H	$V_D=7.0\text{V}, R_{GK}=1\text{K}\Omega$ (2N681 thru 2N692)			100	mA
I_H	$V_D=7.0\text{V}, R_{GK}=1\text{K}\Omega$ (2N681A thru 2N692A)			50	mA
dv/dt	Rated $V_{DRM}, T_C=125^{\circ}\text{C}$		100		V/ μs
t_{on}	$I_F=10\text{A}, I_G=200\text{mA}$		2.0		μs
t_{off}	$I_F=10\text{A}, I_G=200\text{mA}$		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

CentralTM
Semiconductor Corp.

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd 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

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).

CONTACT US

Corporate Headquarters & Customer Support Team

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www.centrasemi.com/wwreps

Worldwide Distributors:
www.centrasemi.com/wwdistributors

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: www.centrasemi.com/terms

Product End of Life Notification

PDN ID:	PDN01023
Notification Date:	4/19/16
Last Buy Date:	10/19/16
Last Shipment Date	4/19/17

Summary: All devices manufactured in the TO-48 package are discontinued and now classified as End of Life (EOL).

Although Central Semiconductor Corp. makes every effort to continue to produce devices that have been proclaimed EOL (End of Life) by various manufacturers, it is an accepted industry practice to discontinue certain devices when customer demand falls below a minimum level of sustainability. Accordingly, the following product(s) have been transitioned to End of Life status as part of Central's Product Management Process. Any replacement product will be noted below. The effective date for placing the last purchase order will be six(6) months from the date of this notice and twelve(12) months from the notice date for final shipments; this may be extended if inventory is available.

Central Part Number	Replacement
CQ48-25M	N/A
CQ48-35M	N/A
CS48-35A	N/A
CS48-35B	N/A
CS48-35D	N/A
CS48-35M	N/A
CS48-35N	N/A
CS48-35P	N/A
CS48-35PB	N/A
2N3896	N/A
2N681	N/A
2N681A	N/A
2N682	N/A
2N682A	N/A
2N683	N/A
2N683A	N/A
2N684	N/A
2N684A	N/A
2N685	N/A
2N685A	N/A
2N686	N/A
2N686A	N/A
2N687	N/A
2N687A	N/A
2N688	N/A
2N688A	N/A
2N689	N/A
2N689A	N/A
2N690	N/A
2N690A	N/A
2N691	N/A
2N691A	N/A
2N692	N/A
2N692A	N/A

*** CONTINUED ***

DISCLAIMER: This End of Life (EOL) notification is in accordance with JEDEC standard JESD48 - Product Discontinuance. Central Semiconductor Corp. will make every effort to offer life-time buy (LTB) opportunities and/or offer replacement devices to existing customers for discontinued devices, however, one or both may not be possible for all devices. Please contact your local Central Semiconductor sales representative for LTB opportunities/additional information.



<http://www.centrasemi.com>

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*** CONTINUED FROM PRIOR PAGE ***

<u>Central Part Number</u>	<u>Replacement</u>
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Central would be happy to assist you by providing additional information or technical data to help locate an alternate source if we have no replacement available. Please email your requests to engineering@centrasemi.com.

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