

CTLDM8002A-M621H

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



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)	θ_{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	μA
I_{DSS}	$V_{DS}=50\text{V}, V_{GS}=0, T_J=125^\circ\text{C}$		500	μA
$I_{D(ON)}$	$V_{GS}=10\text{V}, V_{DS}=10\text{V}$	500		mA
BV_{DSS}	$V_{GS}=0, I_D=10\mu\text{A}$	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	Ω
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}, T_J=125^\circ\text{C}$		4.0	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

R3 (17-February 2010)

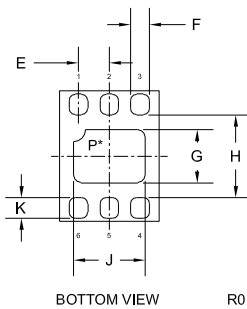
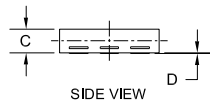
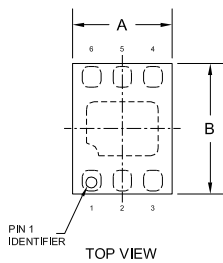
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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

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

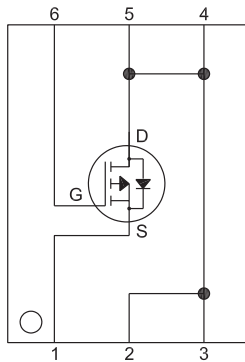
TLM621H CASE - MECHANICAL OUTLINE



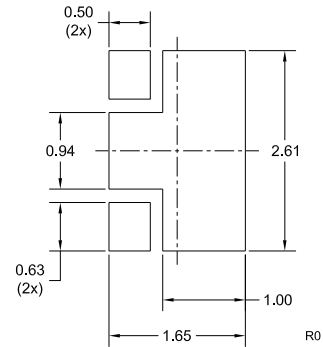
SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.053	0.065	1.35	1.65
B	0.073	0.085	1.85	2.15
C	0.012	0.016	0.30	0.40
D	0.000	0.002	0.00	0.05
E	0.020		0.50	
F	0.008	0.012	0.20	0.30
G	0.027	0.035	0.69	0.89
H	0.053	0.057	1.35	1.45
J	0.039	0.047	0.99	1.19
K	0.011	0.015	0.28	0.38

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

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

R3 (17-February 2010)