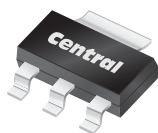


CZDM1003N
SURFACE MOUNT SILICON
N-CHANNEL
ENHANCEMENT-MODE
MOSFET



SOT-223 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZDM1003N is a 3.0 Amp, 100 Volt silicon N-Channel enhancement-mode MOSFET, designed for motor control and relay driver applications. This MOSFET offers high current, low $r_{DS(ON)}$, and low gate charge.

MARKING: FULL PART NUMBER

APPLICATIONS:

- Motor control
- Relay driver
- DC-DC converters

FEATURES:

- Low $r_{DS(ON)}$
- High current
- Low gate charge

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

Drain-Source Voltage
Gate-Source Voltage
Continuous Drain Current (Steady State)
Maximum Pulsed Drain Current, $t_p=10\mu\text{s}$
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL

V_{DS}	100
V_{GS}	20
I_D	3.0
I_{DM}	12
P_D	2.0
T_J, T_{stg}	-55 to +150
θ_{JA}	62.5

UNITS

V
V
A
A
W
$^\circ\text{C}$
$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{GSSF}, I_{GSSR}	$V_{GS}=20\text{V}, V_{DS}=0$			100	nA
I_{DSS}	$V_{DS}=100\text{V}, V_{GS}=0$			1.0	μA
BV_{DSS}	$V_{GS}=0, I_D=250\mu\text{A}$	100			V
$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu\text{A}$	2.0		4.0	V
V_{SD}	$V_{GS}=0, I_S=3.0\text{A}$			1.3	V
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=2.0\text{A}$		70	150	m Ω
C_{rss}	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$		55	70	pF
C_{iss}	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$		705	975	pF
C_{oss}	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$		55	80	pF
$Q_{g(tot)}$	$V_{DS}=80\text{V}, V_{GS}=10\text{V}, I_D=9.2\text{A}$		15		nC
Q_{gs}	$V_{DS}=80\text{V}, V_{GS}=10\text{V}, I_D=9.2\text{A}$		3.0		nC
Q_{gd}	$V_{DS}=80\text{V}, V_{GS}=10\text{V}, I_D=9.2\text{A}$		5.5		nC
t_{on}	$V_{DD}=50\text{V}, V_{GS}=10\text{V}, I_D=9.2\text{A}$		40	80	ns
t_{off}	$R_G=18\Omega$		60	155	ns

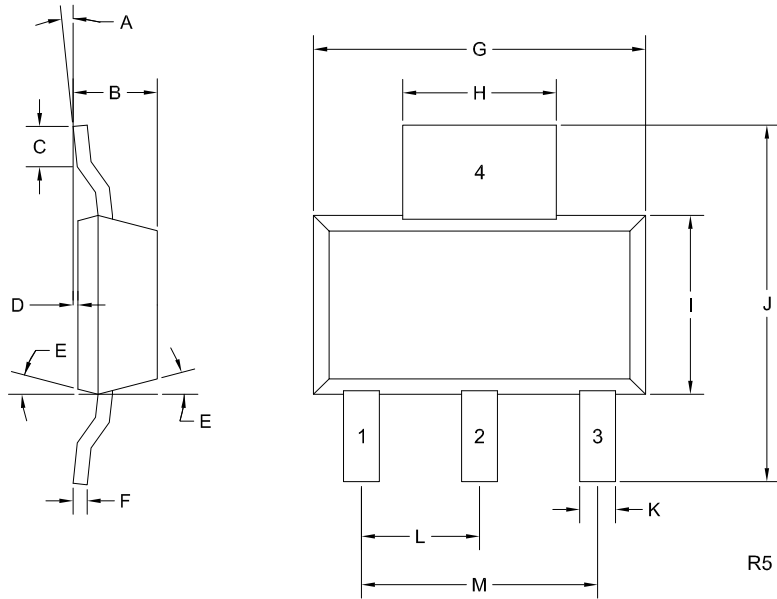
R3 (7-May 2019)

CZDM1003N

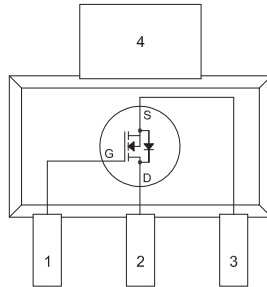
**SURFACE MOUNT SILICON
N-CHANNEL
ENHANCEMENT-MODE
MOSFET**



SOT-223 CASE - MECHANICAL OUTLINE



PIN CONFIGURATION



Tab is common to pin 2
(Top View)

LEAD CODE:

- 1) Gate
- 2) Drain
- 3) Source
- 4) Drain

MARKING: FULL PART NUMBER

SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0°	10°	0°	10°
B	0.059	0.071	1.50	1.80
C	0.018	---	0.45	---
D	0.000	0.004	0.00	0.10
E	10°		10°	
F	0.009	0.014	0.23	0.35
G	0.248	0.270	6.30	6.85
H	0.114	0.122	2.90	3.10
I	0.130	0.146	3.30	3.70
J	0.264	0.287	6.70	7.30
K	0.024	0.033	0.60	0.85
L	0.091		2.30	
M	0.181		4.60	

SOT-223 (REV: R5)

R3 (7-May 2019)

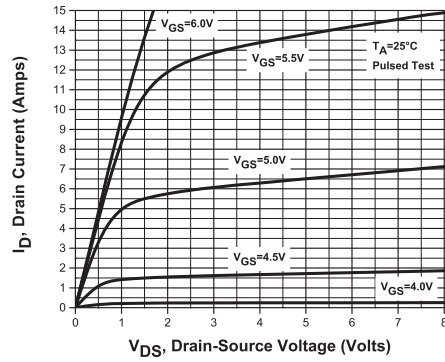
CZDM1003N

SURFACE MOUNT SILICON
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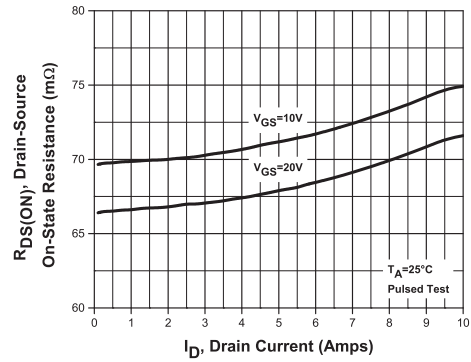


TYPICAL ELECTRICAL CHARACTERISTICS

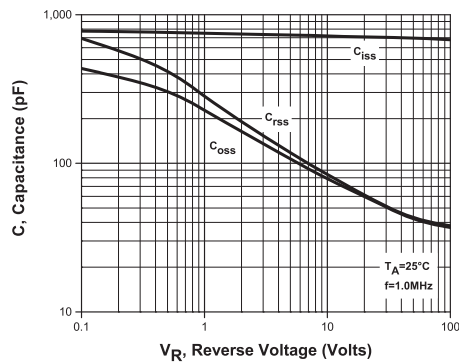
Output Characteristics



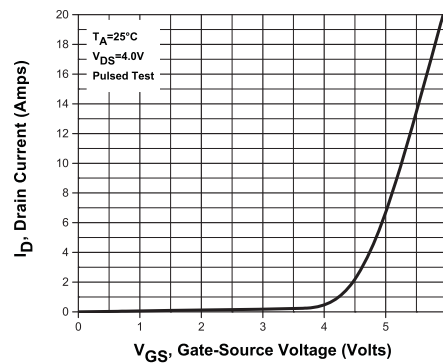
Drain Source On Resistance



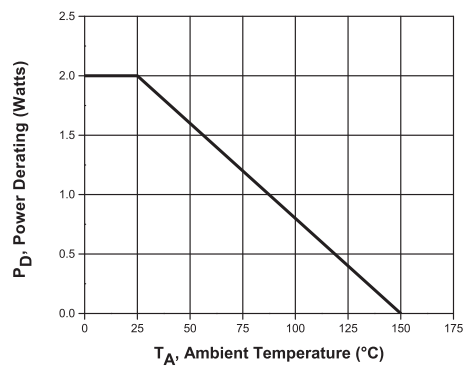
Capacitance



Transfer Characteristics



Power Derating



R3 (7-May 2019)

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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Worldwide Field Representatives:
www.centrasemi.com/wwreps

Worldwide Distributors:
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For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: www.centrasemi.com/terms



<http://www.centrasemi.com>

Product End of Life Notification

PDN ID:	PDN01105
Notification Date:	9/07/18
Last Buy Date:	Stock Only
Last Shipment Date	Stock Only

Please be advised that Central Semiconductor must immediately discontinue the product(s) listed in the attached PDN notice. We are unable to accept any further orders for these products unless we have available inventory on hand.

You may have purchased one or more of the products listed. Please do not hesitate to contact your local Central Semiconductor sales representative with any questions or needs you may have. Central regrets any inconvenience this may cause.

Sincerely,

Central Semiconductor Corp.

DISCLAIMER: This End of Life (EOL) notification is in accordance with JEDEC standard JESD48 - Product Discontinuance. Central Semiconductor Corp. will make every effort to offer life-time buy (LTB) opportunities and/or offer replacement devices to existing customers for discontinued devices, however, one or both may not be possible for all devices. Please contact your local Central Semiconductor sales representative for LTB opportunities/additional information.



<http://www.centralsemi.com>

Product End of Life Notification

PDN ID:	PDN01105
Notification Date:	9/07/18
Last Buy Date:	Stock Only
Last Shipment Date	Stock Only

Summary: The CZDM1003N enhancement mode MOSFET is discontinued and now classified as End of Life (EOL).

Although Central Semiconductor Corp. makes every effort to continue to produce devices that have been proclaimed EOL (End of Life) by other manufacturers, it is an accepted industry practice to discontinue certain devices when customer demand falls below a minimum level of sustainability. Accordingly, the following product(s) have been transitioned to End of Life status as part of Central's ongoing Product Management Process. Any replacement products are noted below. The effective date for placing last purchase orders will be six (6) months from the date of this notice and twelve (12) months from the notice date for final shipments, and minimum order quantities may apply. The last purchase and shipment dates may be extended if inventory is available.

<u>Central Part Number</u>	<u>Replacement</u>
CZDM1003N BK	N/A, Stock Only
CZDM1003N TR	N/A, Stock Only

Central would be happy to assist you by providing additional information or technical data to help locate an alternate source if we have no replacement available. Please email your requests to engineering@centralsemi.com.

DISCLAIMER: This End of Life (EOL) notification is in accordance with JEDEC standard JESD48 - Product Discontinuance. Central Semiconductor Corp. will make every effort to offer life-time buy (LTB) opportunities and/or offer replacement devices to existing customers for discontinued devices, however, one or both may not be possible for all devices. Please contact your local Central Semiconductor sales representative for LTB opportunities/additional information.