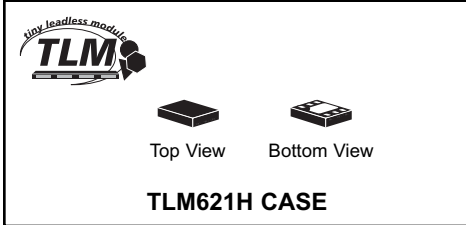




CTLDM7002A-M621H

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



Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CTLDM7002A-M621H is a very low profile (0.4mm) Silicon N-Channel Enhancement-mode MOSFET in a small, thermally efficient, 1.5mm x 2mm TLM™ package.

MARKING CODE: CND

FEATURES:

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

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	1.6
T_J, T_{stg}	-65 to +150
Θ_{JA}	75

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)

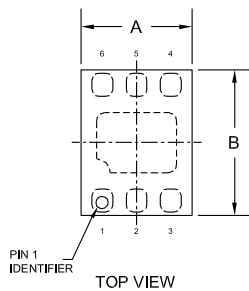
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{GSSF}	$V_{GS}=20V, V_{DS}=0V$		100	nA
I_{GSSR}	$V_{GS}=20V, V_{DS}=0V$		100	nA
I_{DSS}	$V_{DS}=60V, V_{GS}=0V$		1.0	μA
I_{DSS}	$V_{DS}=60V, V_{GS}=0V, T_J=125^\circ\text{C}$		500	μA
$I_{D(ON)}$	$V_{GS}=10V, V_{DS} \geq 2V_{DS(ON)}$	500		mA
BV_{DSS}	$V_{GS}=0V, I_D=10\mu\text{A}$	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) Mounted on a 4-layer JEDEC test board with one thermal via connecting the exposed thermal pad to the first buried plane. PCB was constructed as per JEDEC standards JESD51-5 and JESD51-7.

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

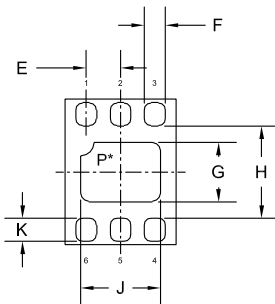
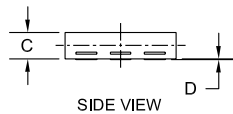
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$		2.0	Ω
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}, T_J=125^\circ\text{C}$		3.5	Ω
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}$		3.0	Ω
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}, T_J=125^\circ\text{C}$		5.0	Ω
g_{FS}	$V_{DS} \geq 2V_{DS(ON)}, I_D=200\text{mA}$	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

TLM621H CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.053	0.065	1.35	1.65
B	0.073	0.085	1.85	2.15
C	0.012	0.016	0.30	0.40
D	0.000	0.002	0.00	0.05
E	0.020		0.50	
F	0.008	0.012	0.20	0.30
G	0.027	0.035	0.69	0.89
H	0.053	0.057	1.35	1.45
J	0.039	0.047	0.99	1.19
K	0.011	0.015	0.28	0.38

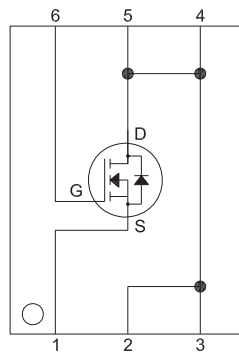
TLM621H (REV:R0)



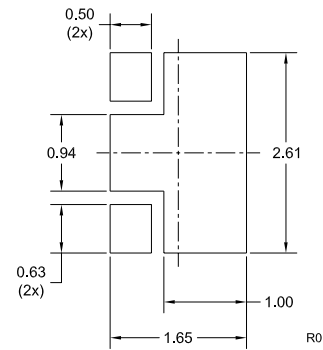
R0

*Exposed pad P internally connected to pins 2, 3, 4, and 5.

PIN CONFIGURATION



OPTIONAL MOUNTING PADS
(Dimensions in mm)



For standard mounting refer to TLM621H Package Details

LEAD CODE:

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

MARKING CODE: CND

R1 (14-October 2008)