

CMLDM3737

**SURFACE MOUNT  
DUAL N-CHANNEL  
ENHANCEMENT-MODE  
SILICON MOSFETS**



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PICOmini™



SOT-563 CASE

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMLDM3737 consists of Dual N-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: 7C3**

**FEATURES:**

- ESD Protection up to 2kV
- 350mW Power Dissipation
- Very Low  $r_{DS(ON)}$
- Low Threshold Voltage
- Logic Level Compatible
- Small, SOT-563 Surface Mount Package
- Complementary Dual P-Channel Device: CMLDM5757

**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**

$V_{DS}$	20	V
$V_{GS}$	8.0	V
$I_D$	540	mA
$I_{DM}$	1.5	A
$P_D$	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	TYP	MAX	UNITS
$I_{GSSF}, I_{GSSR}$	$V_{GS}=4.5\text{V}, V_{DS}=0$			5.0	$\mu\text{A}$
$I_{DSS}$	$V_{DS}=16\text{V}, V_{GS}=0$			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
$r_{DS(ON)}$	$V_{GS}=4.5\text{V}, I_D=540\text{mA}$			0.55	$\Omega$
$r_{DS(ON)}$	$V_{GS}=2.5\text{V}, I_D=500\text{mA}$			0.7	$\Omega$
$r_{DS(ON)}$	$V_{GS}=1.8\text{V}, I_D=350\text{mA}$			0.9	$\Omega$
$Q_g(\text{tot})$	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=500\text{mA}$		1.58		nC
$Q_{gs}$	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=500\text{mA}$		0.17		nC
$Q_{gd}$	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=500\text{mA}$		0.24		nC

- 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>

R1 (28-October 2010)

CMLDM3737

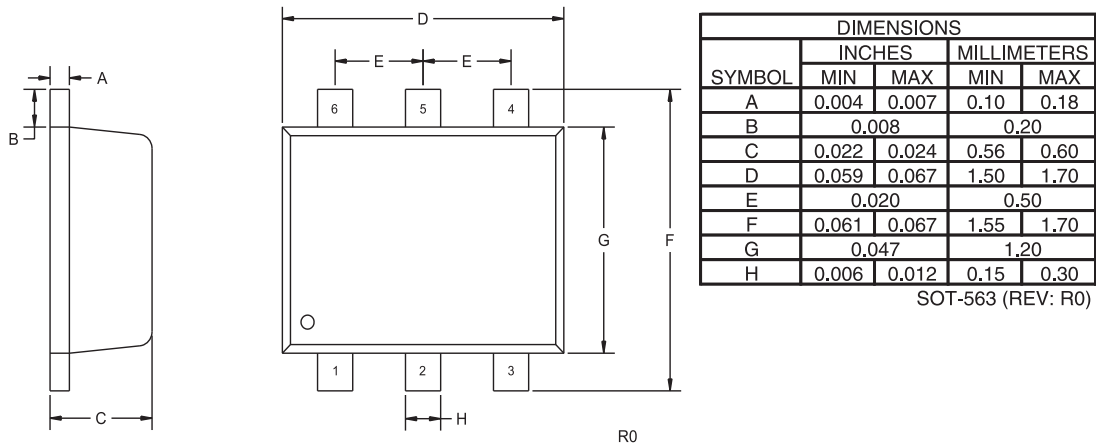
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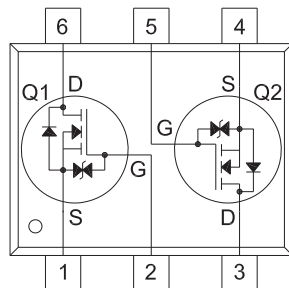
**ELECTRICAL CHARACTERISTICS PER TRANSISTOR - Continued: ( $T_A=25^\circ\text{C}$ )**

SYMBOL	TEST CONDITIONS	TYP	MAX	UNITS
$C_{rss}$	$V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$		20	pF
$C_{iss}$	$V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$		150	pF
$C_{oss}$	$V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$		25	pF
$t_{on}$	$V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=540\text{mA}, R_G=10\Omega$	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

**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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