

CEDM7004**SURFACE MOUNT SILICON
N-CHANNEL
ENHANCEMENT-MODE
MOSFET**
www.centrasemi.com


Top View Bottom View

SOT-883L CASE**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 | | UNITS |
|----------------|-------------|------------------|
| V_{DS} | 30 | V |
| V_{GS} | 8.0 | V |
| I_D | 1.78 | A |
| I_{DM} | 3.56 | A |
| I_S | 1.78 | A |
| I_{SM} | 3.56 | A |
| P_D | 100 | mW |
| T_J, T_{stg} | -65 to +150 | $^\circ\text{C}$ |

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

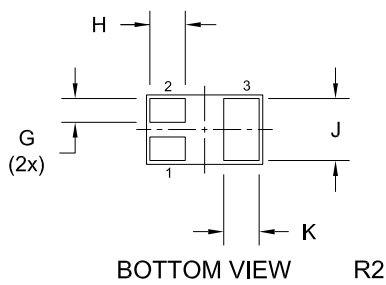
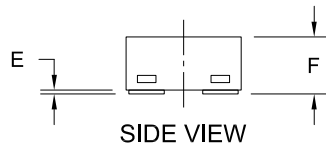
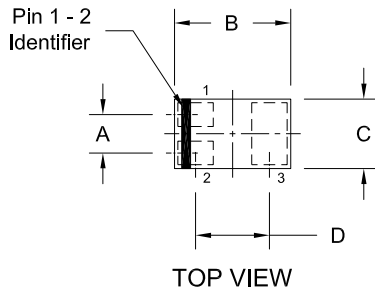
| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|----------------------|---|-----|-------|-----|------------------|
| I_{GSSF}, I_{GSSR} | $V_{GS}=8.0\text{V}, V_{DS}=0$ | | | 3.0 | μA |
| I_{DSS} | $V_{DS}=30\text{V}, V_{GS}=0$ | | | 1.0 | μA |
| BV_{DSS} | $V_{GS}=0, I_D=10\mu\text{A}$ | 30 | | | 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)

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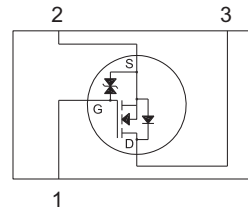
SOT-883L CASE - MECHANICAL OUTLINE



| DIMENSIONS | | | | |
|------------|--------|-------|-------------|------|
| SYMBOL | 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 _D (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 |

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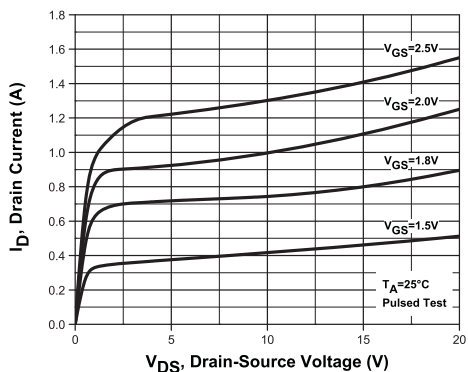
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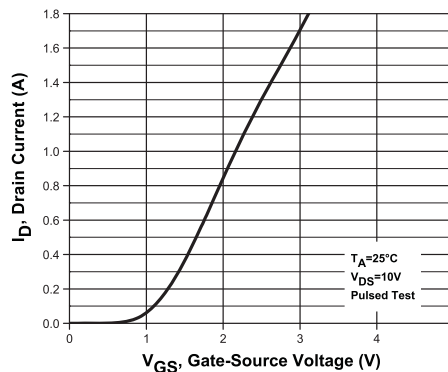


TYPICAL ELECTRICAL CHARACTERISTICS

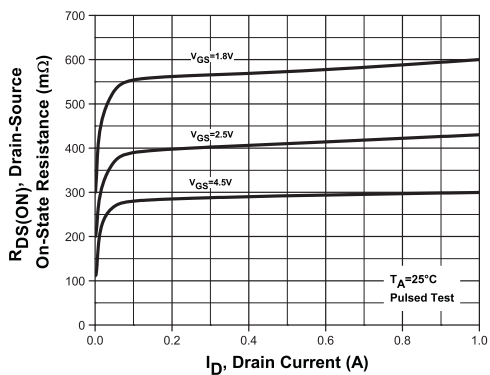
Output Characteristics



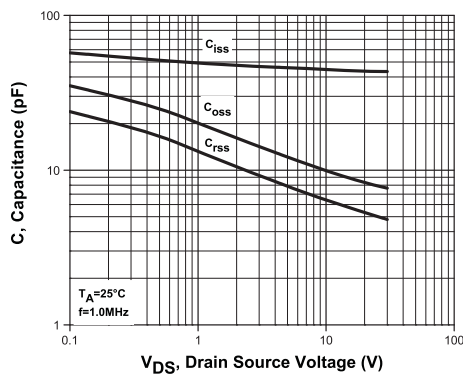
Transfer Characteristics



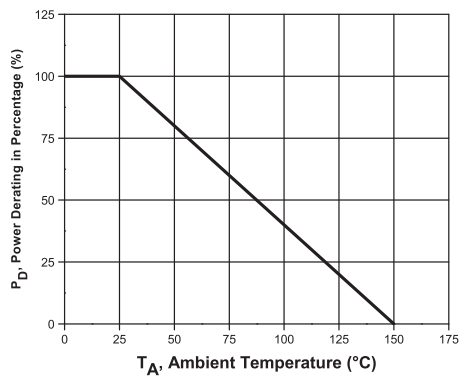
Drain Source On Resistance



Capacitance



Normalized Power Derating



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SERVICES

- Bonded Inventory
- Custom Electrical Screening
- Custom Electrical Characteristic Curves
- SPICE Models
- Custom Packaging
- Package Base Options
- Custom Device Development/ Multi Discrete Modules (MDM™)
- Bare Die for Hybrid Applications

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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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