

**CMPDM7003**  
**SURFACE MOUNT**  
**N-CHANNEL**  
**ENHANCEMENT-MODE**  
**SILICON MOSFET**



[www.centrasemi.com](http://www.centrasemi.com)



**SOT-23 CASE**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMPDM7003 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 ESD protection up to 2kV.

**MARKING CODE: C7003**

**FEATURES:**

- ESD protection up to 2kV
- Low  $r_{DS(ON)}$
- Low  $V_{DS(ON)}$
- Low threshold voltage
- Fast switching
- Logic level compatibility

**APPLICATIONS:**

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

**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                          |
| Operating and Storage Junction Temperature |
| Thermal Resistance                         |

**SYMBOL**

|                |             |
|----------------|-------------|
| $V_{DS}$       | 50          |
| $V_{DG}$       | 50          |
| $V_{GS}$       | 12          |
| $I_D$          | 280         |
| $I_{DM}$       | 1.5         |
| $P_D$          | 350         |
| $T_J, T_{stg}$ | -65 to +150 |
| $\Theta_{JA}$  | 357         |

**UNITS**

|                    |
|--------------------|
| V                  |
| V                  |
| V                  |
| mA                 |
| A                  |
| mW                 |
| $^\circ\text{C}$   |
| $^\circ\text{C/W}$ |

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

| SYMBOL               | TEST CONDITIONS                                | MIN  | TYP | MAX | UNITS         |
|----------------------|--|------|-----|-----|---------------|
| $I_{GSSF}, I_{GSSR}$ | $V_{GS}=5.0\text{V}$                           |      |     | 100 | nA            |
| $I_{GSSF}, I_{GSSR}$ | $V_{GS}=10\text{V}$                            |      |     | 2.0 | $\mu\text{A}$ |
| $I_{GSSF}, I_{GSSR}$ | $V_{GS}=12\text{V}$                            |      |     | 2.0 | $\mu\text{A}$ |
| $I_{DSS}$            | $V_{DS}=50\text{V}, V_{GS}=0$                  |      |     | 50  | nA            |
| $BV_{DSS}$           | $V_{GS}=0, I_D=10\mu\text{A}$                  | 50   |     |     | V             |
| $V_{GS(th)}$         | $V_{DS}=V_{GS}, I_D=250\mu\text{A}$            | 0.49 |     | 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 | $\Omega$      |
| $r_{DS(ON)}$         | $V_{GS}=2.5\text{V}, I_D=50\text{mA}$          |      | 1.3 | 2.5 | $\Omega$      |
| $r_{DS(ON)}$         | $V_{GS}=5.0\text{V}, I_D=50\text{mA}$          |      | 1.1 | 2.0 | $\Omega$      |
| 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            |
| $C_{iss}$            | $V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$ |      |     | 50  | pF            |
| $C_{oss}$            | $V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$ |      |     | 25  | pF            |

R1 (27-January 2010)

**CMPDM7003**  
**SURFACE MOUNT**  
**N-CHANNEL**  
**ENHANCEMENT-MODE**  
**SILICON MOSFET**



**SOT-23 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

- 1) Gate
- 2) Source
- 3) Drain

**MARKING CODE: C7003**

| <b>DIMENSIONS</b> |        |       |             |      |
|-------------------|--------|-------|-------------|------|
| SYMBOL            | INCHES |       | MILLIMETERS |      |
|                   | MIN    | MAX   | MIN         | MAX  |
| A                 | 0.003  | 0.007 | 0.08        | 0.18 |
| B                 | 0.006  | -     | 0.15        | -    |
| C                 | -      | 0.005 | -           | 0.13 |
| D                 | 0.035  | 0.043 | 0.89        | 1.09 |
| E                 | 0.110  | 0.120 | 2.80        | 3.05 |
| F                 | 0.075  |       | 1.90        |      |
| G                 | 0.037  |       | 0.95        |      |
| H                 | 0.047  | 0.055 | 1.19        | 1.40 |
| I                 | 0.083  | 0.098 | 2.10        | 2.49 |
| J                 | 0.014  | 0.020 | 0.35        | 0.50 |

SOT-23 (REV: R3)

R1 (27-January 2010)