

CMLDM7120TG
SURFACE MOUNT SILICON
N-CHANNEL
ENHANCEMENT-MODE
MOSFET



SOT-563 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMLDM7120TG is an enhancement-mode N-Channel MOSFET, manufactured by the N-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications. This MOSFET offers low $r_{DS(ON)}$ and a MAX threshold voltage of 0.85V.

MARKING CODE: CT7

FEATURES:

- Device is **Halogen Free** by design
- ESD protection up to 2kV
- Low $r_{DS(ON)}$ (0.25 Ω MAX @ $V_{GS}=1.5V$)
- MAX Threshold Voltage (0.85V)
- Logic level compatibility

APPLICATIONS:

- Load/Power switches
- Power supply converter circuits
- Battery powered portable equipment

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)
Power Dissipation (Note 2)
Power Dissipation (Note 3)
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL

SYMBOL		UNITS
V_{DS}	20	V
V_{GS}	8.0	V
I_D	1.0	A
I_{DM}	4.0	A
P_D	350	mW
P_D	300	mW
P_D	150	mW
T_J, T_{stg}	-65 to +150	$^\circ C$
θ_{JA}	357	$^\circ C/W$

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		0.85	V
V_{SD}	$V_{GS}=0, I_S=1.0A$			1.10	V
$r_{DS(ON)}$	$V_{GS}=4.5V, I_D=0.5A$		0.075	0.10	Ω
$r_{DS(ON)}$	$V_{GS}=2.5V, I_D=0.5A$		0.10	0.14	Ω
$r_{DS(ON)}$	$V_{GS}=1.5V, I_D=0.1A$		0.20	0.25	Ω
$r_{DS(ON)}$	$V_{GS}=1.2V, I_D=0.1A$		0.80		Ω
g_{FS}	$V_{DS}=10V, I_D=0.5A$		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
$Q_g(tot)$	$V_{DS}=10V, V_{GS}=4.5V, I_D=1.0A$		2.4		nC
Q_{gs}	$V_{DS}=10V, V_{GS}=4.5V, I_D=1.0A$		0.25		nC
Q_{gd}	$V_{DS}=10V, V_{GS}=4.5V, I_D=1.0A$		0.65		nC
t_{on}	$V_{DD}=10V, V_{GS}=5.0V, I_D=0.5A$		25		ns
t_{off}	$V_{DD}=10V, V_{GS}=5.0V, I_D=0.5A$		140		ns

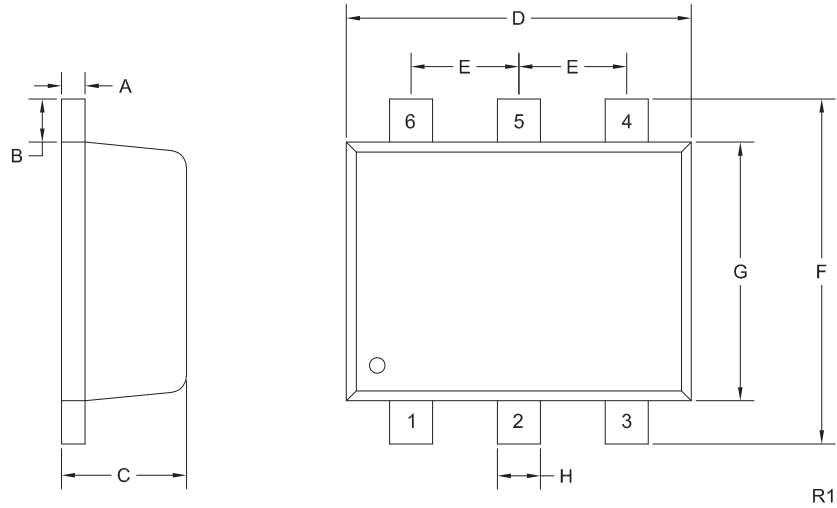
Notes: (1) Ceramic or aluminum core PC Board with copper mounting pad area of 4.0mm²
(2) FR-4 Epoxy PC Board with copper mounting pad area of 4.0mm²
(3) FR-4 Epoxy PC Board with copper mounting pad area of 1.4mm²

R3 (28-January 2014)

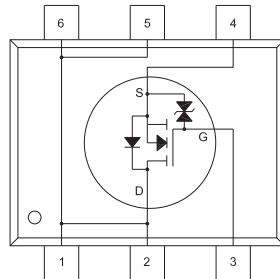
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SOT-563 CASE - MECHANICAL OUTLINE



PIN CONFIGURATION



LEAD CODE:

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

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DIMENSIONS

SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.0027	0.007	0.07	0.18
B	0.008		0.20	
C	0.017	0.024	0.45	0.60
D	0.059	0.067	1.50	1.70
E	0.020		0.50	
F	0.061	0.067	1.55	1.70
G	0.045	0.049	1.15	1.25
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R1)

R3 (28-January 2014)