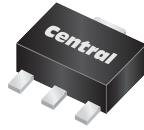


CXDM1002N
SURFACE MOUNT SILICON
N-CHANNEL
ENHANCEMENT-MODE
MOSFET



SOT-89 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXDM1002N is a high voltage silicon N-Channel enhancement-mode MOSFET designed for high speed pulsed amplifier and driver applications. This MOSFET offers high voltage, low $r_{DS(ON)}$, low threshold voltage, and low leakage current.

MARKING: FULL PART NUMBER

FEATURES:

- Low $r_{DS(ON)}$ (140m Ω TYP @ $V_{GS}=4.5V$)
- High voltage ($V_{DS}=100V$)
- Logic level compatibility
- 2kV ESD protection

APPLICATIONS:

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

MAXIMUM RATINGS: ($T_A=25^\circ C$)

| | | | |
|---|----------------|-------------|--------------|
| Drain-Source Voltage | V_{DS} | 100 | V |
| Gate-Source Voltage | V_{GS} | 20 | V |
| Continuous Drain Current (Steady State) | I_D | 2.0 | A |
| Maximum Pulsed Drain Current, $t_p=10\mu s$ | I_{DM} | 7.0 | A |
| Power Dissipation | P_D | 1.2 | W |
| Operating and Storage Junction Temperature | T_J, T_{stg} | -55 to +150 | $^\circ C$ |
| Thermal Resistance | θ_{JA} | 104 | $^\circ C/W$ |

SYMBOL

| SYMBOL | | | UNITS |
|----------------|-------------|--|--------------|
| V_{DS} | 100 | | V |
| V_{GS} | 20 | | V |
| I_D | 2.0 | | A |
| I_{DM} | 7.0 | | A |
| P_D | 1.2 | | W |
| T_J, T_{stg} | -55 to +150 | | $^\circ C$ |
| θ_{JA} | 104 | | $^\circ C/W$ |

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

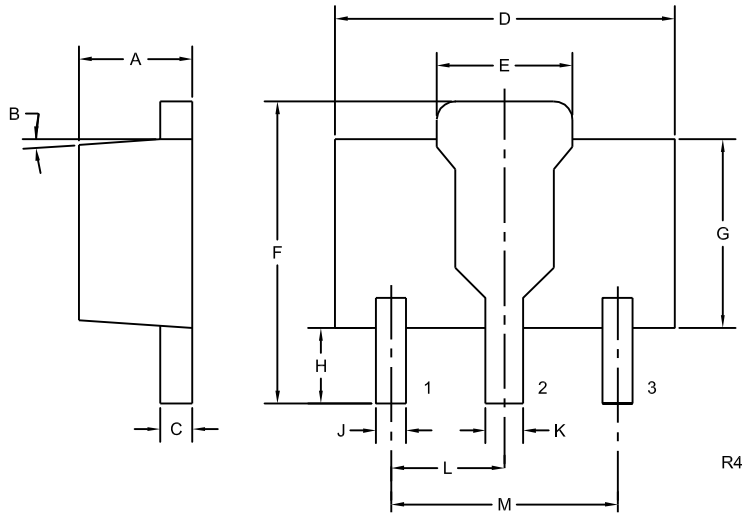
| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|----------------------|-------------------------------------|-----|-----|-----|------------|
| I_{GSSF}, I_{GSSR} | $V_{GS}=20V, V_{DS}=0$ | | | 15 | μA |
| I_{DSS} | $V_{DS}=100V, V_{GS}=0$ | | | 100 | nA |
| BV_{DSS} | $V_{GS}=0, I_D=250\mu A$ | 100 | | | V |
| $V_{GS(th)}$ | $V_{GS}=V_{DS}, I_D=250\mu A$ | 1.5 | 2.1 | 2.5 | V |
| V_{SD} | $V_{GS}=0, I_S=1.0A$ | | | 1.1 | V |
| $r_{DS(ON)}$ | $V_{GS}=10V, I_D=2.0A$ | | 125 | 300 | m Ω |
| $r_{DS(ON)}$ | $V_{GS}=4.5V, I_D=1.0A$ | | 140 | 350 | m Ω |
| C_{rss} | $V_{DS}=25V, V_{GS}=0, f=1.0MHz$ | | 48 | | pF |
| C_{iss} | $V_{DS}=25V, V_{GS}=0, f=1.0MHz$ | | 550 | | pF |
| C_{oss} | $V_{DS}=25V, V_{GS}=0, f=1.0MHz$ | | 45 | | pF |
| $Q_g(tot)$ | $V_{DS}=80V, V_{GS}=5.0V, I_D=2.0A$ | | 6.0 | | nC |
| Q_{gs} | $V_{DS}=80V, V_{GS}=5.0V, I_D=2.0A$ | | 1.2 | | nC |
| Q_{gd} | $V_{DS}=80V, V_{GS}=5.0V, I_D=2.0A$ | | 3.0 | | nC |
| t_{on} | $V_{DD}=50V, V_{GS}=5.0V, I_D=3.5A$ | | 32 | | ns |
| t_{off} | $R_G=4.7\Omega$ | | 50 | | ns |

R2 (28-November 2017)

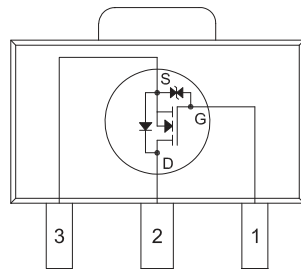
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SOT-89 CASE - MECHANICAL OUTLINE



PIN CONFIGURATION



(Top View)

Tab is common to pin 2

LEAD CODE:

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

MARKING: FULL PART NUMBER

| SYMBOL | INCHES | | MILLIMETERS | |
|--------|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.055 | 0.067 | 1.40 | 1.70 |
| B | 4° | | 4° | |
| C | 0.014 | 0.018 | 0.35 | 0.46 |
| D | 0.173 | 0.185 | 4.40 | 4.70 |
| E | 0.064 | 0.074 | 1.62 | 1.87 |
| F | 0.146 | 0.177 | 3.70 | 4.50 |
| G | 0.090 | 0.106 | 2.29 | 2.70 |
| H | 0.028 | 0.051 | 0.70 | 1.30 |
| J | 0.014 | 0.019 | 0.36 | 0.48 |
| K | 0.017 | 0.023 | 0.44 | 0.58 |
| L | 0.059 | | 1.50 | |
| M | 0.118 | | 3.00 | |

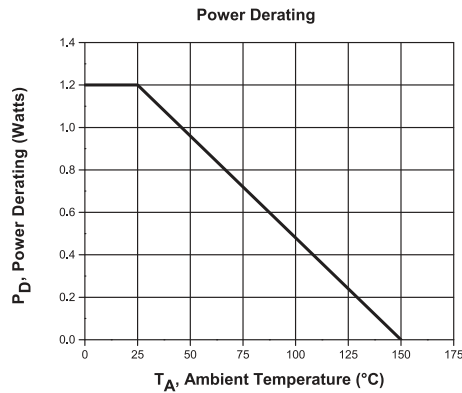
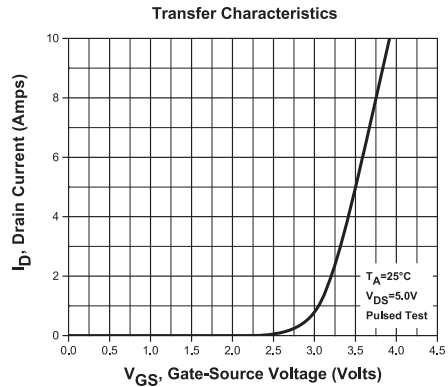
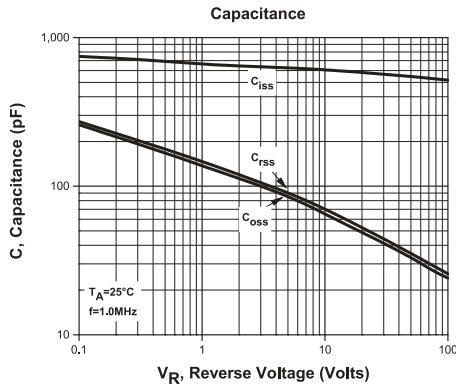
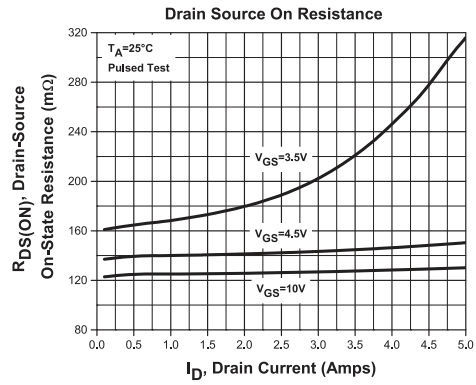
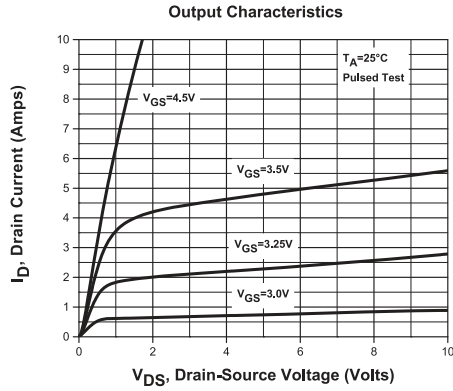
SOT-89 (REV: R4)

R2 (28-November 2017)

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MOSFET



TYPICAL ELECTRICAL CHARACTERISTICS



R2 (28-November 2017)

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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