

CEDM8001VL

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



www.centrasemi.com



Top View Bottom View

SOT-883VL CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CEDM8001VL is a P-Channel Enhancement-mode MOSFET packaged in the very low profile SOT-883VL case. The device is designed for space constrained high speed amplifier and driver applications where package height is a critical design element. This MOSFET offers low $r_{DS(ON)}$ and low gate charge.

MARKING CODE: 8

COMPLEMENTARY N-CHANNEL: CEDM7001VL

FEATURES:

- 100mW Power Dissipation
- 0.32mm very low package profile
- Low $r_{DS(ON)}$
- Low threshold voltage
- Logic level compatible
- Small leadless surface mount package

APPLICATIONS:

- Load/Power switches
- DC-DC converters
- 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 100
 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)

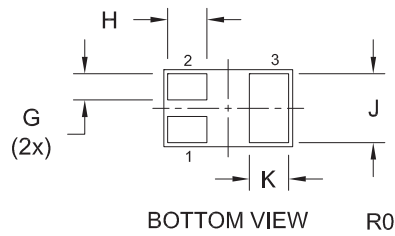
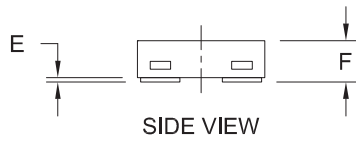
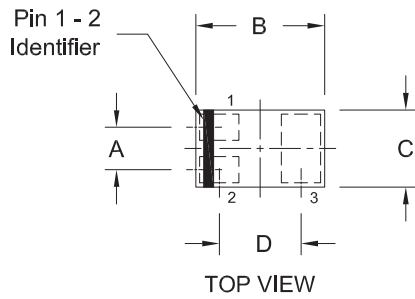
| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|----------------------|---|-----|-------|-----|---------------|
| I_{GSSF}, I_{GSSR} | $V_{GS}=10\text{V}, V_{DS}=0$ | | | 1.0 | μA |
| I_{DSS} | $V_{DS}=20\text{V}, V_{GS}=0$ | | | 1.0 | μA |
| BV_{DSS} | $V_{GS}=0, I_D=100\mu\text{A}$ | 20 | | | V |
| $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=250\mu\text{A}$ | 0.6 | | 1.1 | V |
| $r_{DS(ON)}$ | $V_{GS}=4.0\text{V}, I_D=10\text{mA}$ | | 1.9 | 8.0 | Ω |
| $r_{DS(ON)}$ | $V_{GS}=2.5\text{V}, I_D=10\text{mA}$ | | 2.4 | 12 | Ω |
| $r_{DS(ON)}$ | $V_{GS}=1.5\text{V}, I_D=1.0\text{mA}$ | | | 45 | Ω |
| g_{FS} | $V_{DS}=10\text{V}, I_D=100\text{mA}$ | 100 | | | mS |
| C_{rss} | $V_{DS}=3.0\text{V}, V_{GS}=0, f=1.0\text{MHz}$ | | 15 | | pF |
| C_{iss} | $V_{DS}=3.0\text{V}, V_{GS}=0, f=1.0\text{MHz}$ | | 45 | | pF |
| C_{oss} | $V_{DS}=3.0\text{V}, V_{GS}=0, f=1.0\text{MHz}$ | | 15 | | pF |
| $Q_{g(tot)}$ | $V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$ | | 0.658 | | nC |
| Q_{gs} | $V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$ | | 0.158 | | nC |
| Q_{gd} | $V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$ | | 0.181 | | nC |
| t_{on} | $V_{DD}=3.0\text{V}, V_{GS}=2.5\text{V}, I_D=10\text{mA}$ | | 35 | | ns |
| t_{off} | $V_{DD}=3.0\text{V}, V_{GS}=2.5\text{V}, I_D=10\text{mA}$ | | 80 | | ns |

R2 (11-September 2014)

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SOT-883VL CASE - MECHANICAL OUTLINE



| SYMBOL | DIMENSIONS | | | |
|--------|------------|-------|-------------|------|
| | INCHES | | MILLIMETERS | |
| | MIN | MAX | MIN | MAX |
| A | 0.014 | | 0.35 | |
| B | 0.037 | 0.041 | 0.95 | 1.05 |
| C | 0.022 | 0.026 | 0.55 | 0.65 |
| D | 0.026 | | 0.65 | |
| E | 0.000 | 0.002 | 0.00 | 0.05 |
| F | 0.012 | 0.013 | 0.30 | 0.32 |
| G | 0.004 | 0.008 | 0.10 | 0.20 |
| H | 0.008 | 0.012 | 0.20 | 0.30 |
| J | 0.018 | 0.022 | 0.45 | 0.55 |
| K | 0.008 | 0.012 | 0.20 | 0.30 |

SOT-883VL (REV:R0)

LEAD CODE:

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

MARKING CODE: 8

Package Type Options (all dimensions are maximum - in mm)

| Package | Length | Width | Height | P _D (mW) | Central Item Number |
|-----------|--------|-------|--------|---------------------|---------------------|
| SOT-883VL | 1.05 | 0.65 | 0.32 | 100 | CEDM8001VL |
| SOT-883L | 1.05 | 0.65 | 0.40 | 100 | CEDM8001 |
| SOT-953 | 1.05 | 1.05 | 0.50 | 250 | CMNDM8001 |
| SOT-523 | 1.70 | 1.70 | 0.78 | 250 | CMUDM8001 |

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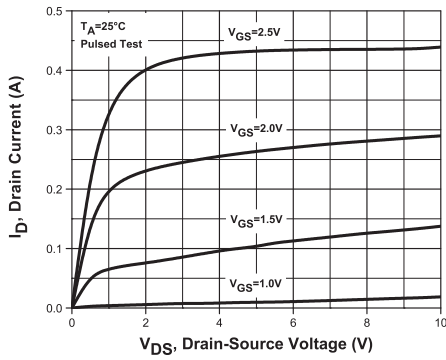
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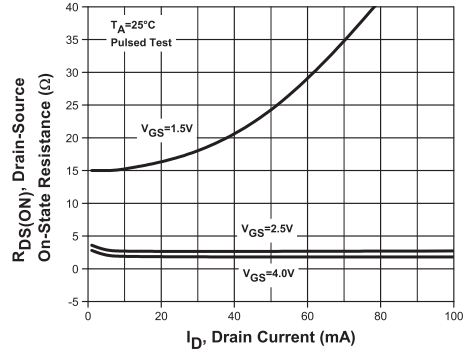


TYPICAL ELECTRICAL CHARACTERISTICS

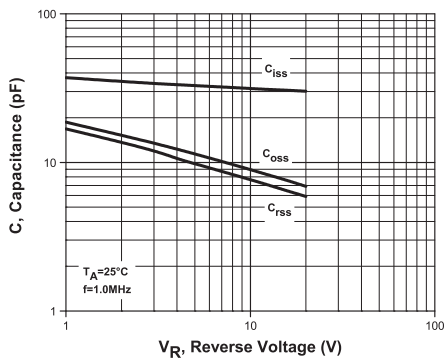
Output Characteristics



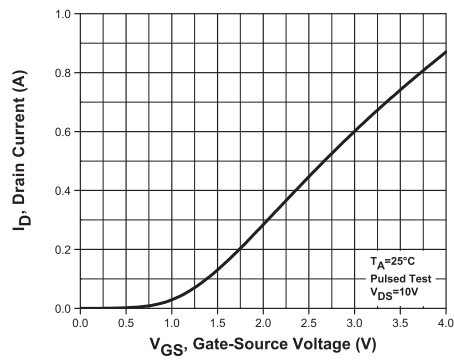
Drain Source On Resistance



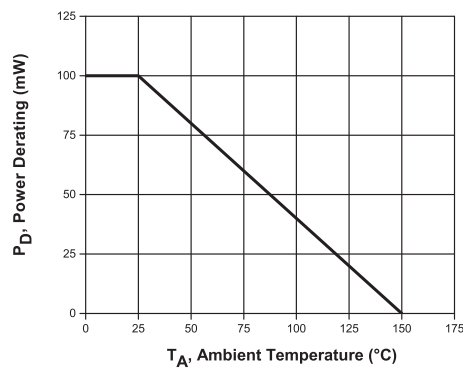
Capacitance



Transfer Characteristics



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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