

CMLDM3737

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



www.centrasemi.com



**SOT-563 CASE**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMLDM3737 consists of dual silicon N-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: 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
$V_{GS}$	8.0
$I_D$	540
$I_{DM}$	1.5
$P_D$	350
$P_D$	300
$P_D$	150
$T_J, T_{stg}$	-65 to +150
$\theta_{JA}$	357

**UNITS**

V
V
mA
A
mW
mW
mW
$^\circ\text{C}$
$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{GSSF}, I_{GSSR}$	$V_{GS}=4.5\text{V}, V_{DS}=0$		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	$\Omega$
$C_{rss}$	$V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$		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

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>

R3 (8-June 2015)

CMLDM3737

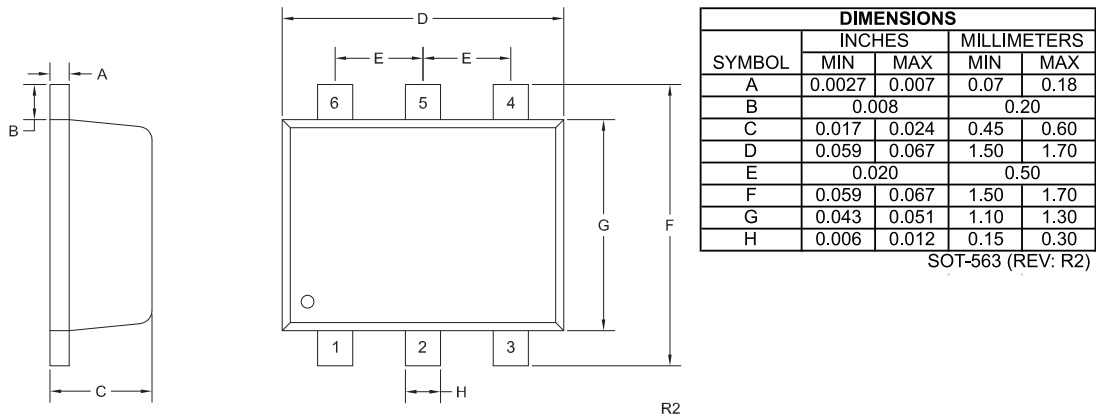
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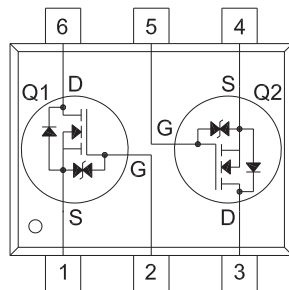
**ELECTRICAL CHARACTERISTICS PER TRANSISTOR - Continued:** ( $T_A=25^\circ\text{C}$ )

SYMBOL	TEST CONDITIONS	TYP	UNITS
$Q_{g(\text{tot})}$	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=500\text{mA}$	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
$t_{\text{on}}$	$V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=540\text{mA}, R_G=10\Omega$	10	ns
$t_{\text{off}}$	$V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=540\text{mA}, R_G=10\Omega$	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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R3 (8-June 2015)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### 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

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> 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

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### 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).

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### CONTACT US

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