

**CTLDM8120-M563**  
**SURFACE MOUNT**  
**P-CHANNEL**  
**ENHANCEMENT-MODE**  
**SILICON MOSFET**



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



• Device is **Halogen Free** by design

**APPLICATIONS:**

- Load Power Switches
- DC/DC Converters
- Battery powered devices including Cell Phones, PDAs, Digital Cameras, MP3 Players, etc.

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

Drain-Source Voltage  
Gate-Source Voltage  
Continuous Drain Current (Steady State)  
Continuous Drain Current,  $t \leq 5.0\text{s}$   
Continuous Source Current (Body Diode)  
Maximum Pulsed Drain Current,  $t_p=10\mu\text{s}$   
Maximum Pulsed Source Current,  $t_p=10\mu\text{s}$   
Power Dissipation (Note 1)  
Operating and Storage Junction Temperature  
Thermal Resistance (Note 1)

**SYMBOL**

SYMBOL		UNITS
$V_{DS}$	20	V
$V_{GS}$	8.0	V
$I_D$	0.86	A
$I_D$	0.95	A
$I_S$	0.36	A
$I_{DM}$	4.0	A
$I_{SM}$	4.0	A
$P_D$	500	mW
$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$
$\theta_{JA}$	250	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{GSSF}, I_{GSSR}$	$V_{GS}=8.0\text{V}, V_{DS}=0$		1.0	50	nA
$I_{DSS}$	$V_{DS}=20\text{V}, V_{GS}=0$		5.0	500	nA
$BV_{DSS}$	$V_{GS}=0, I_D=250\mu\text{A}$	20	24		V
$V_{GS(th)}$	$V_{DS}=10\text{V}, I_D=250\mu\text{A}$	0.45	0.76	1.0	V
$V_{SD}$	$V_{GS}=0, I_S=360\text{mA}$			0.9	V
$r_{DS(ON)}$	$V_{GS}=4.5\text{V}, I_D=950\text{mA}$		0.085	0.150	$\Omega$
$r_{DS(ON)}$	$V_{GS}=4.5\text{V}, I_D=770\text{mA}$		0.085	0.142	$\Omega$
$r_{DS(ON)}$	$V_{GS}=2.5\text{V}, I_D=670\text{mA}$		0.13	0.20	$\Omega$
$r_{DS(ON)}$	$V_{GS}=1.8\text{V}, I_D=200\text{mA}$		0.19	0.24	$\Omega$
$g_{FS}$	$V_{DS}=10\text{V}, I_D=810\text{mA}$	2.0			S
$C_{rss}$	$V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$		80		pF
$C_{iss}$	$V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$		200		pF
$C_{oss}$	$V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$		60		pF
$t_{on}$	$V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=950\text{mA}, R_G=6.0\Omega$		20		ns
$t_{off}$	$V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=950\text{mA}, R_G=6.0\Omega$		25		ns

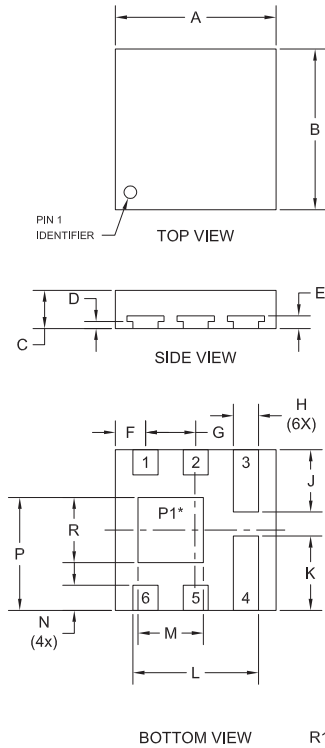
Notes: (1) Mounted on 2 inch square FR4 PCB with copper mounting pad area of 2.4mm<sup>2</sup>.

R2 (17-February 2010)

**CTLDM8120-M563**  
**SURFACE MOUNT**  
**P-CHANNEL**  
**ENHANCEMENT-MODE**  
**SILICON MOSFET**

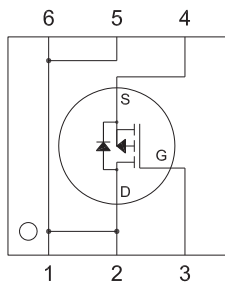


**TLM563 CASE - MECHANICAL OUTLINE**



\* Exposed pad P1 common to pins 1, 2, 5, and 6.

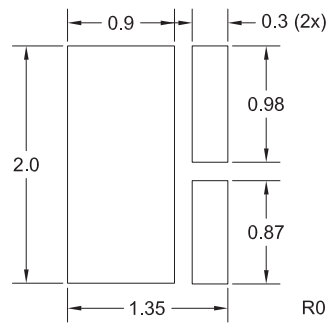
**PIN CONFIGURATION**



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
A	0.062	0.064	1.57	1.63
B	0.062	0.064	1.57	1.63
C	0.014	0.017	0.36	0.43
D	0.002	0.004	0.04	0.10
E	0.004	0.006	0.10	0.16
F	0.011	0.013	0.27	0.33
G	0.019	0.021	0.47	0.53
H	0.009	0.011	0.22	0.28
J	0.023	0.026	0.59	0.65
K	0.028	0.030	0.71	0.77
L	0.048	0.050	1.22	1.28
M	0.024	0.027	0.62	0.68
N	0.009	0.011	0.22	0.28
P	0.043	0.045	1.09	1.16
R	0.024	0.027	0.62	0.68

TLM563 (REV:R1)

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



**LEAD CODE:**

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

**MARKING CODE: CKS**

R2 (17-February 2010)