

CMLDM7003
CMLDM7003G*
CMLDM7003J

**SURFACE MOUNT SILICON
DUAL N-CHANNEL
ENHANCEMENT-MODE
MOSFETS**



SOT-563 CASE

* Device is *Halogen Free* by design



www.centrasemi.com

DESCRIPTION:

These CENTRAL SEMICONDUCTOR devices are dual N-Channel enhancement-mode MOSFETs, manufactured by the N-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications. The CMLDM7003 utilizes the USA pinout configuration, while the CMLDM7003J utilizes the Japanese pinout configuration. These devices offer low $r_{DS(ON)}$ and ESD protection up to 2kV.

**MARKING CODES: CMLDM7003: C30
CMLDM7003G*: C3G
CMLDM7003J: C3J**

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 | $^\circ\text{C}$ |
| θ_{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} | $V_{GS}=5.0\text{V}$ | | | 100 | nA |
| I_{GSSF}, I_{GSSR} | $V_{GS}=10\text{V}$ | | | 2.0 | μA |
| I_{GSSF}, I_{GSSR} | $V_{GS}=12\text{V}$ | | | 2.0 | μA |
| 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 |
| $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=250\mu\text{A}$ | 0.49 | | 1.0 | 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 | 3.0 | Ω |
| $r_{DS(ON)}$ | $V_{GS}=2.5\text{V}, I_D=50\text{mA}$ | | 1.3 | 2.5 | Ω |
| $r_{DS(ON)}$ | $V_{GS}=5.0\text{V}, I_D=50\text{mA}$ | | 1.1 | 2.0 | Ω |
| g_{FS} | $V_{DS}=10\text{V}, I_D=200\text{mA}$ | 200 | | | mS |
| C_{rss} | $V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$ | | | 5.0 | pF |
| C_{iss} | $V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$ | | | 50 | 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 4.0mm²
(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

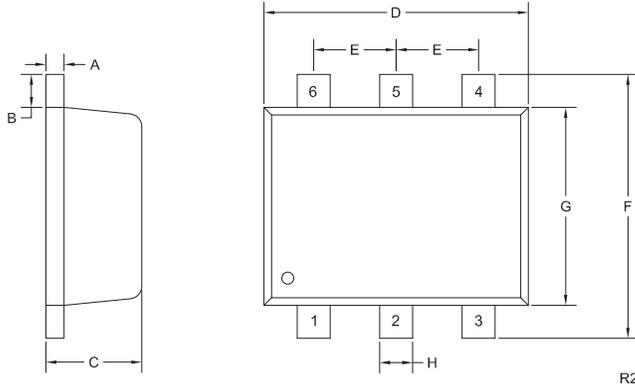
R9 (8-June 2015)

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SOT-563 CASE - MECHANICAL OUTLINE

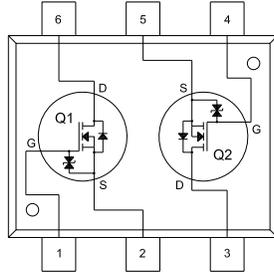


| SYMBOL | INCHES | | MILLIMETERS | |
|--------|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.0027 | 0.007 | 0.07 | 0.18 |
| B | 0.008 | | 0.20 | |
| C | 0.017 | 0.024 | 0.45 | 0.60 |
| D | 0.059 | 0.067 | 1.50 | 1.70 |
| E | 0.020 | | 0.50 | |
| F | 0.059 | 0.067 | 1.50 | 1.70 |
| G | 0.043 | 0.051 | 1.10 | 1.30 |
| H | 0.006 | 0.012 | 0.15 | 0.30 |

SOT-563 (REV: R2)

PIN CONFIGURATIONS

**CMLDM7003 (USA Pinout)
 CMLDM7003G***



LEAD CODE:

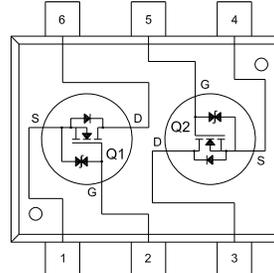
- 1) Gate Q1
- 2) Source Q1
- 3) Drain Q2
- 4) Gate Q2
- 5) Source Q2
- 6) Drain Q1

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CMLDM7003J (Japanese Pinout)



LEAD CODE:

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

MARKING CODE: C3J

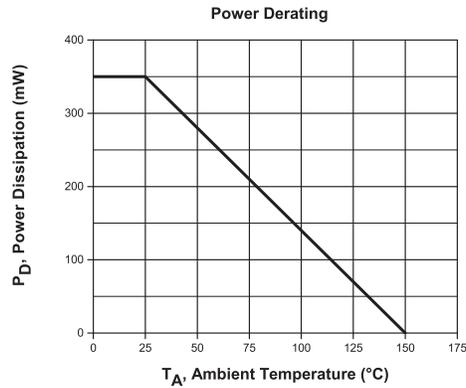
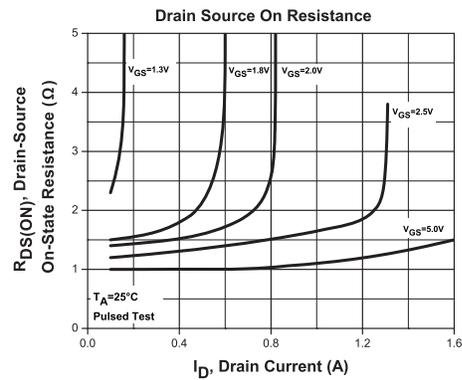
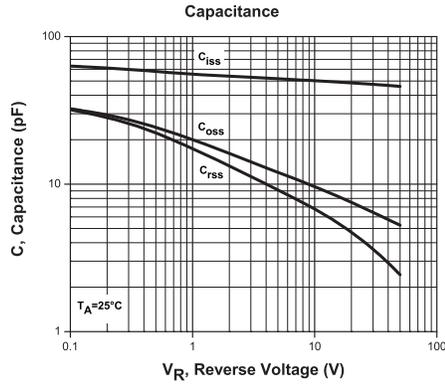
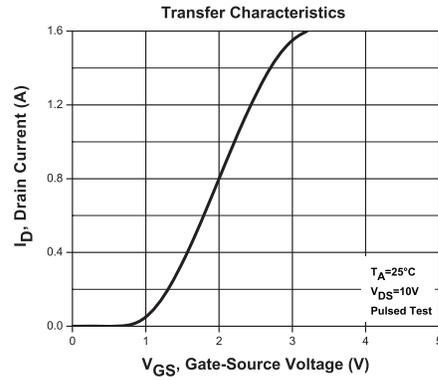
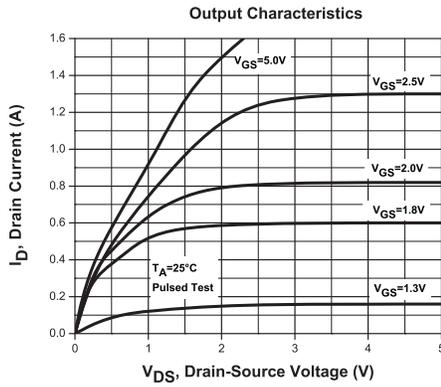
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TYPICAL ELECTRICAL CHARACTERISTICS



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SERVICES

- Bonded Inventory
- Custom Electrical Screening
- Custom Electrical Characteristic Curves
- SPICE Models
- Custom Packaging
- Package Base Options
- Custom Device Development/ Multi Discrete Modules (MDM™)
- Bare Die Available for Hybrid Applications

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