

CTLDM8002A-M621H

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



[www.centrasemi.com](http://www.centrasemi.com)

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CTLDM8002A-M621H is a very low profile (0.4mm) P-Channel enhancement-mode MOSFET in a small, thermal efficient, 1.5mm x 2mm TLM™ package.

**MARKING CODE: CNC**

**FEATURES:**

- 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:** ( $T_A=25^\circ\text{C}$ )

	SYMBOL		UNITS
Drain-Source Voltage	$V_{DS}$	50	V
Drain-Gate Voltage	$V_{DG}$	50	V
Gate-Source Voltage	$V_{GS}$	20	V
Continuous Drain Current	$I_D$	280	mA
Continuous Source Current (Body Diode)	$I_S$	280	mA
Maximum Pulsed Drain Current	$I_{DM}$	1.5	A
Maximum Pulsed Source Current	$I_{SM}$	1.5	A
Power Dissipation (Note 1)	$P_D$	1.6	W
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$
Thermal Resistance (Note 1)	$\theta_{JA}$	75	$^\circ\text{C/W}$

**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
$I_{DSS}$	$V_{DS}=50\text{V}, V_{GS}=0$		1.0	$\mu\text{A}$
$I_{DSS}$	$V_{DS}=50\text{V}, V_{GS}=0, T_J=125^\circ\text{C}$		500	$\mu\text{A}$
$I_{D(ON)}$	$V_{GS}=10\text{V}, V_{DS}=10\text{V}$	500		mA
$BV_{DSS}$	$V_{GS}=0, I_D=10\mu\text{A}$	50		V
$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	1.0	2.5	V
$V_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$		1.5	V
$V_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}$		0.15	V
$V_{SD}$	$V_{GS}=0, I_S=115\text{mA}$		1.3	V
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$		2.5	$\Omega$
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}, T_J=125^\circ\text{C}$		4.0	$\Omega$
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}$		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	$\Omega$

R3 (17-February 2010)

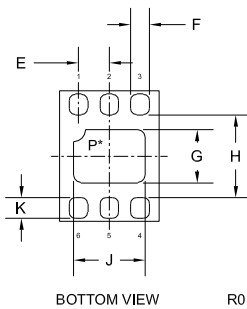
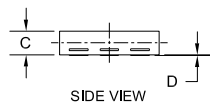
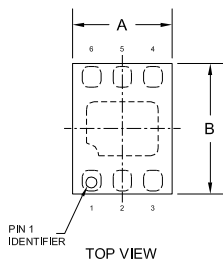
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$g_{FS}$	$V_{DS}=10\text{V}$ , $I_D=200\text{mA}$	200		mS
$C_{rss}$	$V_{DS}=25\text{V}$ , $V_{GS}=0$ , $f=1.0\text{MHz}$		7.0	pF
$C_{iss}$	$V_{DS}=25\text{V}$ , $V_{GS}=0$ , $f=1.0\text{MHz}$		70	pF
$C_{oss}$	$V_{DS}=25\text{V}$ , $V_{GS}=0$ , $f=1.0\text{MHz}$		15	pF
$t_{on}$ , $t_{off}$	$V_{DD}=30\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=200\text{mA}$ , $R_G=25\Omega$ , $R_L=150\Omega$		20	ns

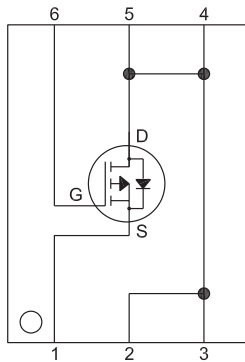
**TLM621H CASE - MECHANICAL OUTLINE**



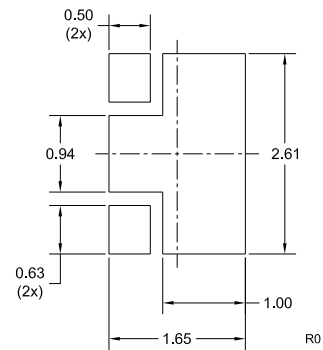
SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.053	0.065	1.35	1.65
B	0.073	0.085	1.85	2.15
C	0.012	0.016	0.30	0.40
D	0.000	0.002	0.00	0.05
E	0.020		0.50	
F	0.008	0.012	0.20	0.30
G	0.027	0.035	0.69	0.89
H	0.053	0.057	1.35	1.45
J	0.039	0.047	0.99	1.19
K	0.011	0.015	0.28	0.38

TLM621H (REV:R0)

**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: CNC**

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

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