

**CMLDM7003TG**  
**SURFACE MOUNT SILICON**  
**DUAL N-CHANNEL**  
**ENHANCEMENT-MODE**  
**MOSFET**



www.centrasemi.com



**SOT-563 CASE**

• Device is **Halogen Free** by design

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMLDM7003TG is a dual N-Channel enhancement-mode MOSFET, manufactured by the N-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications. This device offers low  $r_{DS(ON)}$ , low  $V_{GS(th)}$ , and ESD protection up to 2kV.

**MARKING CODE: CTG**

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

Drain-Source Voltage
Drain-Gate Voltage
Gate-Source Voltage
Continuous Drain Current
Maximum Pulsed Drain Current
Power Dissipation (Note 1)
Power Dissipation (Note 2)
Power Dissipation (Note 3)
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL		UNITS
$V_{DS}$	50	V
$V_{DG}$	50	V
$V_{GS}$	12	V
$I_D$	280	mA
$I_{DM}$	1.5	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 PER TRANSISTOR:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{GSSF}, I_{GSSR}$	$V_{GS}=5.0\text{V}$			50	nA
$I_{GSSF}, I_{GSSR}$	$V_{GS}=10\text{V}$			0.5	$\mu\text{A}$
$I_{GSSF}, I_{GSSR}$	$V_{GS}=12\text{V}$			1.0	$\mu\text{A}$
$I_{DSS}$	$V_{DS}=50\text{V}, V_{GS}=0$			50	nA
$BV_{DSS}$	$V_{GS}=0, I_D=10\mu\text{A}$	50			V
$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	0.7		1.2	V
$V_{SD}$	$V_{GS}=0, I_S=115\text{mA}$			1.4	V
$r_{DS(ON)}$	$V_{GS}=1.8\text{V}, I_D=50\text{mA}$		1.6	2.3	$\Omega$
$r_{DS(ON)}$	$V_{GS}=2.5\text{V}, I_D=50\text{mA}$		1.3	1.9	$\Omega$
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}$		1.1	1.5	$\Omega$
gFS	$V_{DS}=10\text{V}, I_D=200\text{mA}$	200			mS
$C_{rss}$	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$			5.0	pF
$C_{iss}$	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$			60	pF
$C_{oss}$	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$			25	pF
$Q_g(\text{tot})$	$V_{DS}=25\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$		0.764		nC
$Q_{gs}$	$V_{DS}=25\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$		0.148		nC
$Q_{gd}$	$V_{DS}=25\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$		0.156		nC

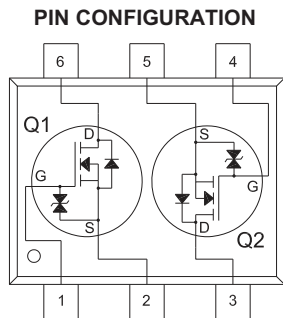
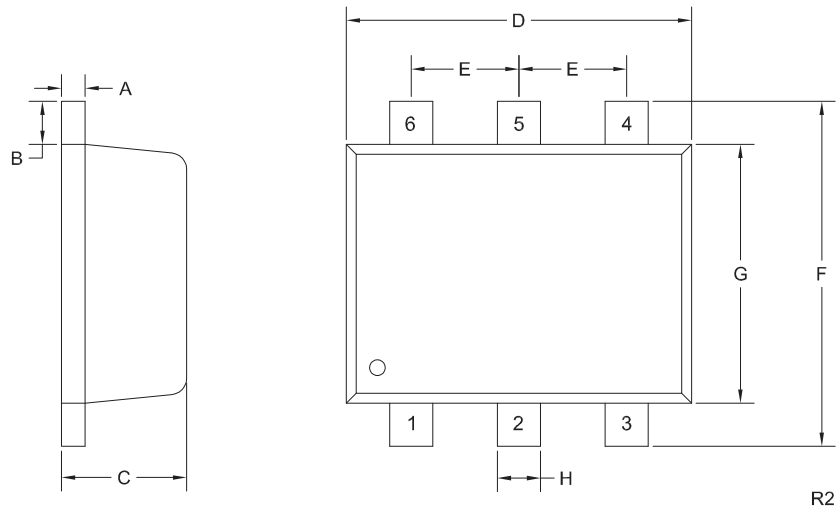
Notes: (1) Ceramic or aluminum core PC Board with copper mounting pad area of 4.0mm<sup>2</sup>  
(2) FR-4 Epoxy PC Board with copper mounting pad area of 4.0mm<sup>2</sup>  
(3) FR-4 Epoxy PC Board with copper mounting pad area of 1.4mm<sup>2</sup>

R6 (28-September 2021)

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SOT-563 CASE - MECHANICAL OUTLINE



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)

**LEAD CODE:**

- 1) Gate Q1
- 2) Source Q1
- 3) Drain Q2
- 4) Gate Q2
- 5) Source Q2
- 6) Drain Q1

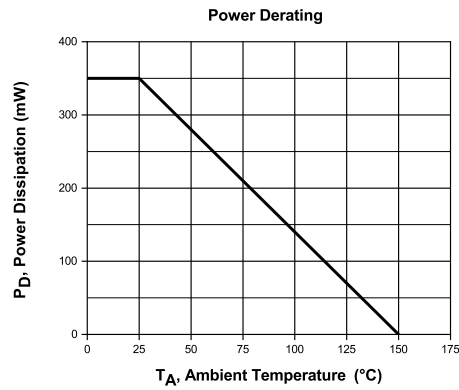
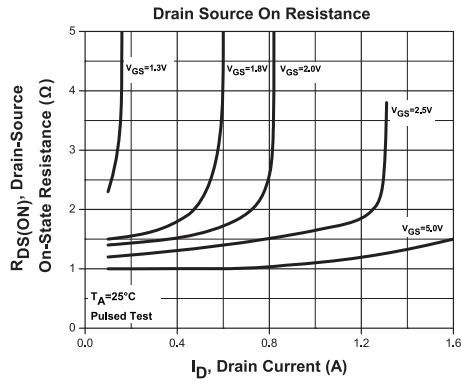
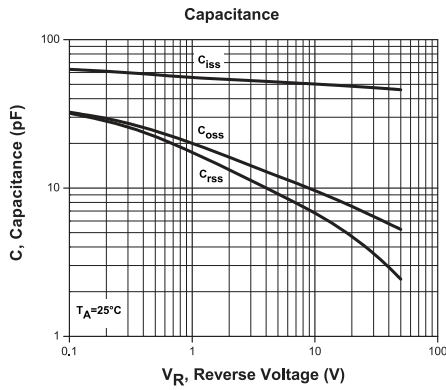
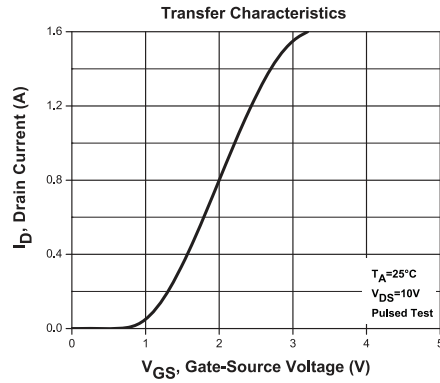
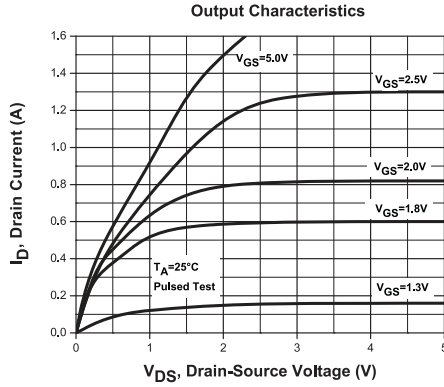
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**TYPICAL ELECTRICAL CHARACTERISTICS**



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## 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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