

CTLDM7120-M563
SURFACE MOUNT
N-CHANNEL
ENHANCEMENT-MODE
SILICON MOSFET



www.centrasemi.com



DESCRIPTION:

The CENTRAL SEMICONDUCTOR CTLDM7120-M563 is a high quality, enhancement-mode N-channel MOSFET packaged in a space saving 1.6 x 1.6mm TLM™ surface mount package. This device is a TLM™ equivalent of the popular CMLDM7120G, SOT-563 device, featuring enhanced thermal characteristics, a package footprint compatible with standard SOT-563 mounting pad geometries, and a height profile of only 0.4mm.

MARKING CODE: CKN

FEATURES:

- ESD protection up to 2kV
- High Current ($I_D=1.0A$)
- Low $r_{DS(ON)}$ (0.14Ω MAX @ $V_{GS}=2.5V$, $I_D=0.5A$)
- Logic level compatibility
- High Thermal Efficiency
- TLM563 with a package profile of 0.4mm, compatible with SOT-563 mounting geometries

• 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: ($T_A=25^\circ C$)

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

SYMBOL

V_{DS}	20
V_{GS}	8.0
I_D	1.0
I_{DM}	4.0
P_D	500
T_J, T_{stg}	-65 to +150
θ_{JA}	250

UNITS

V
V
A
A
mW
$^\circ C$
$^\circ C/W$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{GSSF}, I_{GSSR}	$V_{GS}=8.0V, V_{DS}=0$			10	μA
I_{DSS}	$V_{DS}=20V, V_{GS}=0$			10	μA
BV_{DSS}	$V_{GS}=0, I_D=250\mu A$	20			V
$V_{GS(th)}$	$V_{DS}=10V, I_D=1.0mA$	0.5		1.2	V
V_{SD}	$V_{GS}=0, I_S=1.0A$			1.1	V
$r_{DS(ON)}$	$V_{GS}=4.5V, I_D=500mA$		0.075	0.10	Ω
$r_{DS(ON)}$	$V_{GS}=2.5V, I_D=500mA$		0.10	0.14	Ω
$r_{DS(ON)}$	$V_{GS}=1.5V, I_D=100mA$		0.20	0.25	Ω
g_{FS}	$V_{DS}=10V, I_D=500mA$		2.5		S
C_{rss}	$V_{DS}=10V, V_{GS}=0, f=1.0MHz$		45		pF
C_{iss}	$V_{DS}=10V, V_{GS}=0, f=1.0MHz$		220		pF
C_{oss}	$V_{DS}=10V, V_{GS}=0, f=1.0MHz$		120		pF
t_{on}	$V_{DD}=10V, V_{GS}=5.0V, I_D=500mA$		25		ns
t_{off}	$V_{DD}=10V, V_{GS}=5.0V, I_D=500mA$		140		ns

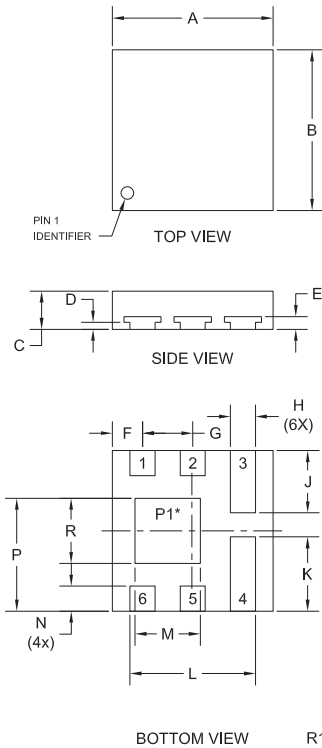
Notes: (1) Mounted on 2 inch square FR4 PCB with copper mounting pad area of 2.4mm².

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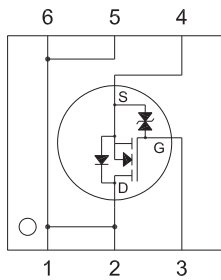


TLM563 CASE - MECHANICAL OUTLINE



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

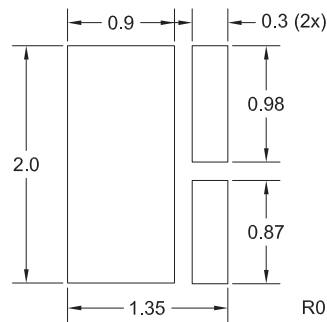
PIN CONFIGURATION



SYMBOL	DIMENSIONS		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

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