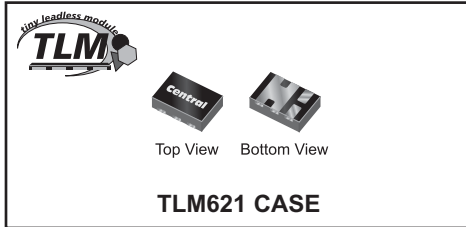


CTLDM8002A-M621

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



www.centrasemi.com



DESCRIPTION:

The CENTRAL SEMICONDUCTOR CTLDM8002A-M621 is a silicon P-Channel enhancement-mode MOSFET in a small, thermally efficient, TLM™ 2x1mm package.

MARKING CODE: CN

FEATURES:

- 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

SYMBOL		UNITS
V_{DS}	50	V
V_{DG}	50	V
V_{GS}	20	V
I_D	280	mA
I_S	280	mA
I_{DM}	1.5	A
I_{SM}	1.5	A
P_D	0.9	W
T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
θ_{JA}	139	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{GSSF}, I_{GSSR}	$V_{GS}=20V, V_{DS}=0$		100	nA
I_{DSS}	$V_{DS}=50V, V_{GS}=0$		1.0	μA
I_{DSS}	$V_{DS}=50V, V_{GS}=0, T_J=125^\circ\text{C}$		500	μA
$I_{D(ON)}$	$V_{GS}=10V, V_{DS}=10V$	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
$V_{DS(ON)}$	$V_{GS}=10V, I_D=500\text{mA}$		1.5	V
$V_{DS(ON)}$	$V_{GS}=5.0V, I_D=50\text{mA}$		0.15	V
V_{SD}	$V_{GS}=0, I_S=115\text{mA}$		1.3	V
$r_{DS(ON)}$	$V_{GS}=10V, I_D=500\text{mA}$		2.5	Ω
$r_{DS(ON)}$	$V_{GS}=10V, I_D=500\text{mA}, T_J=125^\circ\text{C}$		4.0	Ω
$r_{DS(ON)}$	$V_{GS}=5.0V, I_D=50\text{mA}$		3.0	Ω
$r_{DS(ON)}$	$V_{GS}=5.0V, I_D=50\text{mA}, T_J=125^\circ\text{C}$		5.0	Ω
g_{FS}	$V_{DS}=10V, I_D=200\text{mA}$	200		mS
C_{rss}	$V_{DS}=25V, V_{GS}=0, f=1.0\text{MHz}$		7.0	pF
C_{iss}	$V_{DS}=25V, V_{GS}=0, f=1.0\text{MHz}$		70	pF
C_{oss}	$V_{DS}=25V, V_{GS}=0, f=1.0\text{MHz}$		15	pF

Note: (1) FR-4 Epoxy PCB with copper mounting pad area of 33mm².

R2 (6-February 2015)

CTLDM8002A-M621

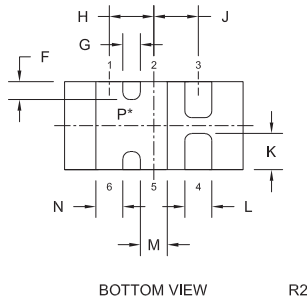
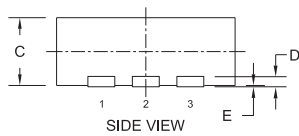
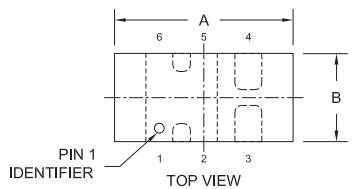
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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

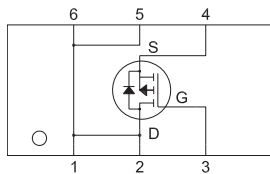
SYMBOL	TEST CONDITIONS	TYP	MAX	UNITS
$Q_{g(\text{tot})}$	$V_{DS}=25\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$	0.72		nC
Q_{gs}	$V_{DS}=25\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$	0.25		nC
Q_{gd}	$V_{DS}=25\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$	0.16		nC
$t_{\text{on}}, t_{\text{off}}$	$V_{DD}=30\text{V}, V_{GS}=10\text{V}, I_D=200\text{mA},$ $R_G=25\Omega, R_L=150\Omega$		20	ns

TLM621 CASE - MECHANICAL OUTLINE



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

PIN CONFIGURATION

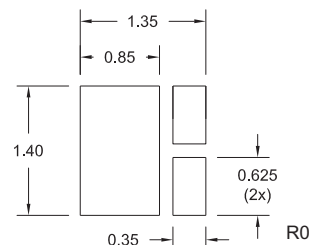


SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.073	0.085	1.850	2.150
B	0.033	0.045	0.850	1.150
C	0.028	0.031	0.700	0.800
D	0.006		0.150	
E	0.000	0.002	0.000	0.050
F	0.008		0.200	
G	0.010		0.250	
H	0.020		0.500	
J	0.020		0.500	
K	0.012	0.020	0.300	0.500
L	0.007	0.012	0.180	0.300
M	0.007	0.012	0.180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

TLM621 (REV: R2)

SUGGESTED MOUNTING PADS

(Dimensions in mm)



LEAD CODE:

- 1) Drain
- 2) Drain
- 3) Gate
- 4) Source
- 5) Drain
- 6) Drain

MARKING CODE: CN

R2 (6-February 2015)

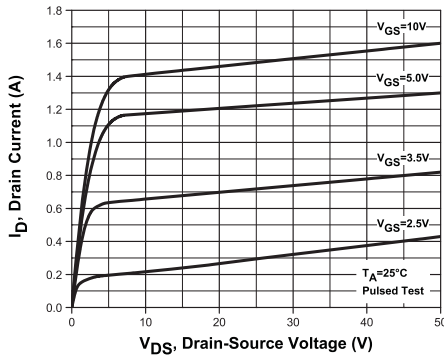
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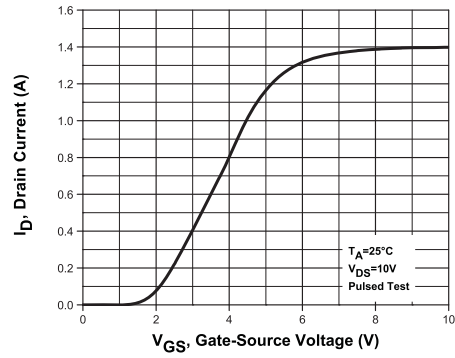


TYPICAL ELECTRICAL CHARACTERISTICS

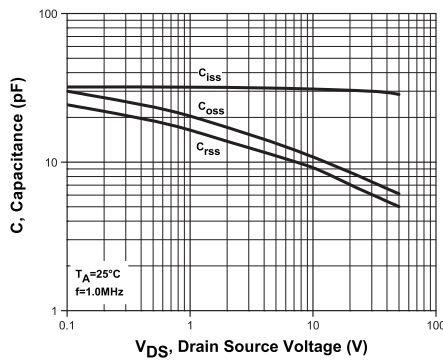
Output Characteristics



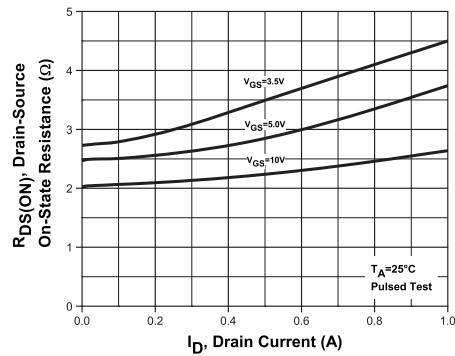
Transfer Characteristics



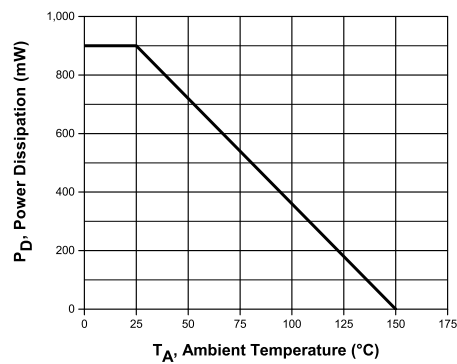
Capacitance



Drain Source On Resistance



Power Derating



R2 (6-February 2015)

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SERVICES

- Bonded Inventory
- Custom Electrical Screening
- Custom Electrical Characteristic Curves
- SPICE Models
- Custom Packaging
- Package Base Options
- Custom Device Development/ Multi Discrete Modules (MDM™)
- Bare Die Available for Hybrid Applications

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