

CTLDM7002A-M621

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



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CTLDM7002A-M621 is a silicon N-Channel enhancement-mode MOSFET in a small, thermally efficient, TLM™ 2x1mm package.



MARKING CODE: CP

FEATURES:

- Low $r_{DS(ON)}$
- Low $V_{DS(ON)}$
- Low Threshold Voltage
- Fast Switching
- Logic Level Compatible
- Small TLM™ 2x1mm Package

- Device is **Halogen Free** by design

APPLICATIONS:

- Load/Power Switches
- Power Supply Converter Circuits
- Battery Powered Portable Equipment

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

Drain-Source Voltage
Drain-Gate Voltage
Gate-Source Voltage
Continuous Drain Current
Continuous Source Current (Body Diode)
Maximum Pulsed Drain Current
Maximum Pulsed Source Current
Power Dissipation (Note 1)
Operating and Storage Junction Temperature
Thermal Resistance (Note 1)

SYMBOL

V_{DS}	60	V
V_{DG}	60	V
V_{GS}	40	V
I_D	280	mA
I_S	280	mA
I_{DM}	1.5	A
I_{SM}	1.5	A
P_D	0.9	W
T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
θ_{JA}	139	$^\circ\text{C/W}$

UNITS

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{GSSF}, I_{GSSR}	$V_{GS}=20\text{V}, V_{DS}=0$		100	nA
I_{DSS}	$V_{DS}=60\text{V}, V_{GS}=0$		1.0	μA
I_{DSS}	$V_{DS}=60\text{V}, V_{GS}=0, T_J=125^\circ\text{C}$		500	μA
$I_{D(ON)}$	$V_{GS}=10\text{V}, V_{DS}=10\text{V}$	500		mA
BV_{DSS}	$V_{GS}=0, I_D=10\mu\text{A}$	60		V
$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	1.0	2.5	V
$V_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$		1.0	V
$V_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}$		0.15	V
V_{SD}	$V_{GS}=0, I_S=400\text{mA}$		1.2	V

Notes: (1) FR-4 Epoxy PCB with copper mounting pad area of 33mm².

R3 (9-February 2015)

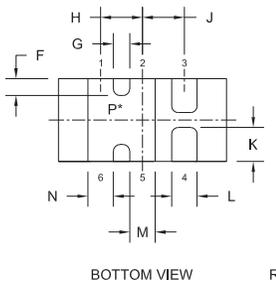
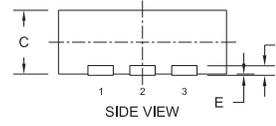
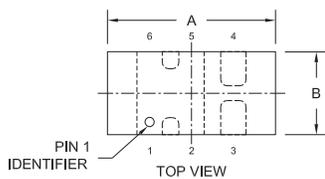
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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$			2.0	Ω
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}, T_J=125^\circ\text{C}$			3.5	Ω
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}$			3.0	Ω
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}, T_J=125^\circ\text{C}$			5.0	Ω
g_{FS}	$V_{DS}=10\text{V}, I_D=200\text{mA}$	80			mS
C_{rss}	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$			5.0	pF
C_{iss}	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$			50	pF
C_{oss}	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$			15	pF
$Q_{g(tot)}$	$V_{DS}=30\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$		0.592		nC
Q_{gs}	$V_{DS}=30\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$		0.196		nC
Q_{gd}	$V_{DS}=30\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$		0.148		nC
t_{on}, t_{off}	$V_{DD}=30\text{V}, V_{GS}=10\text{V}, I_D=200\text{mA},$ $R_G=25\Omega, R_L=150\Omega$			20	ns

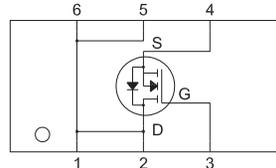
TLM621 CASE - MECHANICAL OUTLINE



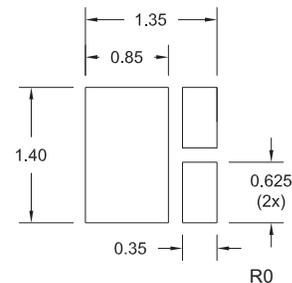
SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.073	0.085	1.850	2.150
B	0.033	0.045	0.850	1.150
C	0.028	0.031	0.700	0.800
D	0.006		0.150	
E	0.000	0.002	0.000	0.050
F	0.008		0.200	
G	0.010		0.250	
H	0.020		0.500	
J	0.020		0.500	
K	0.012	0.020	0.300	0.500
L	0.007	0.012	0.180	0.300
M	0.007	0.012	0.180	0.300
N	0.007	0.012	0.180	0.300

TLM621 (REV: R2)

PIN CONFIGURATION



SUGGESTED MOUNTING PADS
(Dimensions in mm)



LEAD CODE:

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

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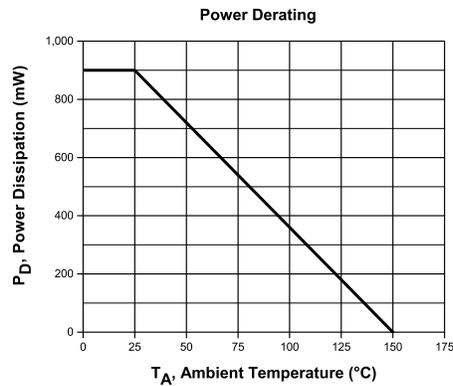
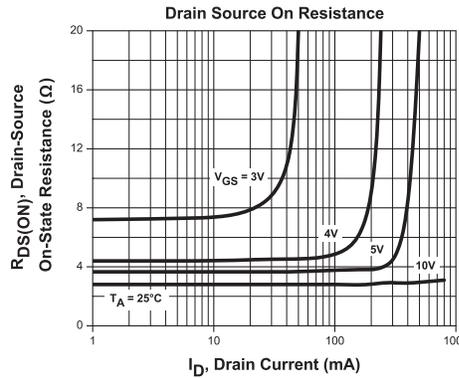
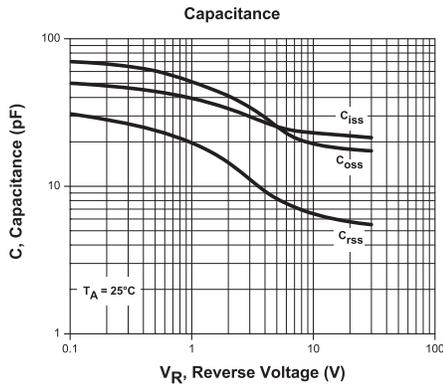
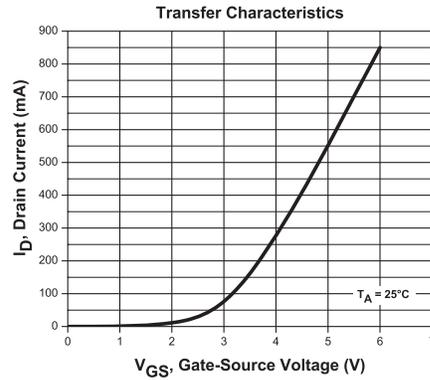
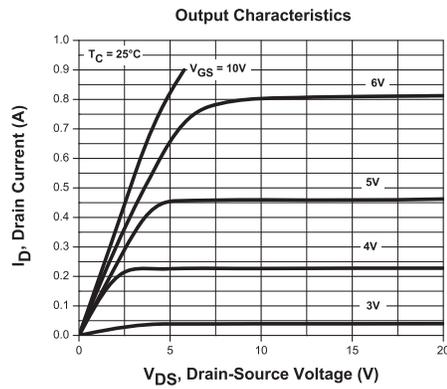
*Exposed pad P connects pins 1, 2, 5, and 6

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TYPICAL ELECTRICAL CHARACTERISTICS



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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 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

Product End of Life Notification

PDN ID:	PDN01096
Notification Date:	8/07/18
Last Buy Date:	2/07/19
Last Shipment Date	8/07/19

Summary: All devices in the TLM621 and TLM621H packages are 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>
CTLDM7002A-M621 BK	N/A, Stock Only
CTLDM7002A-M621 TR	N/A, Stock Only
CTLDM7003-M621 BK	N/A, Stock Only
CTLDM7003-M621 TR	N/A, Stock Only
CTLDM7120-M621H BK	N/A, Stock Only
CTLDM7120-M621H TR	N/A, Stock Only
CTLDM8002A-M621 BK	N/A, Stock Only
CTLDM8002A-M621 TR	N/A, Stock Only
CTLDM8002A-M621H BK	N/A, Stock Only
CTLDM8002A-M621H TR	N/A, Stock Only
CTLDM8120-M621H BK	N/A, Stock Only
CTLDM8120-M621H TR	N/A, Stock Only
CTLSH05-40M621 BK	N/A, Stock Only
CTLSH05-40M621 TR	N/A, Stock Only
CTLSH1-40M621H BK	N/A, Stock Only
CTLSH1-40M621H TR	N/A, Stock Only
CTLT3410-M621 BK	N/A, Stock Only
CTLT3410-M621 TR	N/A, Stock Only
CTLT7410-M621 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@centrasemi.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.