

CEDM8004VL

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



www.centrasemi.com



Top View Bottom View

SOT-883VL CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CEDM8004VL is an P-Channel Enhancement-mode MOSFET, manufactured by the P-Channel DMOS process, designed for high speed pulsed amplifier and driver applications. This MOSFET offers low $r_{DS(ON)}$ and low threshold voltage.

MARKING CODE: V

COMPLEMENTARY N-CHANNEL: CEDM7004VL

FEATURES:

- ESD protection up to 2kV
- 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
- Power supply converter circuits
- Battery powered portable devices

MAXIMUM RATING: ($T_A=25^\circ\text{C}$)

| |
|--|
| Drain-Source Voltage |
| Gate-Source Voltage |
| Continuous Drain Current |
| Power Dissipation |
| Operating and Storage Junction Temperature |

SYMBOL

| | |
|----------------|-------------|
| V_{DS} | 30 |
| V_{GS} | 8.0 |
| I_D | 450 |
| P_D | 100 |
| T_J, T_{stg} | -65 to +150 |

UNITS

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

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

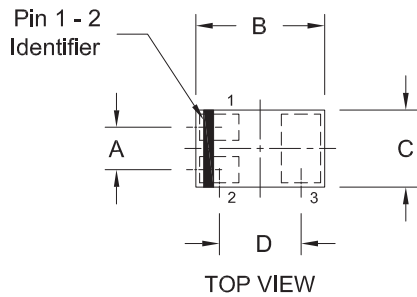
| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|----------------------|--|-----|-------|-----|---------------|
| I_{GSSF}, I_{GSSR} | $V_{GS}=8.0\text{V}, V_{DS}=0$ | | | 3.0 | μA |
| I_{DSS} | $V_{DS}=30\text{V}, V_{GS}=0$ | | | 1.0 | μA |
| BV_{DSS} | $V_{GS}=0, I_D=100\mu\text{A}$ | 30 | | | V |
| $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=250\mu\text{A}$ | 0.5 | | 1.0 | V |
| V_{SD} | $V_{GS}=0, I_S=100\text{mA}$ | | | 1.1 | V |
| $r_{DS(ON)}$ | $V_{GS}=4.5\text{V}, I_D=430\text{mA}$ | | 1.0 | 1.1 | Ω |
| $r_{DS(ON)}$ | $V_{GS}=2.5\text{V}, I_D=200\text{mA}$ | | 1.6 | 2.0 | Ω |
| $r_{DS(ON)}$ | $V_{GS}=1.8\text{V}, I_D=100\text{mA}$ | | 2.6 | 3.3 | Ω |
| g_{FS} | $V_{DS}=10\text{V}, I_D=100\text{mA}$ | 200 | | | mS |
| C_{rSS} | $V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$ | | 8.9 | 10 | pF |
| C_{iSS} | $V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$ | | 45 | 55 | pF |
| C_{OSS} | $V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$ | | 8.5 | 15 | pF |
| $Q_{g(tot)}$ | $V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=1.0\text{A}$ | | 0.88 | | nC |
| Q_{gs} | $V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=1.0\text{A}$ | | 0.35 | | nC |
| Q_{gd} | $V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=1.0\text{A}$ | | 0.128 | | nC |

R3 (21-November 2014)

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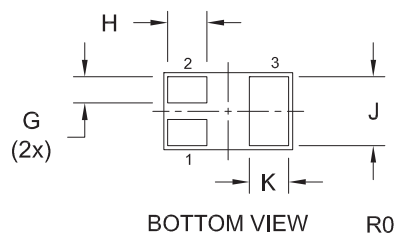
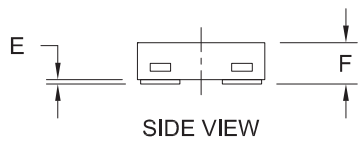


SOT-883VL CASE - MECHANICAL OUTLINE

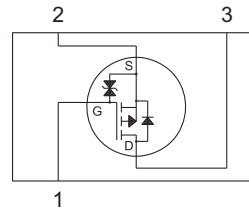


| SYMBOL | DIMENSIONS | | | |
|--------|------------|-------|-------------|------|
| | INCHES | | MILLIMETERS | |
| | MIN | MAX | MIN | MAX |
| A | 0.014 | | 0.35 | |
| B | 0.037 | 0.041 | 0.95 | 1.05 |
| C | 0.022 | 0.026 | 0.55 | 0.65 |
| D | 0.026 | | 0.65 | |
| E | 0.000 | 0.002 | 0.00 | 0.05 |
| 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)



PIN CONFIGURATION
(Bottom View)



LEAD CODE:

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

MARKING CODE: V

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 | CEDM8004VL |
| SOT-883L | 1.05 | 0.65 | 0.40 | 100 | CEDM8004 |
| SOT-523 | 1.70 | 1.70 | 0.78 | 250 | CMUDM8004 |

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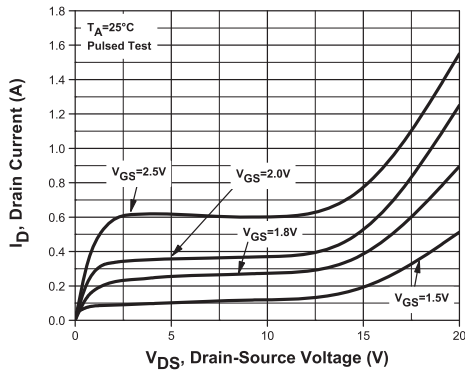
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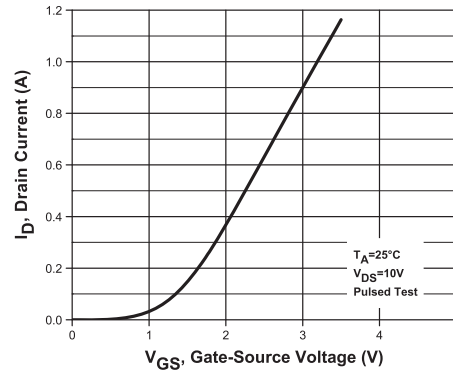


TYPICAL ELECTRICAL CHARACTERISTICS

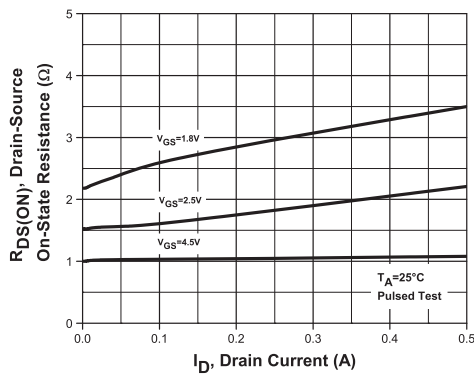
Output Characteristics



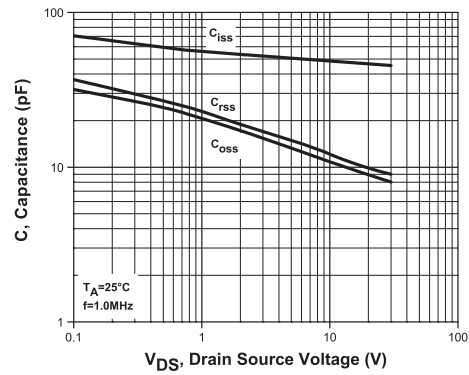
Transfer Characteristics



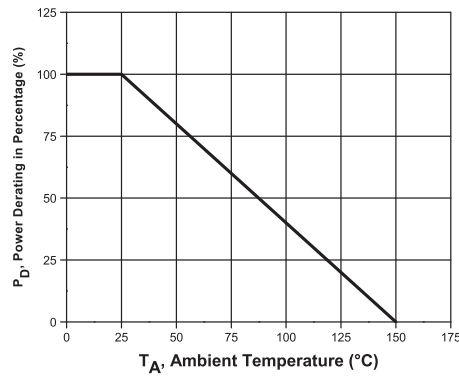
Drain Source On Resistance



Capacitance



Normalized 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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