

**CMLDM5757**  
**SURFACE MOUNT SILICON**  
**DUAL P-CHANNEL**  
**ENHANCEMENT-MODE**  
**MOSFET**



www.centrasemi.com



**SOT-563 CASE**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMLDM5757 consists of dual silicon 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: 77C**

**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
- Complementary dual N-Channel device: CMLDM3737

**APPLICATIONS:**

- Load switch/Level shifting
- Battery charging
- Boost switch
- Electro-luminescent backlighting

**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)                          |  |

**SYMBOL**

| SYMBOL         |             | UNITS              |
|----------------|-------------|--------------------|
| $V_{DS}$       | 20          | V                  |
| $V_{GS}$       | 8.0         | V                  |
| $I_D$          | 430         | mA                 |
| $I_{DM}$       | 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         | $^\circ\text{C/W}$ |

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

| SYMBOL               | TEST CONDITIONS                                | MIN  | MAX | UNITS         |
|----------------------|--|------|-----|---------------|
| $I_{GSSF}, I_{GSSR}$ | $V_{GS}=4.5\text{V}, V_{DS}=0$                 |      | 2.0 | $\mu\text{A}$ |
| $I_{DSS}$            | $V_{DS}=16\text{V}, V_{GS}=0$                  |      | 1.0 | $\mu\text{A}$ |
| $BV_{DSS}$           | $V_{GS}=0, I_D=250\mu\text{A}$                 | 20   |     | V             |
| $V_{GS(th)}$         | $V_{DS}=V_{GS}, I_D=250\mu\text{A}$            | 0.45 | 1.0 | V             |
| $V_{SD}$             | $V_{GS}=0, I_S=350\text{mA}$                   |      | 1.2 | V             |
| $r_{DS(ON)}$         | $V_{GS}=4.5\text{V}, I_D=430\text{mA}$         |      | 0.9 | $\Omega$      |
| $r_{DS(ON)}$         | $V_{GS}=2.5\text{V}, I_D=300\text{mA}$         |      | 1.2 | $\Omega$      |
| $r_{DS(ON)}$         | $V_{GS}=1.8\text{V}, I_D=150\text{mA}$         |      | 2.0 | $\Omega$      |
| $C_{rss}$            | $V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$ |      | 20  | pF            |
| $C_{iss}$            | $V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$ |      | 175 | pF            |
| $C_{oss}$            | $V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$ |      | 30  | pF            |

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>

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CMLDM5757

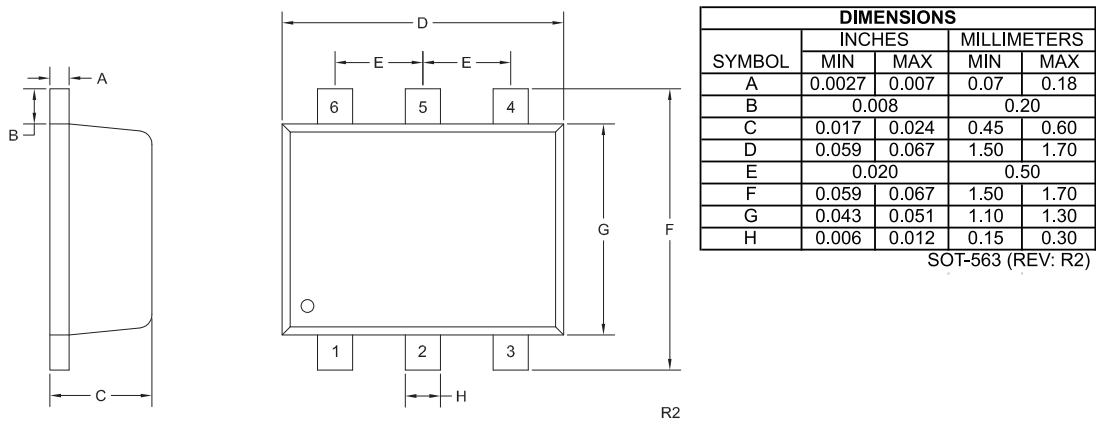
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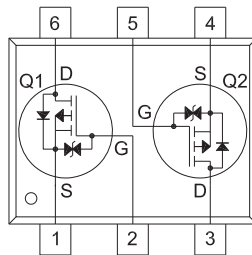
**ELECTRICAL CHARACTERISTICS PER TRANSISTOR - Continued: ( $T_A=25^\circ\text{C}$ )**

| SYMBOL              | TEST CONDITIONS  | TYP  | NITS |
|---------------------|--|------|------|
| $Q_{g(\text{tot})}$ | $V_{DS}=10\text{V}$ , $V_{GS}=4.5\text{V}$ , $I_D=200\text{mA}$                  | 1.2  | nC   |
| $Q_{gs}$            | $V_{DS}=10\text{V}$ , $V_{GS}=4.5\text{V}$ , $I_D=200\text{mA}$                  | 0.24 | nC   |
| $Q_{gd}$            | $V_{DS}=10\text{V}$ , $V_{GS}=4.5\text{V}$ , $I_D=200\text{mA}$                  | 0.36 | nC   |
| $t_{\text{on}}$     | $V_{DD}=10\text{V}$ , $V_{GS}=4.5\text{V}$ , $I_D=215\text{mA}$ , $R_G=10\Omega$ | 38   | ns   |
| $t_{\text{off}}$    | $V_{DD}=10\text{V}$ , $V_{GS}=4.5\text{V}$ , $I_D=215\text{mA}$ , $R_G=10\Omega$ | 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

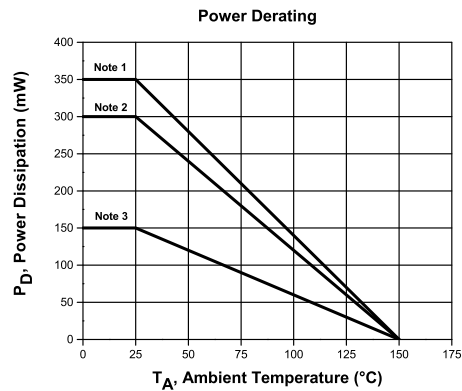
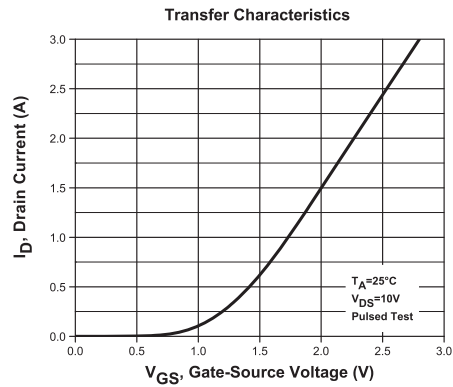
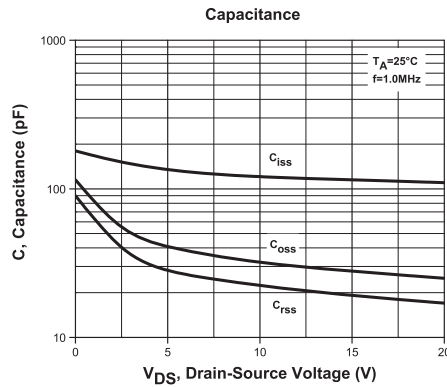
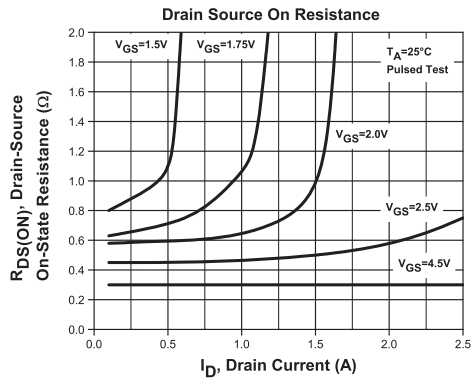
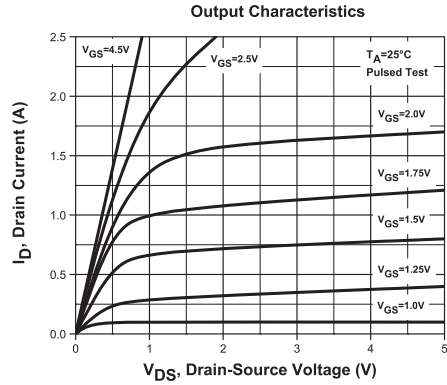
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**TYPICAL ELECTRICAL CHARACTERISTICS**



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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 Available for Hybrid Applications

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