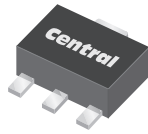


**CXDM1002N**  
**SURFACE MOUNT SILICON**  
**N-CHANNEL**  
**ENHANCEMENT-MODE**  
**MOSFET**



**SOT-89 CASE**



[www.centrasemi.com](http://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 $\Omega$  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                          | $\theta_{JA}$  | 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 | $^\circ C$   |
| $\theta_{JA}$  | 104         | $^\circ C/W$ |

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

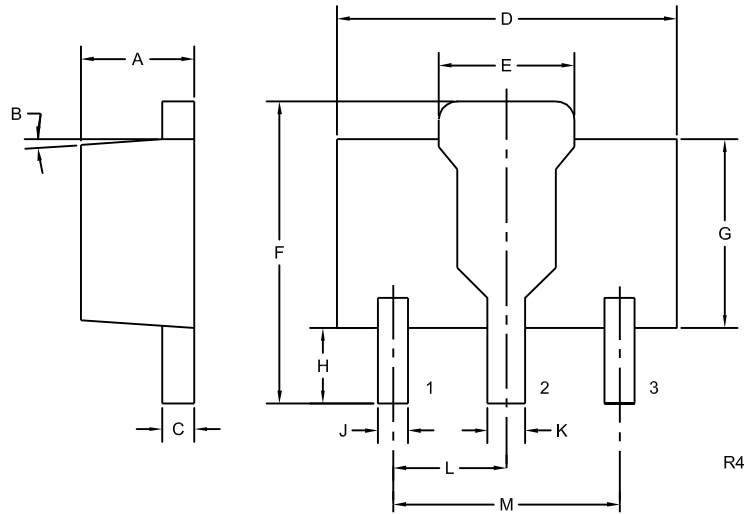
| SYMBOL               | TEST CONDITIONS                     | MIN | TYP | MAX | UNITS      |
|----------------------|-------------------------------------|-----|-----|-----|------------|
| $I_{GSSF}, I_{GSSR}$ | $V_{GS}=20V, V_{DS}=0$              |     |     | 100 | nA         |
| $I_{DSS}$            | $V_{DS}=100V, V_{GS}=0$             |     |     | 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 $\Omega$ |
| $r_{DS(ON)}$         | $V_{GS}=4.5V, I_D=1.0A$             |     | 140 | 350 | m $\Omega$ |
| $C_{rss}$            | $V_{DS}=25V, V_{GS}=0, f=1.0MHz$    |     | 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         |

R1 (19-March 2013)

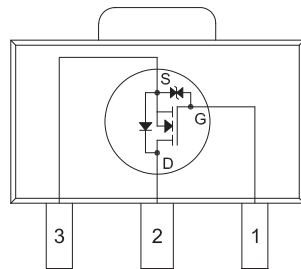
**CXDM1002N**  
**SURFACE MOUNT SILICON**  
**N-CHANNEL**  
**ENHANCEMENT-MODE**  
**MOSFET**



**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        |      |

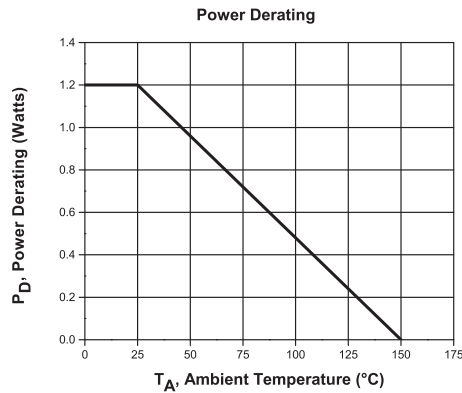
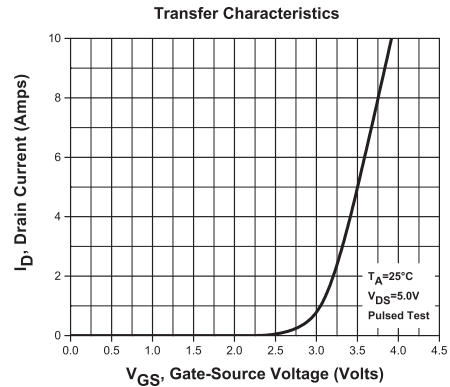
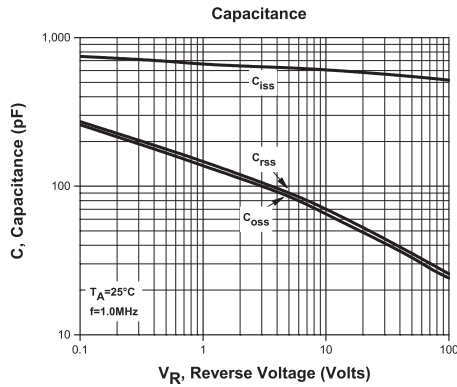
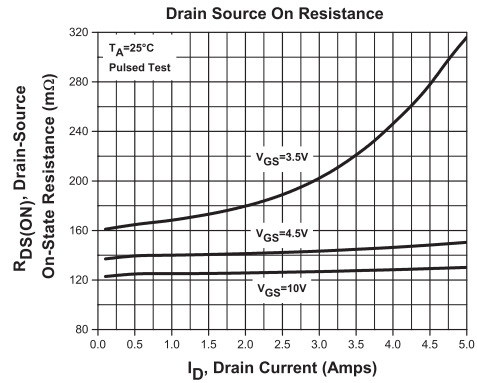
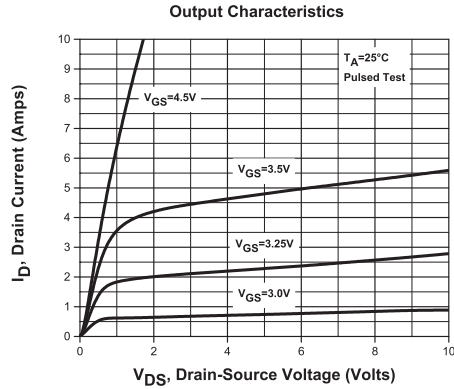
SOT-89 (REV: R4)

R1 (19-March 2013)

**CXDM1002N**  
**SURFACE MOUNT SILICON**  
**N-CHANNEL**  
**ENHANCEMENT-MODE**  
**MOSFET**



**TYPICAL ELECTRICAL CHARACTERISTICS**



R1 (19-March 2013)

## 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 (2<sup>nd</sup> 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

---

### CONTACT US

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centalsemi.com](http://www.centalsemi.com)

**Worldwide Field Representatives:**  
[www.centalsemi.com/wwreps](http://www.centalsemi.com/wwreps)

**Worldwide Distributors:**  
[www.centalsemi.com/wwdistributors](http://www.centalsemi.com/wwdistributors)

---

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: [www.centalsemi.com/terms](http://www.centalsemi.com/terms)