

CMLDM7120G

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



www.centrasemi.com

PICOmini™



SOT-563 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMLDM7120G is an Enhancement-mode N-Channel Field Effect Transistor, manufactured by the N-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications. This MOSFET offers Low $r_{DS(ON)}$ and Low Threshold Voltage.

MARKING CODE: C7G

• Device is **Halogen Free** by design

APPLICATIONS:

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

FEATURES:

- ESD protection up to 2kV
- Low $r_{DS(ON)}$ (0.25Ω MAX @ $V_{GS}=1.5V$)
- High current ($I_D=1.0A$)
- Logic level compatibility

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

V_{DS} 20
 V_{GS} 8.0
 I_D 1.0
 I_{DM} 4.0
 P_D 350
 P_D 300
 P_D 150
 T_J, T_{stg} -65 to +150
 θ_{JA} 357

UNITS

V
 V
 A
 A
 mW
 mW
 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
$r_{DS(ON)}$	$V_{GS}=4.5V, I_D=0.5A$		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
$Q_g(tot)$	$V_{DS}=10V, V_{GS}=4.5V, I_D=1.0A$		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
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
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

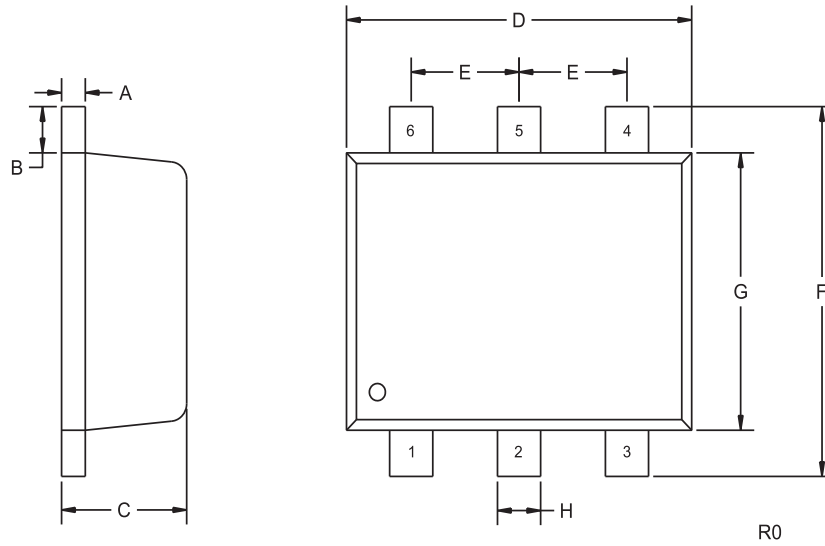
- Notes: (1) Ceramic or aluminum core PC Board with copper mounting pad area of 4.0mm²
 (2) FR-4 Epoxy PC Board with copper mounting pad area of 4.0mm²
 (3) FR-4 Epoxy PC Board with copper mounting pad area of 1.4mm²

R4 (2-August 2011)

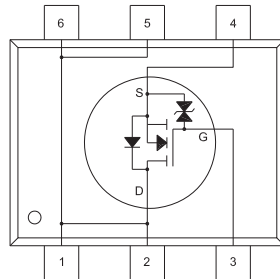
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SOT-563 CASE - MECHANICAL OUTLINE



PIN CONFIGURATION



LEAD CODE:

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

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SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.004	0.007	0.10	0.18
B	0.008		0.20	
C	0.022	0.024	0.56	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	0.047		1.20	
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R0)

R4 (2-August 2011)