

**CMLDM7120G****SURFACE MOUNT SILICON  
N-CHANNEL  
ENHANCEMENT-MODE  
MOSFET****SOT-563 CASE**[www.centrasemi.com](http://www.centrasemi.com)**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMLDM7120G 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 low threshold voltage.

**MARKING CODE: C7G**

• Device is **Halogen Free** by design

**APPLICATIONS:**

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

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

Drain-Source Voltage
Gate-Source Voltage
Continuous Drain Current (Steady State)
Maximum Pulsed Drain Current, $t_p=10\mu\text{s}$
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	$^\circ\text{C}$
$\theta_{JA}$	357	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{GSSF}, I_{GSSR}$	$V_{GS}=8.0\text{V}, V_{DS}=0$			10	$\mu\text{A}$
$I_{DSS}$	$V_{DS}=20\text{V}, V_{GS}=0$			10	$\mu\text{A}$
$BV_{DSS}$	$V_{GS}=0, I_D=250\mu\text{A}$	20			V
$V_{GS(th)}$	$V_{DS}=10\text{V}, I_D=1.0\text{mA}$	0.5		1.2	V
$V_{SD}$	$V_{GS}=0, I_S=1.0\text{A}$			1.1	V
$r_{DS(ON)}$	$V_{GS}=4.5\text{V}, I_D=0.5\text{A}$		0.075	0.10	$\Omega$
$r_{DS(ON)}$	$V_{GS}=2.5\text{V}, I_D=0.5\text{A}$		0.10	0.14	$\Omega$
$r_{DS(ON)}$	$V_{GS}=1.5\text{V}, I_D=0.1\text{A}$		0.20	0.25	$\Omega$
$g_{FS}$	$V_{DS}=10\text{V}, I_D=0.5\text{A}$		2.5		S
$C_{rss}$	$V_{DS}=10\text{V}, V_{GS}=0, f=1.0\text{MHz}$		45		pF
$C_{iss}$	$V_{DS}=10\text{V}, V_{GS}=0, f=1.0\text{MHz}$		220		pF
$C_{oss}$	$V_{DS}=10\text{V}, V_{GS}=0, f=1.0\text{MHz}$		120		pF
$Q_g(\text{tot})$	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=1.0\text{A}$		2.4		nC
$Q_{gs}$	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=1.0\text{A}$		0.25		nC
$Q_{gd}$	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=1.0\text{A}$		0.65		nC
$t_{on}$	$V_{DD}=10\text{V}, V_{GS}=5.0\text{V}, I_D=0.5\text{A}$		25		ns
$t_{off}$	$V_{DD}=10\text{V}, V_{GS}=5.0\text{V}, I_D=0.5\text{A}$		140		ns

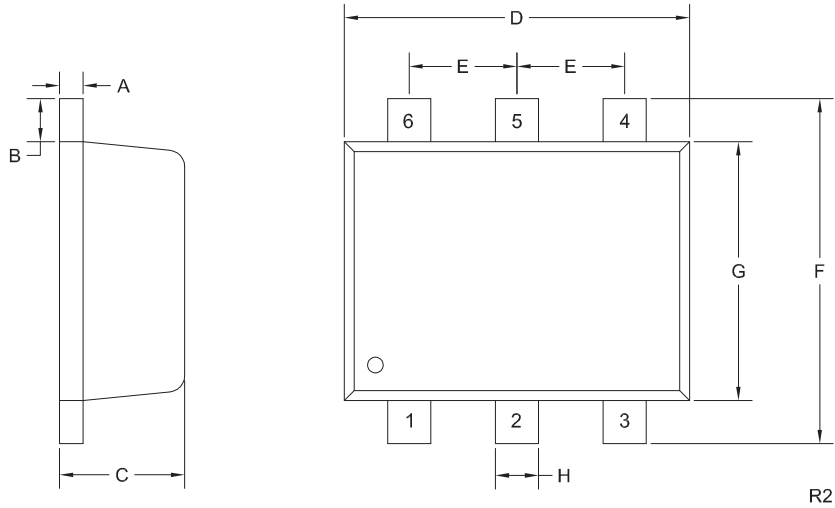
Notes: (1) Ceramic or aluminum core PC Board with copper mounting pad area of  $4.0\text{mm}^2$   
 (2) FR-4 Epoxy PC Board with copper mounting pad area of  $4.0\text{mm}^2$   
 (3) FR-4 Epoxy PC Board with copper mounting pad area of  $1.4\text{mm}^2$

R6 (8-June 2015)

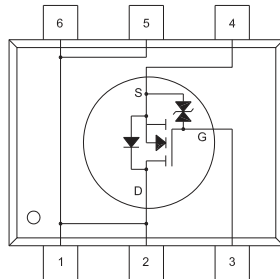
**CMLDM7120G**  
**SURFACE MOUNT SILICON**  
**N-CHANNEL**  
**ENHANCEMENT-MODE**  
**MOSFET**



**SOT-563 CASE - MECHANICAL OUTLINE**



**PIN CONFIGURATION**



**LEAD CODE:**

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

**MARKING CODE: C7G**

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	0.059	0.067	1.50	1.70
G	0.043	0.051	1.10	1.30
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R2)

R6 (8-June 2015)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

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