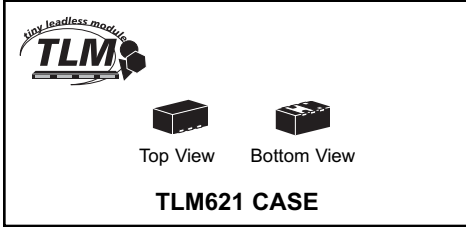




**CTLDM7002A-M621**  
**SURFACE MOUNT**  
**TINY LEADLESS MODULE™**  
**ENHANCEMENT-MODE**  
**N-CHANNEL MOSFET**



**Central™**  
**Semiconductor Corp.**

**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:**

- Device is **Halogen Free** by design
- Low  $R_{DS(on)}$
- Low  $V_{DS(on)}$
- Low Threshold Voltage
- Fast Switching
- Logic Level Compatible
- Small TLM™ 2x1mm Package

**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
$I_{GSSF}$	$V_{GS}=20V, V_{DS}=0V$		100	nA
$I_{GSSR}$	$V_{GS}=20V, V_{DS}=0V$		100	nA
$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$		1.0	$\mu\text{A}$
$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V, T_J=125^\circ\text{C}$		500	$\mu\text{A}$
$I_{D(ON)}$	$V_{GS}=10V, V_{DS} \geq 2V_{DS(ON)}$	500		mA
$BV_{DSS}$	$V_{GS}=0V, I_D=10\mu\text{A}$	60		V
$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	1.0	2.5	V
$V_{DS(ON)}$	$V_{GS}=10V, I_D=500\text{mA}$		1.0	V
$V_{DS(ON)}$	$V_{GS}=5.0V, I_D=50\text{mA}$		0.15	V
$V_{SD}$	$V_{GS}=0V, I_S=400\text{mA}$		1.2	V

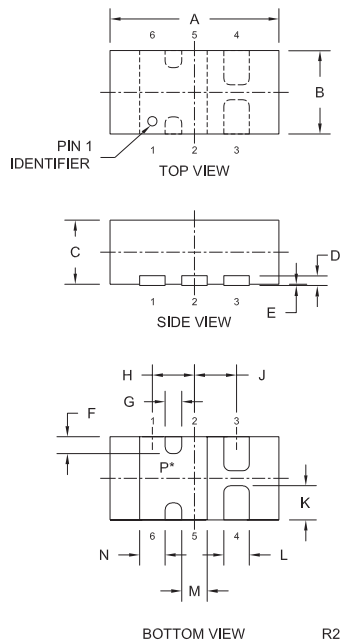
Notes: (1) FR-4 Epoxy PCB with copper mounting pad area of 33mm<sup>2</sup>.

R1 (14-October 2008)

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

SYMBOL	TEST CONDITIONS	MIN	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	$\Omega$
$g_{FS}$	$V_{DS} \geq 2V_{DS(ON)}, I_D=200\text{mA}$	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
$t_{on}$	$V_{DD}=30\text{V}, V_{GS}=10\text{V}, I_D=200\text{mA}$		20	ns
$t_{off}$	$R_G=25\Omega, R_L=150\Omega$		20	ns

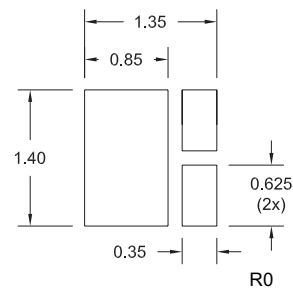
**TLM621 CASE - MECHANICAL OUTLINE**



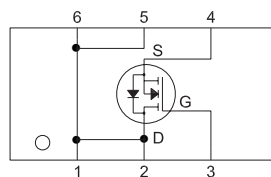
SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.073	0.085	1.850	2.150
B	0.033	0.045	0.850	1.150
C	0.028	0.031	0.700	0.800
D	0.006		0.150	
E	0.000	0.002	0.000	0.050
F	0.008		0.200	
G	0.010		0.250	
H	0.020		0.500	
J	0.020		0.500	
K	0.012	0.020	0.300	0.500
L	0.007	0.012	0.180	0.300
M	0.007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

TLM621 (REV: R2)

**SUGGESTED MOUNTING PADS**  
(Dimensions in mm)



**PIN CONFIGURATION**



**LEAD CODE:**

- 1) DRAIN
- 2) DRAIN
- 3) GATE
- 4) SOURCE
- 5) DRAIN
- 6) DRAIN

**MARKING CODE: CP**

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