

CMLDM3757

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

PICOmini™



SOT-563 CASE

• Device is **Halogen Free** by design

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_{GSSF} , 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} $V_{GS}=0$, $I_S=350\text{mA}$

$r_{DS(ON)}$ $V_{GS}=4.5\text{V}$, $I_D=540\text{mA}$

$r_{DS(ON)}$ $V_{GS}=4.5\text{V}$, $I_D=430\text{mA}$

$r_{DS(ON)}$ $V_{GS}=2.5\text{V}$, $I_D=500\text{mA}$

$r_{DS(ON)}$ $V_{GS}=2.5\text{V}$, $I_D=300\text{mA}$

$r_{DS(ON)}$ $V_{GS}=1.8\text{V}$, $I_D=350\text{mA}$

$r_{DS(ON)}$ $V_{GS}=1.8\text{V}$, $I_D=150\text{mA}$

Central
Semiconductor Corp.

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 2kV
- 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		$^\circ\text{C}$
Θ_{JA}	357		$^\circ\text{C/W}$

N-CH (Q1)		P-CH (Q2)		UNITS
MIN	MAX	MIN	MAX	
-	5.0	-	2.0	μA
-	1.0	-	1.0	μA
20	-	20	-	V
0.45	1.0	0.45	1.0	V
-	1.2	-	1.2	V
-	0.55	-	-	Ω
-	-	-	0.9	Ω
-	0.7	-	-	Ω
-	-	-	1.2	Ω
-	0.9	-	-	Ω
-	-	-	2.0	Ω

Notes: (1) Ceramic or aluminum core PC Board with copper mounting pad area of 4.0mm^2

(2) FR-4 Epoxy PC Board with copper mounting pad area of 4.0mm^2

(3) FR-4 Epoxy PC Board with copper mounting pad area of 1.4mm^2

R1 (22-September 2010)

CMLDM3757

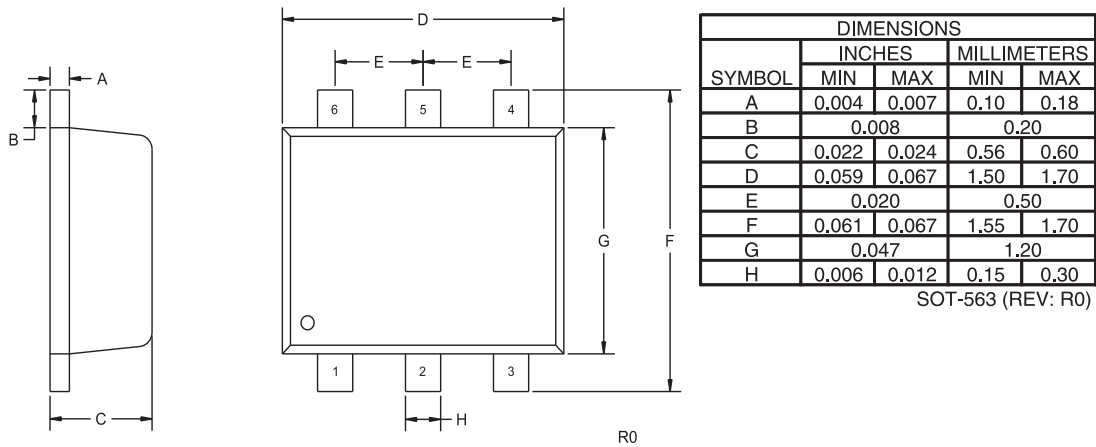
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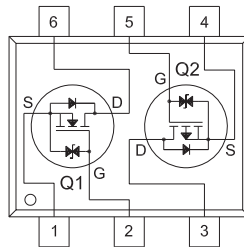
ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$)

SYMBOL	TEST CONDITIONS	N-CH (Q1)		P-CH (Q2)		UNITS
		TYP	MAX	TYP	MAX	
$Q_G(\text{TOT})$	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=500\text{mA}$	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
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
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}	$V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=215\text{mA}, R_G=10\Omega$	-	-	22	-	ns
t_{off}	$V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=215\text{mA}, R_G=10\Omega$	-	-	55	-	ns

SOT-563 - 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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