**CMLDM7003**
**CMLDM7003G***
**CMLDM7003J**

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


**SOT-563 CASE**

* Device is ***Halogen Free*** by design

Central Semiconductor Corp.

www.centralsemi.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°C) | **SYMBOL** | | **UNITS** |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 50 | V |
| Drain-Gate Voltage | $V_{DG}$ | 50 | V |
| Gate-Source Voltage | $V_{GS}$ | 12 | V |
| Continuous Drain Current | $I_D$ | 280 | mA |
| Maximum Pulsed Drain Current | $I_{DM}$ | 1.5 | A |
| Power Dissipation (Note 1) | $P_D$ | 350 | mW |
| Power Dissipation (Note 2) | $P_D$ | 300 | mW |
| Power Dissipation (Note 3) | $P_D$ | 150 | mW |
| Operating and Storage Junction Temperature | $T_J$, $T_{stg}$ | -65 to +150 | °C |
| Thermal Resistance | $\Theta_{JA}$ | 357 | °C/W |

**ELECTRICAL CHARACTERISTICS PER TRANSISTOR:** ($T_A$=25°C unless otherwise noted)

| **SYMBOL** | **TEST CONDITIONS** | **MIN** | **TYP** | **MAX** | **UNITS** |
|---|---|---|---|---|---|
| $I_{GSSF}$, $I_{GSSR}$ | $V_{GS}$=5.0V | | | 100 | nA |
| $I_{GSSF}$, $I_{GSSR}$ | $V_{GS}$=10V | | | 2.0 | μA |
| $I_{GSSF}$, $I_{GSSR}$ | $V_{GS}$=12V | | | 2.0 | μA |
| $I_{DSS}$ | $V_{DS}$=50V, $V_{GS}$=0 | | | 50 | nA |
| $BV_{DSS}$ | $V_{GS}$=0, $I_D$=10μA | 50 | | | V |
| $V_{GS(th)}$ | $V_{DS}$=$V_{GS}$, $I_D$=250μA | 0.49 | | 1.0 | V |
| $V_{SD}$ | $V_{GS}$=0, $I_S$=115mA | | | 1.4 | V |
| $r_{DS(ON)}$ | $V_{GS}$=1.8V, $I_D$=50mA | | 1.6 | 3.0 | Ω |
| $r_{DS(ON)}$ | $V_{GS}$=2.5V, $I_D$=50mA | | 1.3 | 2.5 | Ω |
| $r_{DS(ON)}$ | $V_{GS}$=5.0V, $I_D$=50mA | | 1.1 | 2.0 | Ω |
| $g_{FS}$ | $V_{DS}$=10V, $I_D$=200mA | 200 | | | mS |
| $C_{rss}$ | $V_{DS}$=25V, $V_{GS}$=0, f=1.0MHz | | | 5.0 | pF |
| $C_{iss}$ | $V_{DS}$=25V, $V_{GS}$=0, f=1.0MHz | | | 60 | pF |
| $C_{oss}$ | $V_{DS}$=25V, $V_{GS}$=0, f=1.0MHz | | | 25 | pF |
| $Q_{g(tot)}$ | $V_{DS}$=25V, $V_{GS}$=4.5V, $I_D$=100mA | | 0.764 | | nC |
| $Q_{gs}$ | $V_{DS}$=25V, $V_{GS}$=4.5V, $I_D$=100mA | | 0.148 | | nC |
| $Q_{gd}$ | $V_{DS}$=25V, $V_{GS}$=4.5V, $I_D$=100mA | | 0.156 | | nC |

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

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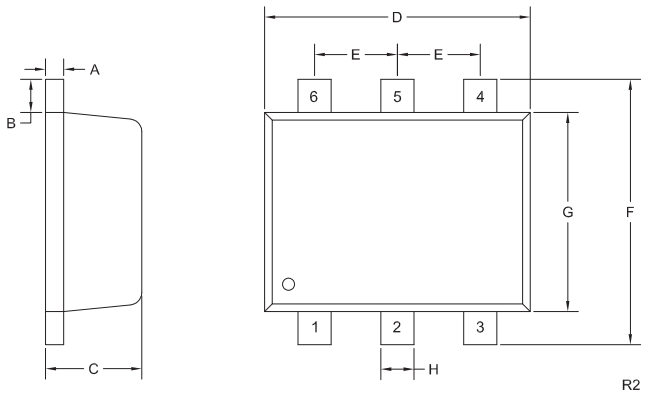
## SOT-563 CASE - MECHANICAL OUTLINE

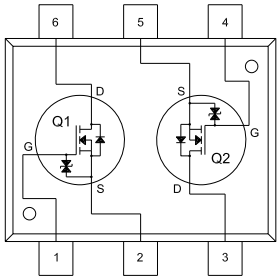



| DIMENSIONS | | | | |
|---|---|---|---|---|
| | INCHES | | MILLIMETERS | |
| SYMBOL | MIN | MAX | MIN | MAX |
| A | 0.0027 | 0.007 | 0.07 | 0.18 |
| B | 0.008 | | 0.20 | |
| C | 0.017 | 0.024 | 0.45 | 0.60 |
| D | 0.059 | 0.067 | 1.50 | 1.70 |
| E | 0.020 | | 0.50 | |
| F | 0.059 | 0.067 | 1.50 | 1.70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

SOT-563 (REV: R2)

## PIN CONFIGURATIONS

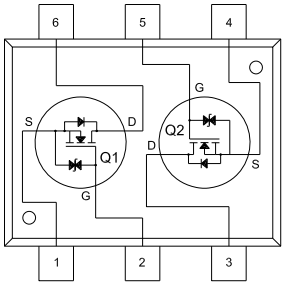
**CMLDM7003** (USA Pinout)
**CMLDM7003G***




**LEAD CODE:**
1) Gate Q1
2) Source Q1
3) Drain Q2
4) Gate Q2
5) Source Q2
6) Drain Q1

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

**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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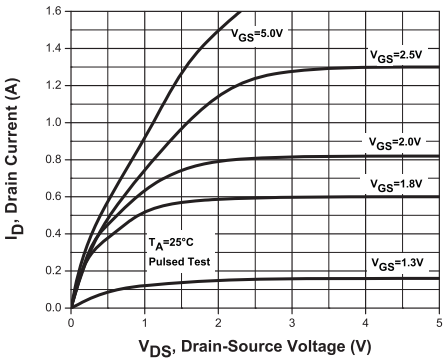
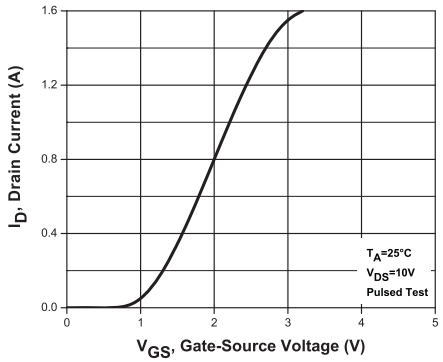
## TYPICAL ELECTRICAL CHARACTERISTICS

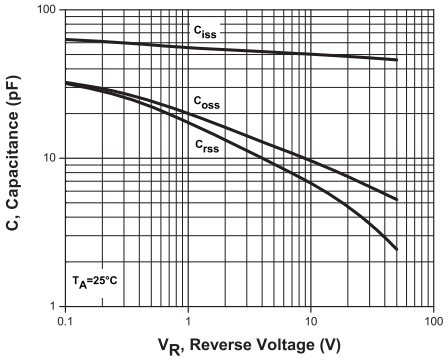
Output Characteristics



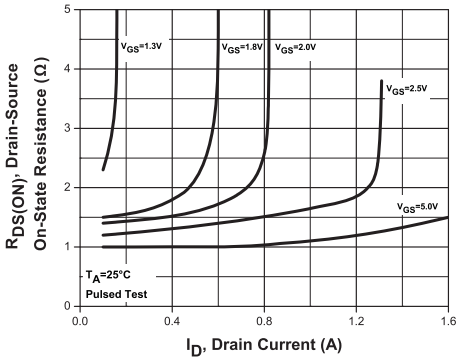

Transfer Characteristics



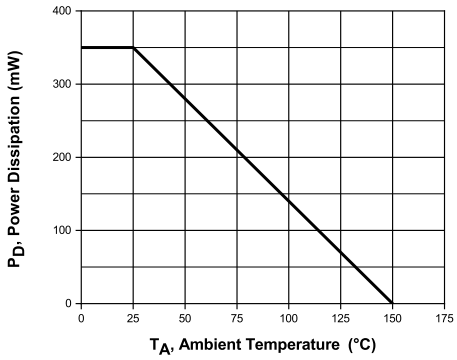

Capacitance




Drain Source On Resistance




Power Derating

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## OUTSTANDING SUPPORT AND SUPERIOR SERVICES

### 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

### DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2nd 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

### 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).

### CONTACT US

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