

CEDM8004

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



Top View Bottom View

**SOT-883L CASE**



[www.centrasemi.com](http://www.centrasemi.com)

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CEDM8004 is an enhancement-mode P-Channel 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: CEDM7004**

**FEATURES:**

- ESD protection up to 2kV
- 0.4mm 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 | $\mu\text{A}$ |
| $I_{DSS}$            | $V_{DS}=30\text{V}, V_{GS}=0$                            |     |       | 1.0 | $\mu\text{A}$ |
| $BV_{DSS}$           | $V_{GS}=0, I_D=100\mu\text{A}$                           | 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 | $\Omega$      |
| $r_{DS(ON)}$         | $V_{GS}=2.5\text{V}, I_D=200\text{mA}$                   |     | 1.6   | 2.0 | $\Omega$      |
| $r_{DS(ON)}$         | $V_{GS}=1.8\text{V}, I_D=100\text{mA}$                   |     | 2.6   | 3.3 | $\Omega$      |
| $g_{FS}$             | $V_{DS}=10\text{V}, I_D=100\text{mA}$                    | 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            |

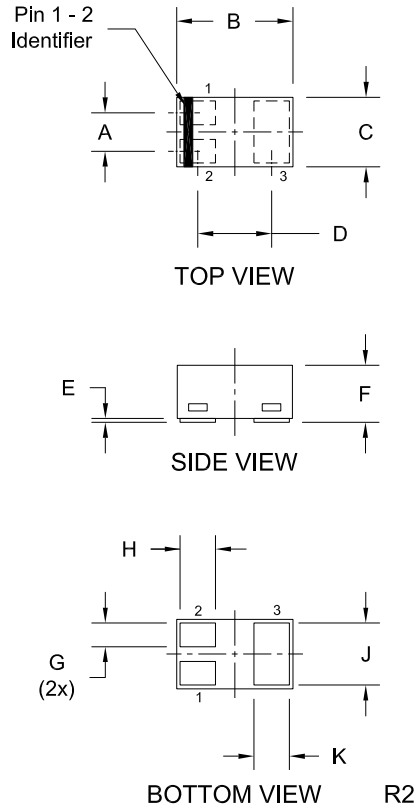
R6 (10-November 2014)

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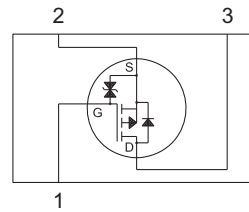
**SOT-883L CASE - MECHANICAL OUTLINE**



| 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      | 0.016 | 0.30        | 0.40 |
| G      | 0.005      | 0.007 | 0.13        | 0.18 |
| 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-883L (REV:R2)

**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 <sub>D</sub> (mW) | Central Item Number |
|-----------|--------|-------|--------|---------------------|---------------------|
| SOT-883L  | 1.05   | 0.65  | 0.40   | 100                 | CEDM8004            |
| SOT-883VL | 1.05   | 0.65  | 0.32   | 100                 | CEDM8004VL          |
| SOT-523   | 1.70   | 1.70  | 0.78   | 250                 | CMUDM8004           |

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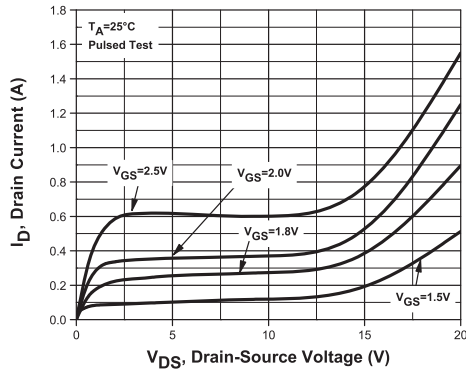
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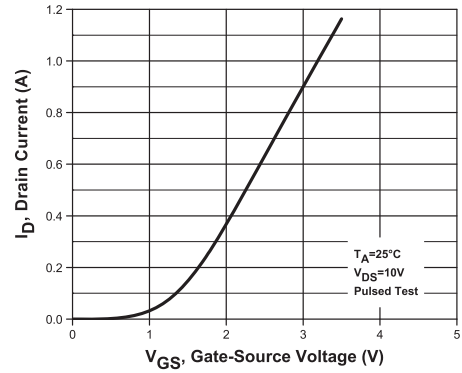


**TYPICAL ELECTRICAL CHARACTERISTICS**

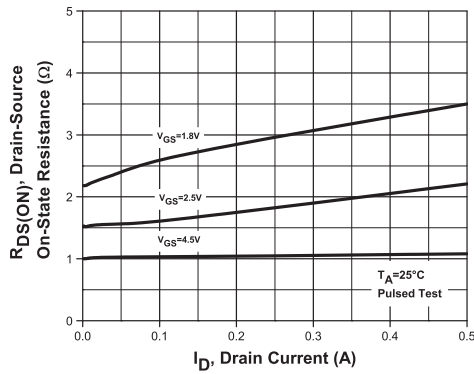
**Output Characteristics**



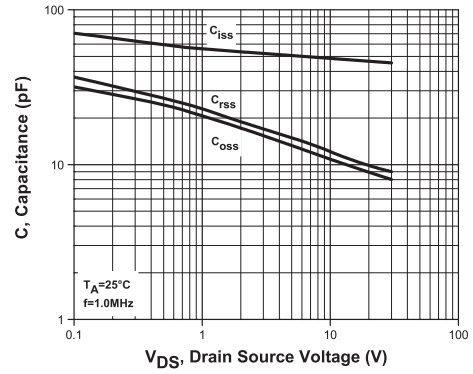
**Transfer Characteristics**



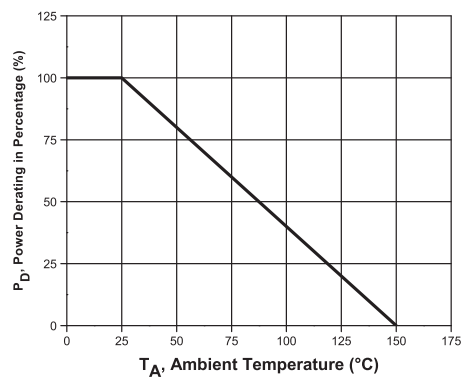
**Drain Source On Resistance**



**Capacitance**



**Normalized Power Derating**



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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

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- Custom electrical curves
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- 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

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