

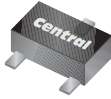
CMUDM7001

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



www.centrasemi.com

ULTRAmulti™



SOT-523 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMUDM7001 is an N-Channel Enhancement-mode Silicon 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 Theshold Voltage.

MARKING CODE: C7A

FEATURES:

- Power Dissipation 250mW
- Low $r_{DS(ON)}$
- Low Threshold Voltage
- Logic Level Compatible
- Small, SOT-523 Surface Mount Package
- Complementary Device: CMUDM8001

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) |
| Continuous Drain Current |
| Power Dissipation |
| Operating and Storage Junction Temperature |

SYMBOL

| | |
|----------------|-------------|
| V_{DS} | 20 |
| V_{GS} | 10 |
| I_D | 100 |
| I_D | 200 |
| P_D | 250 |
| T_J, T_{stg} | -65 to +150 |

UNITS

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

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

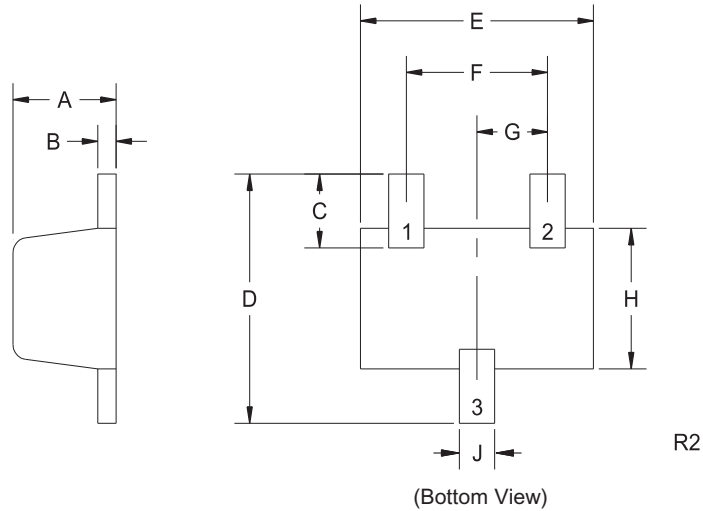
| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|----------------------|---|-----|-------|-----|---------------|
| I_{GSSF}, I_{GSSR} | $V_{GS}=10\text{V}, V_{DS}=0$ | | | 1.0 | μA |
| I_{DSS} | $V_{DS}=20\text{V}, V_{GS}=0$ | | | 1.0 | μA |
| BV_{DSS} | $V_{GS}=0, I_D=100\mu\text{A}$ | 20 | | | V |
| $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=250\mu\text{A}$ | 0.6 | | 0.9 | V |
| $r_{DS(ON)}$ | $V_{GS}=4.0\text{V}, I_D=10\text{mA}$ | | 0.9 | 3.0 | Ω |
| $r_{DS(ON)}$ | $V_{GS}=2.5\text{V}, I_D=10\text{mA}$ | | 1.3 | 4.0 | Ω |
| $r_{DS(ON)}$ | $V_{GS}=1.5\text{V}, I_D=1.0\text{mA}$ | | | 15 | Ω |
| $Q_g(\text{tot})$ | $V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$ | | 0.566 | | nC |
| Q_{gs} | $V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$ | | 0.16 | | nC |
| Q_{gd} | $V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$ | | 0.08 | | nC |
| g_{FS} | $V_{DS}=10\text{V}, I_D=100\text{mA}$ | 100 | | | μS |
| C_{rss} | $V_{DS}=3.0\text{V}, V_{GS}=0, f=1.0\text{MHz}$ | | 4.0 | | pF |
| C_{iss} | $V_{DS}=3.0\text{V}, V_{GS}=0, f=1.0\text{MHz}$ | | 9.0 | | pF |
| C_{oss} | $V_{DS}=3.0\text{V}, V_{GS}=0, f=1.0\text{MHz}$ | | 9.5 | | pF |
| t_{on} | $V_{DD}=3.0\text{V}, V_{GS}=2.5\text{V}, I_D=10\text{mA}$ | | 50 | | ns |
| t_{off} | $V_{DD}=3.0\text{V}, V_{GS}=2.5\text{V}, I_D=10\text{mA}$ | | 75 | | ns |

R3 (22-August 2011)

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SOT-523 CASE - MECHANICAL OUTLINE



LEAD CODE:

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

MARKING CODE: C7A

| SYMBOL | DIMENSIONS | | | |
|--------|------------|-------|-------------|------|
| | INCHES | | MILLIMETERS | |
| | MIN | MAX | MIN | MAX |
| A | 0.023 | 0.031 | 0.58 | 0.78 |
| B | 0.002 | 0.008 | 0.04 | 0.20 |
| C | 0.013 | 0.021 | 0.34 | 0.54 |
| D | 0.059 | 0.067 | 1.50 | 1.70 |
| E | 0.059 | 0.067 | 1.50 | 1.70 |
| F | 0.035 | 0.043 | 0.90 | 1.10 |
| G | 0.020 | | 0.50 | |
| H | 0.031 | 0.039 | 0.78 | 0.98 |
| J | 0.010 | 0.014 | 0.25 | 0.35 |

SOT-523 (REV: R2)

R3 (22-August 2011)

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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