

CTLDM7002A-M621

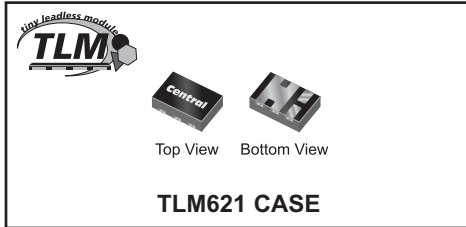
**SURFACE MOUNT SILICON  
N-CHANNEL  
ENHANCEMENT-MODE  
MOSFET**



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
$V_{DG}$	60
$V_{GS}$	40
$I_D$	280
$I_S$	280
$I_{DM}$	1.5
$I_{SM}$	1.5
$P_D$	0.9
$T_J, T_{stg}$	-65 to +150
$\theta_{JA}$	139

**UNITS**

V
V
V
mA
mA
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	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	$\mu\text{A}$
$I_{DSS}$	$V_{DS}=60\text{V}, V_{GS}=0, T_J=125^\circ\text{C}$		500	$\mu\text{A}$
$I_{D(ON)}$	$V_{GS}=10\text{V}, V_{DS}=10\text{V}$	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 33mm<sup>2</sup>.

R3 (9-February 2015)

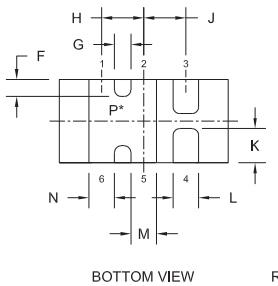
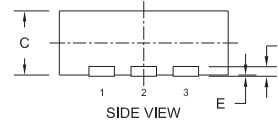
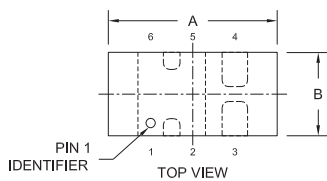
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$			2.0	$\Omega$
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}, T_J=125^\circ\text{C}$			3.5	$\Omega$
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}$			3.0	$\Omega$
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}, T_J=125^\circ\text{C}$			5.0	$\Omega$
$g_{FS}$	$V_{DS}=10\text{V}, I_D=200\text{mA}$	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

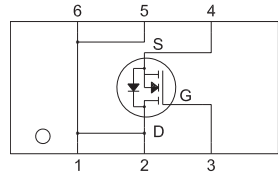
**TLM621 CASE - MECHANICAL OUTLINE**



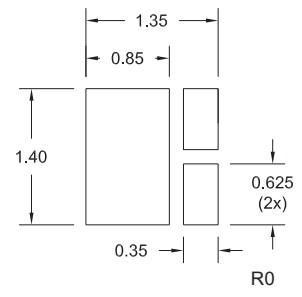
SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.073	0.085	1.850	2.150
B	0.033	0.045	0.850	1.150
C	0.028	0.031	0.700	0.800
D	0.006		0.150	
E	0.000	0.002	0.000	0.050
F	0.008		0.200	
G	0.010		0.250	
H	0.020		0.500	
J	0.020		0.500	
K	0.012	0.020	0.300	0.500
L	0.007	0.012	0.180	0.300
M	0.007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

**MARKING CODE: CP**

R3 (9-February 2015)

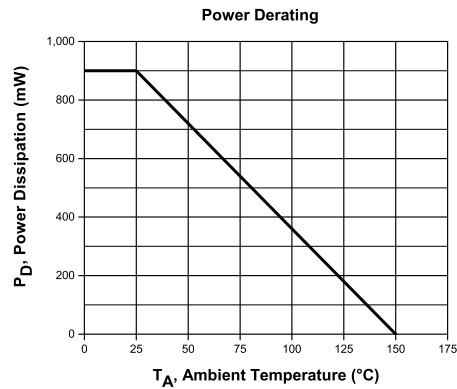
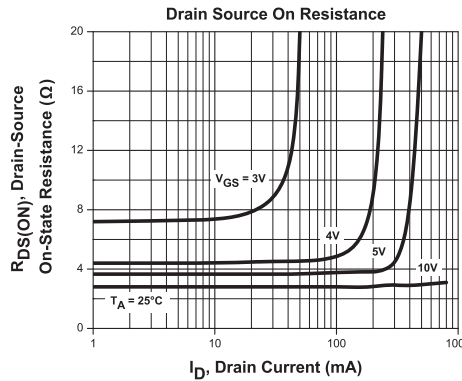
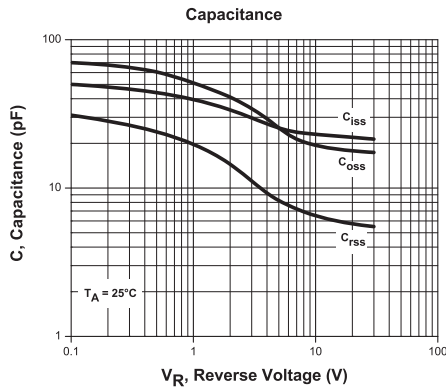
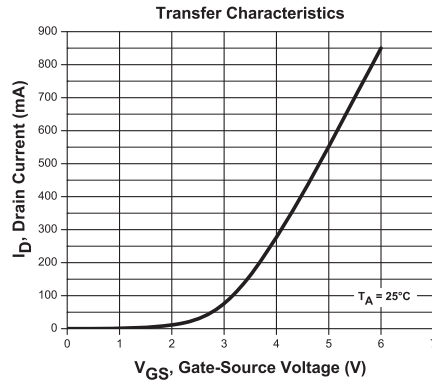
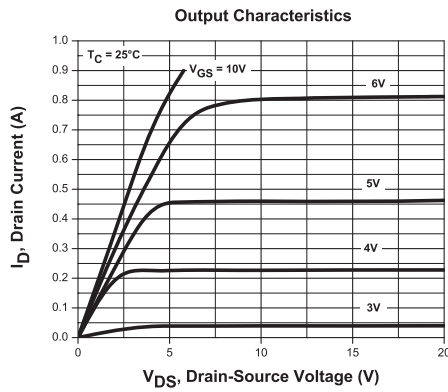
\*Exposed pad P connects pins 1, 2, 5, and 6

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### TYPICAL ELECTRICAL CHARACTERISTICS



R3 (9-February 2015)

## 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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### CONTACT US

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