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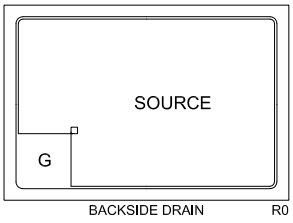
CP398X-CTLDM303N

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°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, tp=10μs	I_{DM}	14.4	A
Operating and Storage Junction Temperature	T_J, T_{stg}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS PER TRANSISTOR: (T_A=25°C unless otherwise noted)

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

CP398X-CTLDM303N
Typical Electrical Characteristics

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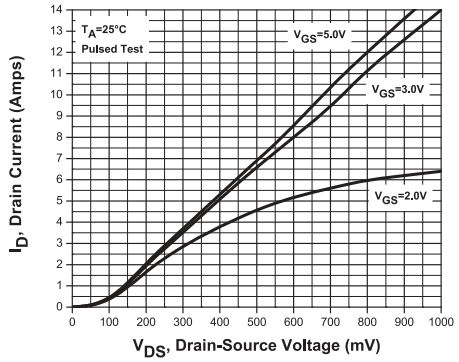
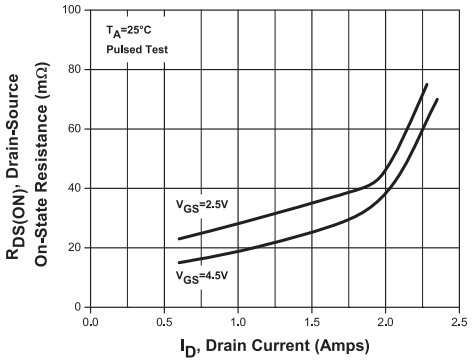
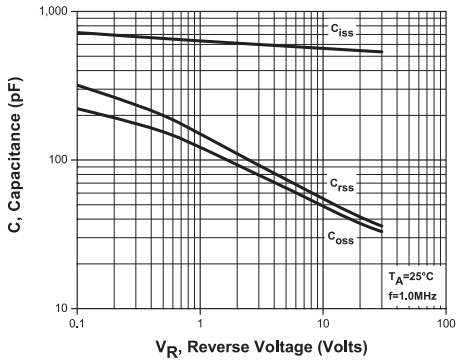
Output Characteristics



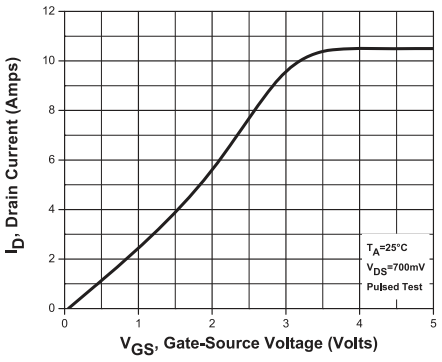
Drain Source On Resistance



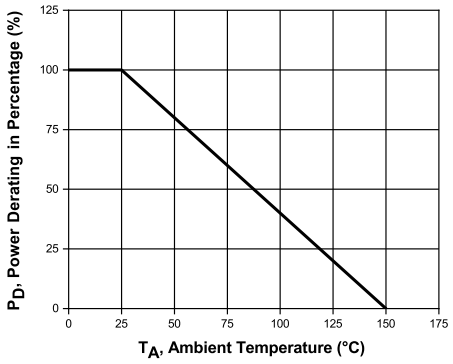
Capacitance



Transfer Characteristics

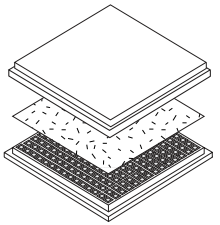


Normalized Power Derating



R0 (8-April 2019)

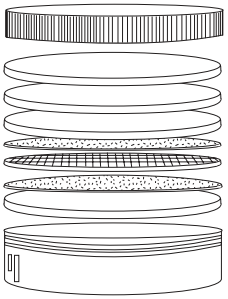
BARE DIE PACKING OPTIONS



BARE DIE IN TRAY (WAFFLE) PACK

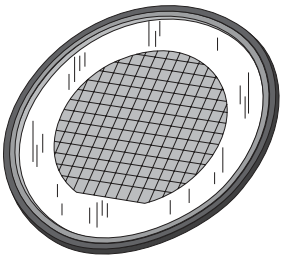
CT: Singulated die in tray (waffle) pack.
(example: CP211-PART NUMBER-CT)

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)



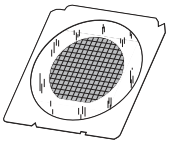
UNSAWN WAFER

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



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.centralsemi.com/bdspecs

R2 (3-April 2017)

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

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