

**CMLDM3757****SURFACE MOUNT SILICON  
N-CHANNEL AND P-CHANNEL  
ENHANCEMENT-MODE  
COMPLEMENTARY MOSFETS****SOT-563 CASE****APPLICATIONS:**

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

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

Drain-Source Voltage

Gate-Source Voltage

Continuous Drain Current (Steady State)

Maximum Pulsed Drain Current ( $t_p=10\mu\text{s}$ )

Power Dissipation (Note 1)

Power Dissipation (Note 2)

Power Dissipation (Note 3)

Operating and Storage Junction Temperature

Thermal Resistance (Note 1)

**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^{\circ}\text{C}$ )**SYMBOL TEST CONDITIONS** $I_{GSS}, I_{GSSR}$   $V_{GS}=4.5\text{V}, V_{DS}=0$  $I_{DSS}$   $V_{DS}=16\text{V}, V_{GS}=0$  $BV_{DSS}$   $V_{GS}=0, I_D=250\mu\text{A}$  $V_{GS(th)}$   $V_{DS}=V_{GS}, I_D=250\mu\text{A}$  $V_{SD}$   $V_{GS}=0, I_S=350\text{mA}$  $r_{DS(ON)}$   $V_{GS}=4.5\text{V}, I_D=540\text{mA}$  $r_{DS(ON)}$   $V_{GS}=4.5\text{V}, I_D=430\text{mA}$  $r_{DS(ON)}$   $V_{GS}=2.5\text{V}, I_D=500\text{mA}$  $r_{DS(ON)}$   $V_{GS}=2.5\text{V}, I_D=300\text{mA}$  $r_{DS(ON)}$   $V_{GS}=1.8\text{V}, I_D=350\text{mA}$  $r_{DS(ON)}$   $V_{GS}=1.8\text{V}, I_D=150\text{mA}$ [www.centrasemi.com](http://www.centrasemi.com)**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMLDM3757 consists of complementary N-Channel and P-Channel enhancement-mode silicon 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

| SYMBOL         | N-CH (Q1)   | P-CH (Q2) | UNITS                |
|----------------|-------------|-----------|----------------------|
| $V_{DS}$       | 20          |           | V                    |
| $V_{GS}$       | 8.0         |           | V                    |
| $I_D$          | 540         | 430       | mA                   |
| $I_{DM}$       | 1500        | 750       | mA                   |
| $P_D$          | 350         |           | mW                   |
| $P_D$          | 300         |           | mW                   |
| $P_D$          | 150         |           | mW                   |
| $T_J, T_{stg}$ | -65 to +150 |           | $^{\circ}\text{C}$   |
| $\Theta_{JA}$  | 357         |           | $^{\circ}\text{C/W}$ |

| SYMBOL              | TEST CONDITIONS                        | N-CH (Q1) |      |      | P-CH (Q2) |      |     | UNITS         |
|---------------------|----------------------------------------|-----------|------|------|-----------|------|-----|---------------|
|                     |                                        | MIN       | TYP  | MAX  | MIN       | TYP  | MAX |               |
| $I_{GSS}, I_{GSSR}$ | $V_{GS}=4.5\text{V}, V_{DS}=0$         | -         | -    | 5.0  | -         | -    | 2.0 | $\mu\text{A}$ |
| $I_{DSS}$           | $V_{DS}=16\text{V}, V_{GS}=0$          | -         | -    | 1.0  | -         | -    | 1.0 | $\mu\text{A}$ |
| $BV_{DSS}$          | $V_{GS}=0, I_D=250\mu\text{A}$         | 20        | -    | -    | 20        | -    | -   | V             |
| $V_{GS(th)}$        | $V_{DS}=V_{GS}, I_D=250\mu\text{A}$    | 0.45      | -    | 1.0  | 0.45      | -    | 1.0 | V             |
| $V_{SD}$            | $V_{GS}=0, I_S=350\text{mA}$           | -         | -    | 1.2  | -         | -    | 1.2 | V             |
| $r_{DS(ON)}$        | $V_{GS}=4.5\text{V}, I_D=540\text{mA}$ | -         | 0.35 | 0.55 | -         | -    | -   | $\Omega$      |
| $r_{DS(ON)}$        | $V_{GS}=4.5\text{V}, I_D=430\text{mA}$ | -         | -    | -    | -         | 0.4  | 0.9 | $\Omega$      |
| $r_{DS(ON)}$        | $V_{GS}=2.5\text{V}, I_D=500\text{mA}$ | -         | 0.5  | 0.7  | -         | -    | -   | $\Omega$      |
| $r_{DS(ON)}$        | $V_{GS}=2.5\text{V}, I_D=300\text{mA}$ | -         | -    | -    | -         | 0.55 | 1.2 | $\Omega$      |
| $r_{DS(ON)}$        | $V_{GS}=1.8\text{V}, I_D=350\text{mA}$ | -         | 0.7  | 0.9  | -         | -    | -   | $\Omega$      |
| $r_{DS(ON)}$        | $V_{GS}=1.8\text{V}, I_D=150\text{mA}$ | -         | -    | -    | -         | 0.75 | 2.0 | $\Omega$      |

Notes: (1) Ceramic or aluminum core PC Board with copper mounting pad area of 4.0mm<sup>2</sup>(2) FR-4 Epoxy PC Board with copper mounting pad area of 4.0mm<sup>2</sup>(3) FR-4 Epoxy PC Board with copper mounting pad area of 1.4mm<sup>2</sup>

R4 (5-June 2013)

CMLDM3757

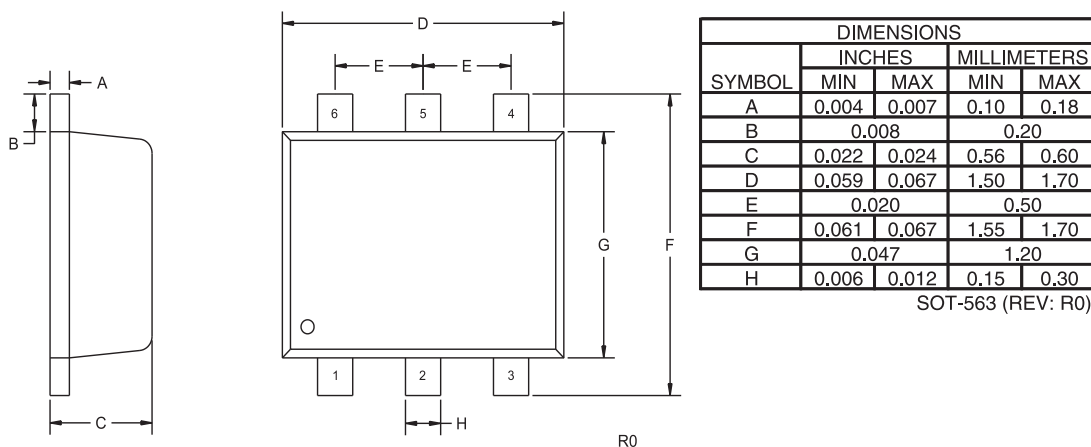
**SURFACE MOUNT SILICON  
N-CHANNEL AND P-CHANNEL  
ENHANCEMENT-MODE  
COMPLEMENTARY MOSFETS**



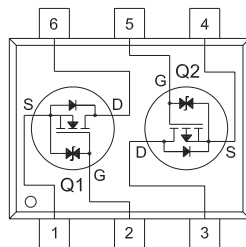
**ELECTRICAL CHARACTERISTICS - Continued: ( $T_A=25^\circ\text{C}$ )**

| SYMBOL              | TEST CONDITIONS                                                         | N-CH (Q1) |     | P-CH (Q2) |     | UNITS |
|---------------------|-------------------------------------------------------------------------|-----------|-----|-----------|-----|-------|
|                     |                                                                         | TYP       | MAX | TYP       | MAX |       |
| $C_{rss}$           | $V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$                          | -         | 20  | -         | 20  | pF    |
| $C_{iss}$           | $V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$                          | -         | 150 | -         | 175 | pF    |
| $C_{oss}$           | $V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$                          | -         | 25  | -         | 30  | pF    |
| $Q_{g(\text{tot})}$ | $V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=500\text{mA}$               | 1.58      | -   | -         | -   | nC    |
| $Q_{g(\text{tot})}$ | $V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=200\text{mA}$               | -         | -   | 1.2       | -   | nC    |
| $Q_{gs}$            | $V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=500\text{mA}$               | 0.17      | -   | -         | -   | nC    |
| $Q_{gs}$            | $V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=200\text{mA}$               | -         | -   | 0.24      | -   | nC    |
| $Q_{gd}$            | $V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=500\text{mA}$               | 0.24      | -   | -         | -   | nC    |
| $Q_{gd}$            | $V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=200\text{mA}$               | -         | -   | 0.36      | -   | nC    |
| $t_{on}$            | $V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=540\text{mA}, R_G=10\Omega$ | 10        | -   | -         | -   | ns    |
| $t_{off}$           | $V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=540\text{mA}, R_G=10\Omega$ | 25        | -   | -         | -   | ns    |
| $t_{on}$            | $V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=215\text{mA}, R_G=10\Omega$ | -         | -   | 38        | -   | ns    |
| $t_{off}$           | $V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=215\text{mA}, R_G=10\Omega$ | -         | -   | 48        | -   | ns    |

**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**

R4 (5-June 2013)

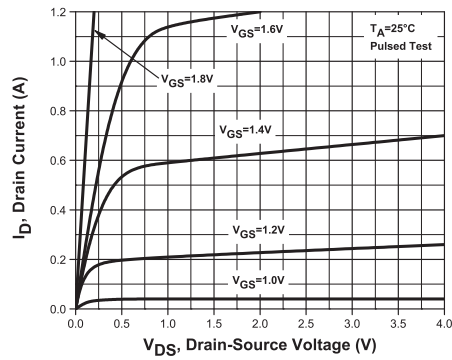
CMLDM3757

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

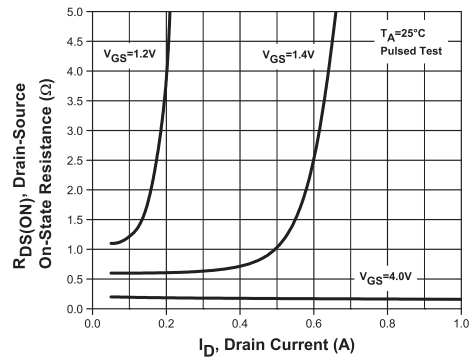


**N-CHANNEL TYPICAL ELECTRICAL CHARACTERISTICS**

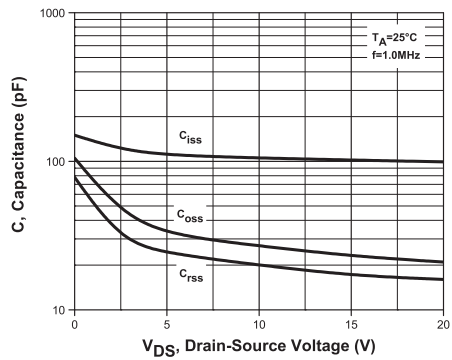
**Output Characteristics**



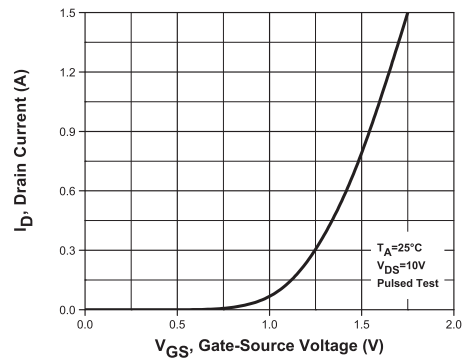
**Drain Source On Resistance**



**Capacitance**



**Transfer Characteristics**



R4 (5-June 2013)

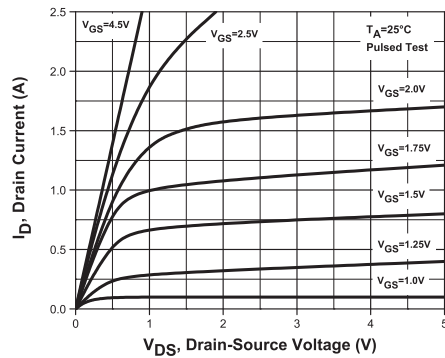
CMLDM3757

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

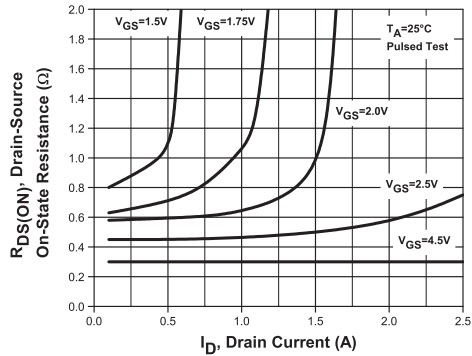


**P-CHANNEL TYPICAL ELECTRICAL CHARACTERISTICS**

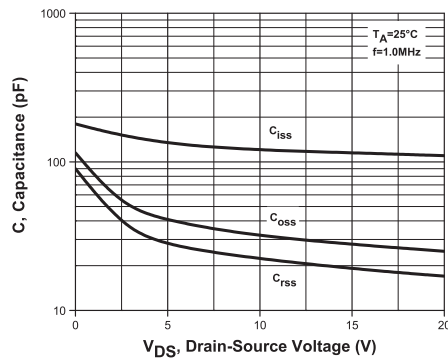
**Output Characteristics**



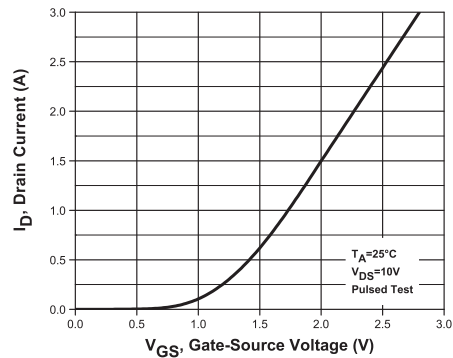
**Drain Source On Resistance**



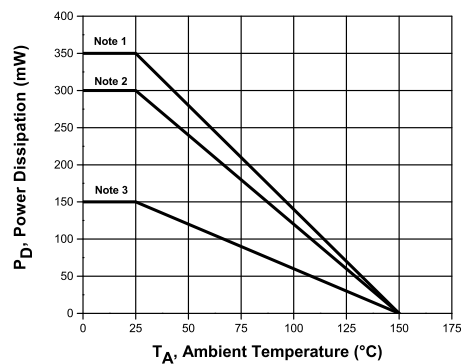
**Capacitance**



**Transfer Characteristics**



**Power Derating**



R4 (5-June 2013)

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Central Semiconductor:](#)

[CMLDM3757 TR PBFREE](#)