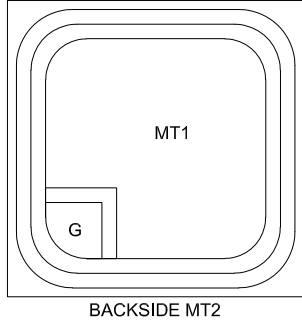


# CPQ128-CQDD-12M3

## Three Quadrant TRIAC Die

### 12 Amp, 600 Volt

The CPQ128-CQDD-12M3 is a silicon TRIAC designed for full wave AC control applications featuring gate triggering in three quadrants.



#### MECHANICAL SPECIFICATIONS:

Die Size	128 x 128 MILS
Die Thickness	8.3 MILS
Gate Bonding Pad Size	26 x 26 MILS
MT1 Bonding Pad Size	93.3 x 93.3 MILS
Top Side Metalization	Al – 20,000Å
Back Side Metalization	Al/Ti/Ni/Ag – 36,600Å
Scribe Alley Width	3.0 MILS
Wafer Diameter	4 INCHES
Gross Die Per Wafer	623

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

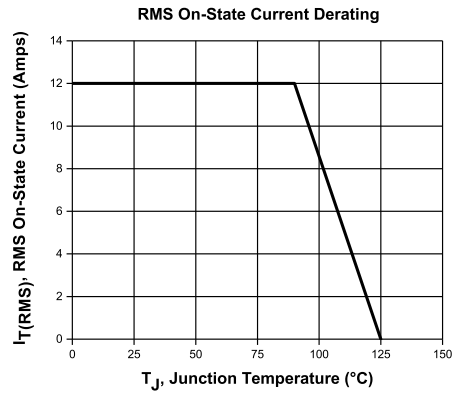
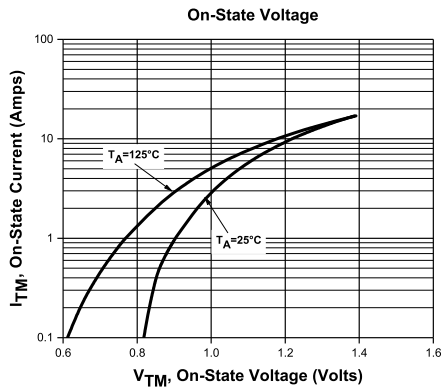
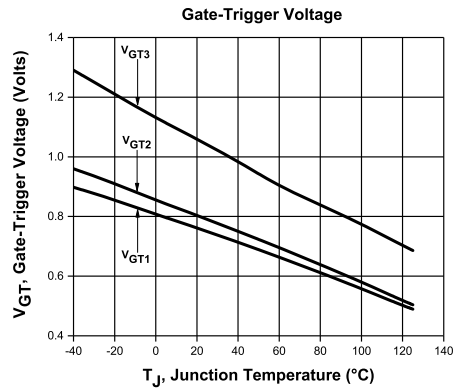
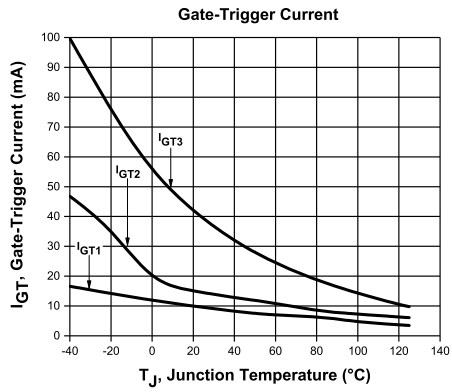
	SYMBOL		UNITS
Peak Repetitive Off-State Voltage	V <sub>DRM</sub>	600	V
Peak One Cycle Surge Voltage, t=10ms (T <sub>J</sub> =125°C)	V <sub>DSM</sub>	700	V
RMS On-State Current (T <sub>J</sub> =90°C)	I <sub>T(RMS)</sub>	12	A
Peak One Cycle Surge Current, t=16.7ms	I <sub>TSM</sub>	100	A
I <sup>2</sup> t Value for Fusing, t=10ms	I <sup>2</sup> t	78	A <sup>2</sup> s
Peak Gate Current, tp=20µs (T <sub>J</sub> =125°C)	I <sub>GM</sub>	4.0	A
Critical Rate of Rise of On-State Current Repetitive, f=120Hz (T <sub>J</sub> =125°C)	di/dt	50	A/µs
Operating Junction Temperature	T <sub>J</sub>	-40 to +125	°C
Storage Temperature	T <sub>stg</sub>	-40 to +150	°C

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I <sub>DRM</sub> , I <sub>RRM</sub>	V <sub>DRM</sub> , V <sub>RRM</sub> =600V		5.0	µA
I <sub>GT</sub>	V <sub>D</sub> =12V, R <sub>L</sub> =30Ω, QUAD I, II, III		50	mA
I <sub>H</sub>	I <sub>T</sub> =500mA		50	mA
V <sub>GT</sub>	V <sub>D</sub> =12V, R <sub>L</sub> =30Ω, QUAD I, II, III		1.3	V
V <sub>TM</sub>	I <sub>TM</sub> =17A, tp=380µs		1.55	V
dv/dt	V <sub>D</sub> =2/3V <sub>DRM</sub> , R <sub>GK</sub> =∞, T <sub>J</sub> =125°C		500	V/µs

# CPQ128-CQDD-12M3

## Typical Electrical Characteristics



## BARE DIE PACKING OPTIONS

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### BARE DIE IN TRAY (WAFFLE) PACK

**CT:** Singulated die in tray (waffle) pack.  
(example: CP211-PART NUMBER-CT)

**CM:** Singulated die in tray (waffle) pack 100% visually inspected as per MIL-STD-750, (method 2072 transistors, method 2073 diodes).  
(example: CP211-PART NUMBER-CM)

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### UNSAWN WAFER

**WN:** Full wafer, unsawn, 100% tested with reject die inked.  
(example: CP211-PART NUMBER-WN)

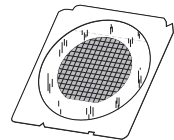
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### SAWN WAFER ON PLASTIC RING

**WR:** Full wafer, sawn and mounted on plastic ring,  
100% tested with reject die inked.  
(example: CP211-PART NUMBER-WR)

Please note: Sawn Wafer on Metal Frame (WS) is possible as a special order. Please contact your Central Sales Representative at 631-435-1110.



Visit the Central website for a complete listing of specifications:  
[www.centrasemi.com/bdspecs](http://www.centrasemi.com/bdspecs)

## 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 Distributors:**  
[www.centrasemi.com/wwdistributors](http://www.centrasemi.com/wwdistributors)

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