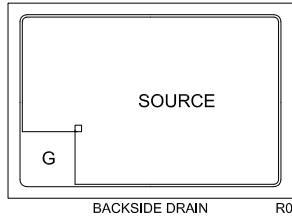


# CP398X-CTLDM303N

## N-Channel MOSFET Die

### Enhancement-Mode

The CP398X-CTLDM303N is a silicon N-Channel MOSFET designed for high speed pulsed amplifier and driver applications.



#### MECHANICAL SPECIFICATIONS:

Die Size	37.8 x 26 MILS
Die Thickness	5.5 MILS
Gate Bonding Pad Size	7.3 x 7.3 MILS
Source Bonding Pad Size	34 x 22.2 MILS
Top Side Metalization	Al – 40,000Å
Back Side Metalization	Ti/Ni/Ag – 1,000Å/3,000Å/10,000Å
Scribe Alley Width	2.36 MILS
Wafer Diameter	8 INCHES
Gross Die Per Wafer	45,000

#### MAXIMUM RATINGS: ( $T_A=25^\circ\text{C}$ )

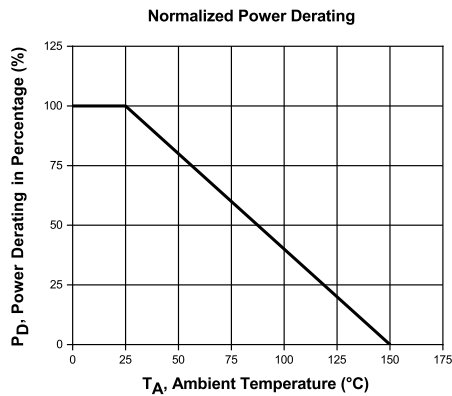
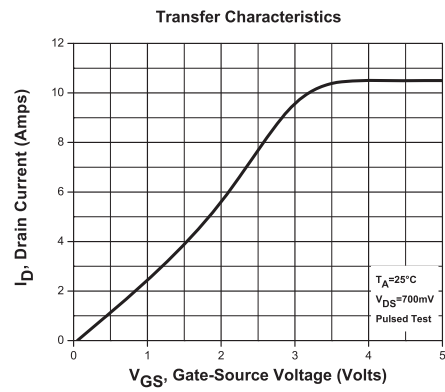
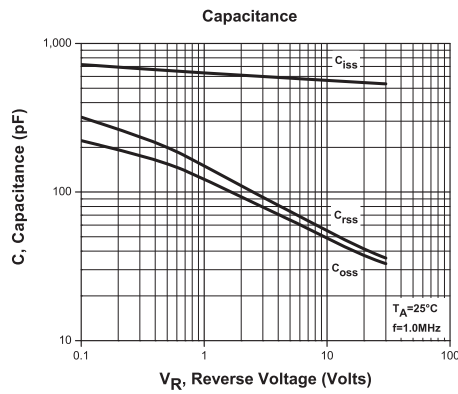
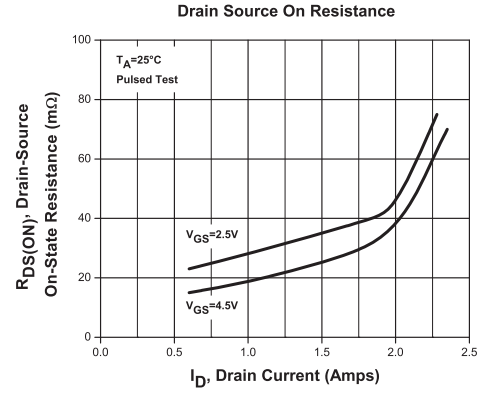
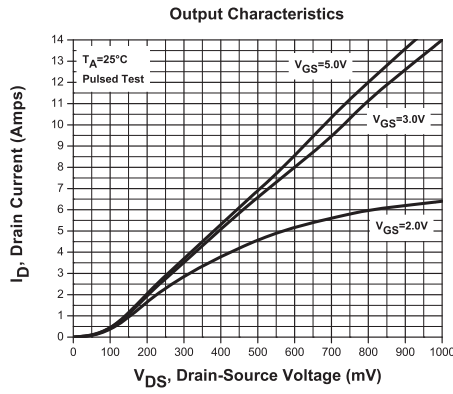
	SYMBOL		UNITS
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	12	V
Continuous Drain Current (Steady State)	$I_D$	3.6	A
Maximum Pulsed Drain Current, $t_p=10\mu\text{s}$	$I_{DM}$	14.4	A
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

#### ELECTRICAL CHARACTERISTICS PER TRANSISTOR: ( $T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{GSSF}, I_{GSSR}$	$V_{GS}=12\text{V}, V_{DS}=0$			10	$\mu\text{A}$
$I_{DSS}$	$V_{DS}=20\text{V}, V_{GS}=0$			1.0	$\mu\text{A}$
$BV_{DSS}$	$V_{GS}=0, I_D=250\mu\text{A}$	30			V
$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu\text{A}$	0.6		1.2	V
$r_{DS(ON)}$	$V_{GS}=4.5\text{V}, I_D=1.8\text{A}$			0.04	$\Omega$
$r_{DS(ON)}$	$V_{GS}=2.5\text{V}, I_D=1.8\text{A}$			0.078	$\Omega$
$Q_{g(tot)}$	$V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=3.6\text{A}$			13	nC
$Q_{gs}$	$V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=3.6\text{A}$			1.4	nC
$Q_{gd}$	$V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=3.6\text{A}$			2.7	nC
$g_{FS}$	$V_{DS}=5.0\text{V}, I_D=3.6\text{A}$		11.8		S
$C_{rss}$	$V_{DS}=10\text{V}, V_{GS}=0, f=1.0\text{MHz}$		55		pF
$C_{iss}$	$V_{DS}=10\text{V}, V_{GS}=0, f=1.0\text{MHz}$		590		pF
$C_{oss}$	$V_{DS}=10\text{V}, V_{GS}=0, f=1.0\text{MHz}$		50		pF
$t_{on}$	$V_{DD}=10\text{V}, V_{GS}=4.0\text{V}, I_D=3.6\text{A}, R_G=10\Omega$		15		ns
$t_{off}$	$V_{DD}=10\text{V}, V_{GS}=4.0\text{V}, I_D=3.6\text{A}, R_G=10\Omega$		29		ns

# CP398X-CTLDM303N

## 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

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centrasemi.com](http://www.centrasemi.com)

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

**Worldwide Distributors:**  
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