

CP350-CZDM8502N

N-Channel MOSFET Die

Enhancement-Mode

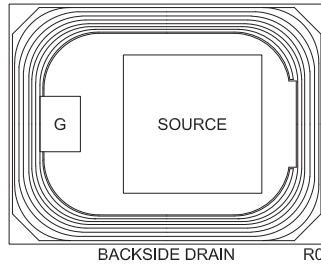
The CP350-CZDM8502N N-Channel MOSFET is designed for LED lighting and switching mode power supplies.

APPLICATIONS:

- LED lighting
- Switch-mode power supplies
- Power factor corrections

FEATURES:

- $V_{DS}=850V @ I_D=2.0A$
- $R_{DS(ON)}=6.3\Omega$ (MAX)
- $Q_{g(tot)}=9.7nC$ (TYP)



MECHANICAL SPECIFICATIONS:

Die Size	108 x 82 MILS
Die Thickness	11.8 MILS
Gate Bonding Pad Size	13.8 x 18.9 MILS
Source Bonding Pad Size	47.2 x 47.2 MILS
Top Side Metalization	Al - 30,000Å
Back Side Metalization	Ag - 8,000Å
Scribe Alley Width	3.15 MILS
Wafer Diameter	6 INCHES
Gross Die Per Wafer	2,564

MAXIMUM RATINGS: ($T_A=25^\circ C$)

	SYMBOL		UNITS
Drain-Source Voltage	V_{DS}	850	V
Gate-Source Voltage	V_{GS}	30	V
Continuous Drain Current (Steady State)	I_D	2.0	A
Continuous Drain Current (Steady State, $T_A=100^\circ C$)	I_D	1.2	A
Maximum Pulsed Drain Current	I_{DM}	8.0	A
Single Pulse Avalanche Energy (Note 1)	E_{AS}	180	mJ
Operating and Storage Junction Temperature	T_J, T_{stg}	-55 to +150	$^\circ C$

Note 1: L=30mH, $I_S=3.3A$, $V_{DD}=100V$, $R_G=25\Omega$, Starting $T_J=25^\circ C$

ELECTRICAL CHARACTERISTICS - MOSFET: ($T_A=25^\circ C$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{GSSF}, I_{GSSR}	$V_{GS}=30V, V_{DS}=0$			100	nA
I_{DSS}	$V_{DS}=850V, V_{GS}=0$			1.0	μA
BV_{DSS}	$V_{GS}=0, I_D=250\mu A$	850			V
$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	2.0		4.0	V
$r_{DS(ON)}$	$V_{GS}=10V, I_D=1.0A$			6.3	Ω
C_{rss}	$V_{DS}=25V, V_{GS}=0, f=1.0MHz$		1.6		pF
C_{iss}	$V_{DS}=25V, V_{GS}=0, f=1.0MHz$		383		pF
C_{oss}	$V_{DS}=25V, V_{GS}=0, f=1.0MHz$		39		pF

R0 (27-August 2018)

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ELECTRICAL CHARACTERISTICS - MOSFET - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	TYP	MAX	UNITS
$Q_{g(\text{tot})}$	$V_{DS}=400\text{V}$, $V_{GS}=10\text{V}$, $I_D=2.0\text{A}$ (Note 2)	9.7		nC
Q_{gs}	$V_{DS}=400\text{V}$, $V_{GS}=10\text{V}$, $I_D=2.0\text{A}$ (Note 2)	2.3		nC
Q_{gd}	$V_{DS}=400\text{V}$, $V_{GS}=10\text{V}$, $I_D=2.0\text{A}$ (Note 2)	4.6		nC
$t_{d(\text{on})}$	$V_{DD}=400\text{V}$, $V_{GS}=10\text{V}$, $I_D=2.0\text{A}$, $R_G=25\Omega$ (Note 2)	13		ns
t_r	$V_{DD}=400\text{V}$, $V_{GS}=10\text{V}$, $I_D=2.0\text{A}$, $R_G=25\Omega$ (Note 2)	23		ns
$t_{d(\text{off})}$	$V_{DD}=400\text{V}$, $V_{GS}=10\text{V}$, $I_D=2.0\text{A}$, $R_G=25\Omega$ (Note 2)	26		ns
t_f	$V_{DD}=400\text{V}$, $V_{GS}=10\text{V}$, $I_D=2.0\text{A}$, $R_G=25\Omega$ (Note 2)	27		ns

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

ELECTRICAL CHARACTERISTICS - Body Diode: ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	TYP	MAX	UNITS
V_{SD}	$V_{GS}=0$, $I_S=2.0\text{A}$		1.4	V
t_{rr}	$V_{GS}=0$, $I_S=2.0\text{A}$, $di/dt=100\text{A}/\mu\text{s}$	361		ns
Q_{rr}	$V_{GS}=0$, $I_S=2.0\text{A}$, $di/dt=100\text{A}/\mu\text{s}$	1.2		μC

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.centrasemi.com/bdspecs

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

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

Worldwide Field Representatives:
www.centrasemi.com/wwreps

Worldwide Distributors:
www.centrasemi.com/wwdistributors

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