**CMLDM3757**

**SURFACE MOUNT SILICON N-CHANNEL AND P-CHANNEL ENHANCEMENT-MODE COMPLEMENTARY MOSFET**

- **APPLIED CONDITIONS:**
  - Load/Power switches
  - Power supply converter circuits
  - Battery powered portable devices

**MAXIMUM RATINGS:**  
\( T_A=25^\circ C \)

- **Drain-Source Voltage**
  - **V_{DS}**: 20 V
- **Gate-Source Voltage**
  - **V_{GS}**: 8.0 V
- **Continuous Drain Current (Steady State)**
  - **I_D**: 540 mA, 430 mA
  - **I_{DM}**: 1500 mA, 750 mA
- **Power Dissipation**
  - **P_D**:
    - **Note 1**: 350 mW
    - **Note 2**: 300 mW
    - **Note 3**: 150 mW
- **Operating and Storage Junction Temperature**
  - **T_J, T_{stg}**: -65 to +150 °C
- **Thermal Resistance**
  - **\( \Theta_JA \)**: 357 °C/W

**ELECTRICAL CHARACTERISTICS:**  
\( T_A=25^\circ C \)

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>TEST CONDITIONS</th>
<th>N-CH (Q1)</th>
<th>P-CH (Q2)</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I_GSF, I_GSR</td>
<td><strong>V_{GS}=4.5V, V_{DS}=0</strong></td>
<td>MIN</td>
<td>TYP</td>
<td>MAX</td>
</tr>
<tr>
<td>I_DSS</td>
<td><strong>V_{DS}=16V, V_{GS}=0</strong></td>
<td>MIN</td>
<td>TYP</td>
<td>MAX</td>
</tr>
<tr>
<td>BVDSS</td>
<td><strong>V_{GS}=0, I_D=250\mu A</strong></td>
<td>20</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>V_GS(th)</td>
<td><strong>V_{DS}=V_{GS}, I_D=250\mu A</strong></td>
<td>0.45</td>
<td>-</td>
<td>1.0</td>
</tr>
<tr>
<td>V_SD</td>
<td><strong>V_{GS}=0, I_S=350mA</strong></td>
<td>-</td>
<td>-</td>
<td>1.2</td>
</tr>
<tr>
<td>r_D(S)(ON)</td>
<td><strong>V_{GS}=4.5V, I_D=540mA</strong></td>
<td>-</td>
<td>0.35</td>
<td>0.55</td>
</tr>
<tr>
<td>r_D(S)(ON)</td>
<td><strong>V_{GS}=4.5V, I_D=430mA</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>r_D(S)(ON)</td>
<td><strong>V_{GS}=2.5V, I_D=300mA</strong></td>
<td>-</td>
<td>0.5</td>
<td>0.7</td>
</tr>
<tr>
<td>r_D(S)(ON)</td>
<td><strong>V_{GS}=1.8V, I_D=150mA</strong></td>
<td>-</td>
<td>0.7</td>
<td>0.9</td>
</tr>
</tbody>
</table>

**DESCRIPTION:**
The CENTRAL SEMICONDUCTOR CMLDM3757 consists of complementary silicon N-Channel and P-Channel enhancement-mode MOSFETs designed for high speed pulsed amplifier and driver applications. These MOSFETs offer very low \( r_{DS(ON)} \) and low threshold voltage.

**MARKING CODE:** 3C7

**FEATURES:**
- ESD protection up to 1800V (Human Body Model)
- 350mW power dissipation
- Very low \( r_{DS(ON)} \)
- Low threshold voltage
- Logic level compatible
- Small, SOT-563 surface mount package

**APPLICATIONS:**
- Load/Power switches
- Power supply converter circuits
- Battery powered portable devices

**MARKING CODE:** 3C7

**R6 (8-June 2015)**
**SURFACE MOUNT SILICON N-CHANNEL AND P-CHANNEL ENHANCEMENT-MODE COMPLEMENTARY MOSFETS**

ELECTRICAL CHARACTERISTICS - Continued: \(T_A=25^\circ C\)

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>TEST CONDITIONS</th>
<th>N-CH (Q1)</th>
<th>P-CH (Q2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TYP</td>
<td>MAX</td>
<td>TYP</td>
</tr>
<tr>
<td>(C_{rss})</td>
<td>(V_{DS}=16,V, V_{GS}=0, , f=1.0,MHz)</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>(C_{rss})</td>
<td>(V_{DS}=16,V, V_{GS}=0, , f=1.0,MHz)</td>
<td>-</td>
<td>150</td>
</tr>
<tr>
<td>(C_{oss})</td>
<td>(V_{DS}=16,V, V_{GS}=0, , f=1.0,MHz)</td>
<td>-</td>
<td>25</td>
</tr>
<tr>
<td>(Q_{g,(tot)})</td>
<td>(V_{DS}=10,V, V_{GS}=4.5,V, , I_D=500,mA)</td>
<td>1.58</td>
<td>-</td>
</tr>
<tr>
<td>(Q_{g,(tot)})</td>
<td>(V_{DS}=10,V, V_{GS}=4.5,V, , I_D=200,mA)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(Q_{gs})</td>
<td>(V_{DS}=10,V, V_{GS}=4.5,V, , I_D=500,mA)</td>
<td>0.17</td>
<td>-</td>
</tr>
<tr>
<td>(Q_{gs})</td>
<td>(V_{DS}=10,V, V_{GS}=4.5,V, , I_D=200,mA)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(Q_{gd})</td>
<td>(V_{DS}=10,V, V_{GS}=4.5,V, , I_D=500,mA)</td>
<td>0.24</td>
<td>-</td>
</tr>
<tr>
<td>(Q_{gd})</td>
<td>(V_{DS}=10,V, V_{GS}=4.5,V, , I_D=200,mA)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(t_{on})</td>
<td>(V_{DD}=10,V, V_{GS}=4.5,V, , I_D=540,mA, R_G=10,\Omega)</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>(t_{off})</td>
<td>(V_{DD}=10,V, V_{GS}=4.5,V, , I_D=540,mA, R_G=10,\Omega)</td>
<td>25</td>
<td>-</td>
</tr>
<tr>
<td>(t_{on})</td>
<td>(V_{DD}=10,V, V_{GS}=4.5,V, , I_D=215,mA, R_G=10,\Omega)</td>
<td>-</td>
<td>38</td>
</tr>
<tr>
<td>(t_{off})</td>
<td>(V_{DD}=10,V, V_{GS}=4.5,V, , I_D=215,mA, R_G=10,\Omega)</td>
<td>-</td>
<td>48</td>
</tr>
</tbody>
</table>

**SOT-563 CASE - MECHANICAL OUTLINE**

**PIN CONFIGURATION**

**LEAD CODE:**
1) Source Q1
2) Gate Q1
3) Drain Q2
4) Source Q2
5) Gate Q2
6) Drain Q1

**MARKING CODE:** 3C7

www.centralsemi.com

R6 (8-June 2015)
N-CHANNEL TYPICAL ELECTRICAL CHARACTERISTICS

Output Characteristics

 Drain Source On Resistance

Capacitance

Transfer Characteristics
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
Corporate Headquarters & Customer Support Team
Central Semiconductor Corp.
145 Adams Avenue
Hauppauge, NY 11788 USA
Main Tel: (631) 435-1110
Main Fax: (631) 435-1824
Support Team Fax: (631) 435-3388
www.centralsemi.com

Worldwide Field Representatives:
www.centralsemi.com/wwreps

Worldwide Distributors:
www.centralsemi.com/wwdistributors

For the latest version of Central Semiconductor’s LIMITATIONS AND DAMAGES DISCLAIMER, which is part of Central’s Standard Terms and Conditions of sale, visit: www.centralsemi.com/terms

www.centralsemi.com