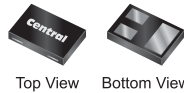


**CEDM7004****SURFACE MOUNT SILICON  
N-CHANNEL  
ENHANCEMENT-MODE  
MOSFET****SOT-883L CASE**[www.centrasemi.com](http://www.centrasemi.com)**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CEDM7004 is an N-Channel Enhancement-mode MOSFET, manufactured by the N-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: S****COMPLEMENTARY P-CHANNEL: CEDM8004****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 ( $T_L=25^\circ\text{C}$ )                      |  |
| Peak Drain Current, $t_p \leq 10\mu\text{s}$ ( $T_L=25^\circ\text{C}$ )  |  |
| Continuous Source Current ( $T_L=25^\circ\text{C}$ )                     |  |
| Peak Source Current, $t_p \leq 10\mu\text{s}$ ( $T_L=25^\circ\text{C}$ ) |  |
| Power Dissipation                                                        |  |
| Operating and Storage Junction Temperature                               |  |

**SYMBOL**

|                |             |
|----------------|-------------|
| $V_{DS}$       | 30          |
| $V_{GS}$       | 8.0         |
| $I_D$          | 1.78        |
| $I_{DM}$       | 3.56        |
| $I_S$          | 1.78        |
| $I_{SM}$       | 3.56        |
| $P_D$          | 100         |
| $T_J, T_{stg}$ | -65 to +150 |

**UNITS**

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

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

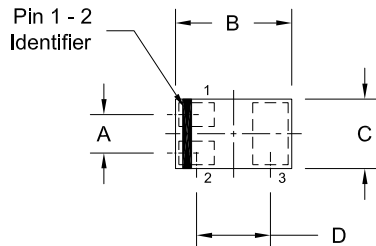
| SYMBOL               | TEST CONDITIONS                                                         | MIN | TYP   | MAX | UNITS            |
|----------------------|-------------------------------------------------------------------------|-----|-------|-----|------------------|
| $I_{GSSF}, I_{GSSR}$ | $V_{GS}=8.0\text{V}, V_{DS}=0$                                          |     |       | 3.0 | $\mu\text{A}$    |
| $I_{DSS}$            | $V_{DS}=30\text{V}, V_{GS}=0$                                           |     |       | 1.0 | $\mu\text{A}$    |
| $BV_{DSS}$           | $V_{GS}=0, I_D=10\mu\text{A}$                                           | 30  |       |     | V                |
| $V_{GS(th)}$         | $V_{DS}=V_{GS}, I_D=250\mu\text{A}$                                     | 0.5 |       | 1.0 | V                |
| $V_{SD}$             | $V_{GS}=0, I_S=400\text{mA}$                                            | 0.5 |       | 1.1 | V                |
| $r_{DS(ON)}$         | $V_{GS}=4.5\text{V}, I_D=200\text{mA}$                                  |     | 280   | 460 | $\text{m}\Omega$ |
| $r_{DS(ON)}$         | $V_{GS}=2.5\text{V}, I_D=100\text{mA}$                                  |     | 390   | 560 | $\text{m}\Omega$ |
| $r_{DS(ON)}$         | $V_{GS}=1.8\text{V}, I_D=75\text{mA}$                                   |     | 550   | 730 | $\text{m}\Omega$ |
| $Q_{g(tot)}$         | $V_{DS}=15\text{V}, V_{GS}=4.5\text{V}, I_D=1.0\text{A}$                |     | 0.792 |     | nC               |
| $Q_{gs}$             | $V_{DS}=15\text{V}, V_{GS}=4.5\text{V}, I_D=1.0\text{A}$                |     | 0.15  |     | nC               |
| $Q_{gd}$             | $V_{DS}=15\text{V}, V_{GS}=4.5\text{V}, I_D=1.0\text{A}$                |     | 0.23  |     | nC               |
| $g_{FS}$             | $V_{DS}=10\text{V}, I_D=100\text{mA}$                                   | 200 |       |     | mS               |
| $C_{rss}$            | $V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$                          |     | 5.0   |     | pF               |
| $C_{iss}$            | $V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$                          |     | 43    |     | pF               |
| $C_{oss}$            | $V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$                          |     | 8.0   |     | pF               |
| $t_{on}$             | $V_{DS}=5.0\text{V}, V_{GS}=4.0\text{V}, I_D=75\text{mA}, R_G=10\Omega$ |     | 20    |     | ns               |
| $t_{off}$            | $V_{DS}=5.0\text{V}, V_{GS}=4.0\text{V}, I_D=75\text{mA}, R_G=10\Omega$ |     | 75    |     | ns               |

R5 (29-September 2014)

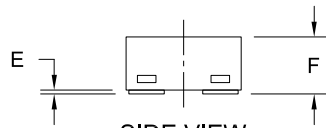
**CEDM7004**  
**SURFACE MOUNT SILICON**  
**N-CHANNEL**  
**ENHANCEMENT-MODE**  
**MOSFET**



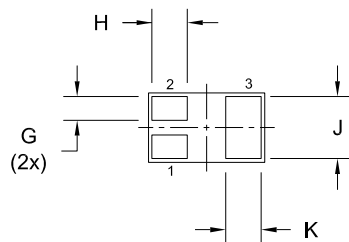
**SOT-883L CASE - MECHANICAL OUTLINE**



TOP VIEW



SIDE VIEW

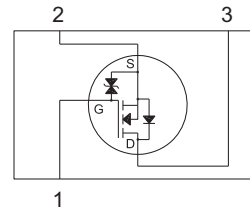


BOTTOM VIEW R2

| 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: S**

**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                 | CEDM7004            |
| SOT-883VL | 1.05   | 0.65  | 0.32   | 100                 | CEDM7004VL          |
| SOT-523   | 1.70   | 1.70  | 0.78   | 250                 | CMUDM7004           |

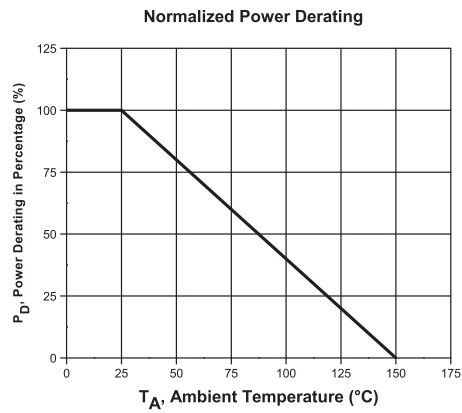
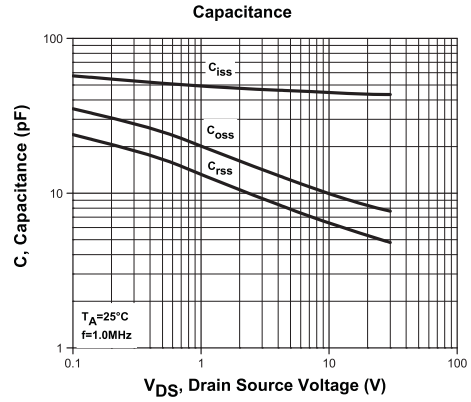
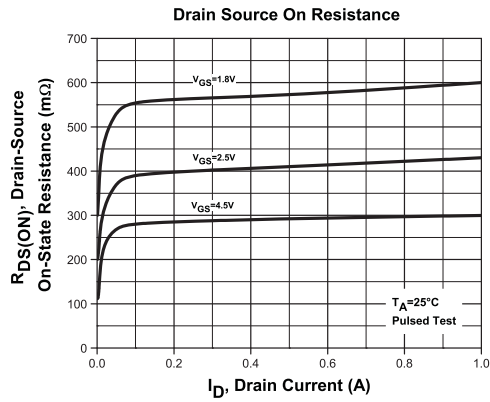
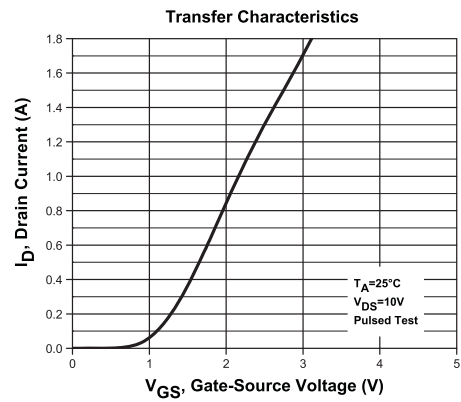
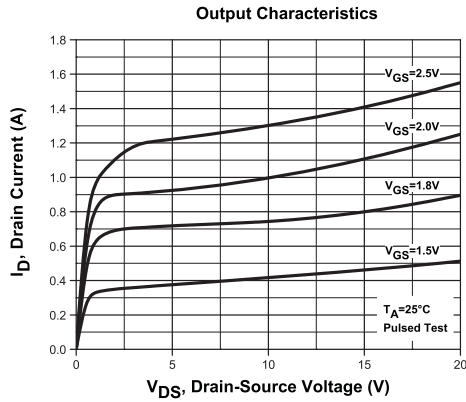
R5 (29-September 2014)

CEDM7004

SURFACE MOUNT SILICON  
N-CHANNEL  
ENHANCEMENT-MODE  
MOSFET



TYPICAL ELECTRICAL CHARACTERISTICS



R5 (29-September 2014)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### 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

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### 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

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### 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).

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### CONTACT US

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