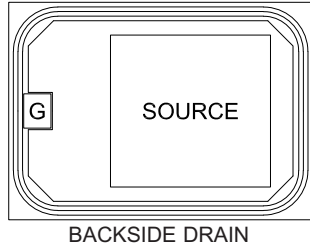


# CP399-CDM11-600L

## N-Channel MOSFET Die

### Enhancement-Mode

The CP399-CDM11-600L is a silicon N-Channel MOSFET designed for high current applications.



#### MECHANICAL SPECIFICATIONS:

Die Size	149.6 x 107.1 MILS
Die Thickness	9.06 MILS
Gate Bonding Pad Size	13.4 x 16.9 MILS
Source Bonding Pad Size	78.7 x 74.8 MILS
Top Side Metalization	Al – 43,000Å
Back Side Metalization	Ag – 8,000Å
Scribe Alley Width	2.36 MILS
Wafer Diameter	8 INCHES
Gross Die Per Wafer	2,638

MAXIMUM RATINGS: (T <sub>A</sub> =25°C)	SYMBOL		UNITS
Drain-Source Voltage	V <sub>DS</sub>	600	V
Gate-Source Voltage	V <sub>GS</sub>	30	V
Continuous Drain Current (Steady State)	I <sub>D</sub>	11	A
Maximum Pulsed Drain Current, tp=10µs	I <sub>DM</sub>	44	A
Continuous Source Current (Body Diode)	I <sub>S</sub>	11	A
Maximum Pulsed Source Current (Body Diode)	I <sub>SM</sub>	44	A
Single Pulse Avalanche Energy (Note 1)	E <sub>AS</sub>	280	mJ
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C

Note 1: L=30mH, I<sub>AS</sub>=4.0A, V<sub>DD</sub>=100V, R<sub>G</sub>=25Ω, Initial T<sub>J</sub>=25°C

ELECTRICAL CHARACTERISTICS: (T <sub>A</sub> =25°C)		MIN	TYP	MAX	UNITS
<b>SYMBOL</b>	<b>TEST CONDITIONS</b>				
I <sub>GSSF</sub> , I <sub>GSSR</sub>	V <sub>GS</sub> =30V, V <sub>DS</sub> =0			100	nA
I <sub>DSS</sub>	V <sub>DS</sub> =600V, V <sub>GS</sub> =0			1.0	µA
BV <sub>DSS</sub>	V <sub>GS</sub> =0, I <sub>D</sub> =250µA	600			V
V <sub>GS(th)</sub>	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250µA	2.0		4.0	V
V <sub>SD</sub>	V <sub>GS</sub> =0, I <sub>S</sub> =11A			1.4	V
r <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =5.5A			0.36	Ω
C <sub>rss</sub>	V <sub>DS</sub> =100V, V <sub>GS</sub> =0, f=1.0MHz		2.76		pF
C <sub>iss</sub>	V <sub>DS</sub> =100V, V <sub>GS</sub> =0, f=1.0MHz		763		pF
C <sub>oss</sub>	V <sub>DS</sub> =100V, V <sub>GS</sub> =0, f=1.0MHz		52		pF

# CP399-CDM11-600L

## N-Channel MOSFET Die

### Enhancement-Mode

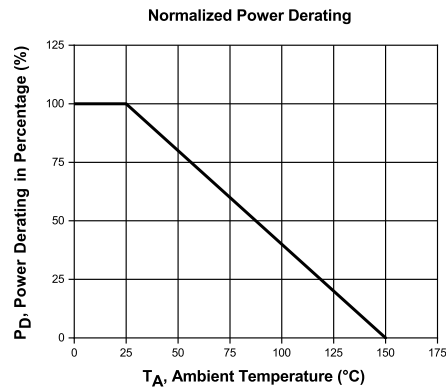
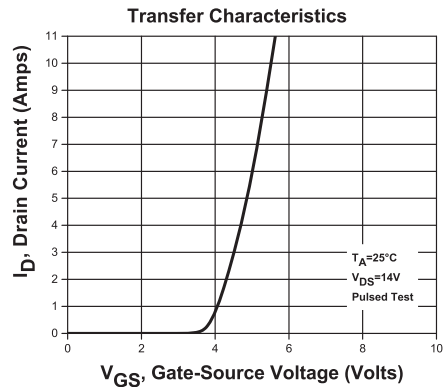
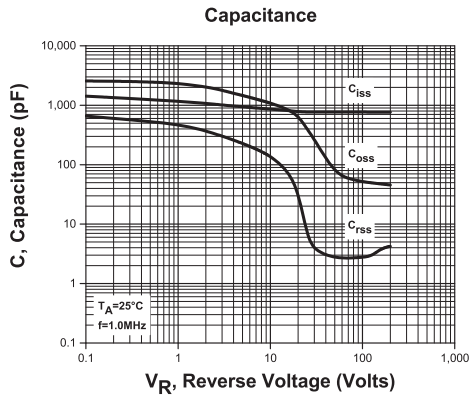
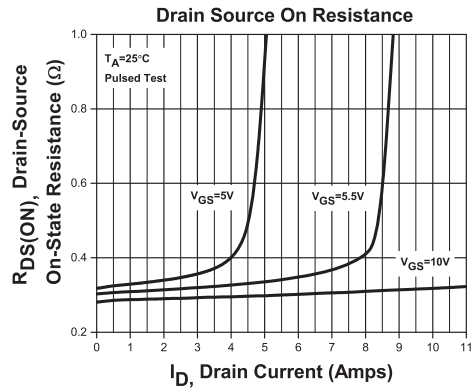
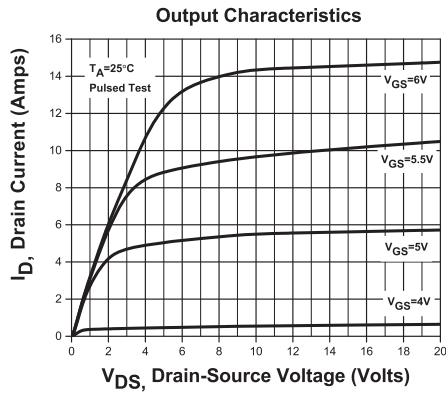
#### ELECTRICAL CHARACTERISTICS - Continued: ( $T_A=25^\circ\text{C}$ )

SYMBOL	TEST CONDITIONS	TYP	UNITS
$Q_{g(\text{tot})}$	$V_{DS}=480\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=11\text{A}$ (Note 2)	23.05	nC
$Q_{gs}$	$V_{DS}=480\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=11\text{A}$ (Note 2)	4.45	nC
$Q_{gd}$	$V_{DS}=480\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=11\text{A}$ (Note 2)	11.31	nC
$t_{d(\text{on})}$	$V_{DD}=300\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=11\text{A}$ , $R_G=25\Omega$ (Note 2)	11	ns
$t_r$	$V_{DD}=300\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=11\text{A}$ , $R_G=25\Omega$ (Note 2)	27	ns
$t_{d(\text{off})}$	$V_{DD}=300\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=11\text{A}$ , $R_G=25\Omega$ (Note 2)	37	ns
$t_f$	$V_{DD}=300\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=11\text{A}$ , $R_G=25\Omega$ (Note 2)	23	ns
$t_{rr}$	$V_{GS}=0$ , $I_S=11\text{A}$ , $di/dt=100\text{A}/\mu\text{s}$ (Note 2)	315	ns
$Q_{rr}$	$V_{GS}=0$ , $I_S=11\text{A}$ , $di/dt=100\text{A}/\mu\text{s}$ (Note 2)	4.0	$\mu\text{C}$

Note 2: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

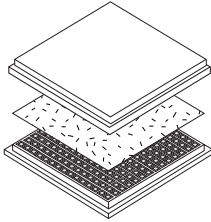
# CP399-CDM11-600L

## Typical Electrical Characteristics



## BARE DIE PACKING OPTIONS

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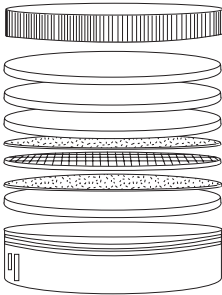


### BARE DIE IN TRAY (WAFFLE) PACK

**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)

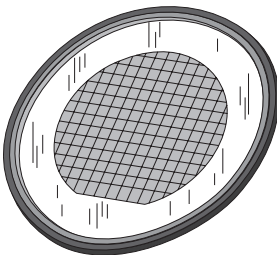
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### UNSAWN WAFER

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

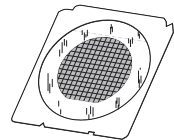
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### SAWN WAFER ON PLASTIC RING

**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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Main Fax: (631) 435-1824  
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[www.centrasemi.com](http://www.centrasemi.com)

**Worldwide Field Representatives:**  
[www.centrasemi.com/wwreps](http://www.centrasemi.com/wwreps)

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

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