

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°C)

Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	8.0	V
Continuous Drain Current (Steady State)	I _D	540	430
Maximum Pulsed Drain Current (tp=10µs)	I _{DM}	1500	750
Power Dissipation (Note 1)	P _D	350	mW
Power Dissipation (Note 2)	P _D	300	mW
Power Dissipation (Note 3)	P _D	150	mW
Operating and Storage Junction Temperature	T _J , T _{stg}	-65 to +150	°C
Thermal Resistance (Note 1)	θ _{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C)

SYMBOL	TEST CONDITIONS	N-CH (Q1)			P-CH (Q2)			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
I _{GSSF} , I _{GSSR}	V _{GS} =4.5V, V _{DS} =0	-	-	5.0	-	-	2.0	µA
I _{DSS}	V _{DS} =16V, V _{GS} =0	-	-	1.0	-	-	1.0	µA
BV _{DSS}	V _{GS} =0, I _D =250µA	20	-	-	20	-	-	V
V _{GS(th)}	V _{DS} =V _{GS} , I _D =250µA	0.45	-	1.0	0.45	-	1.0	V
V _{SD}	V _{GS} =0, I _S =350mA	-	-	1.2	-	-	1.2	V
r _{DS(ON)}	V _{GS} =4.5V, I _D =540mA	-	0.35	0.55	-	-	-	Ω
r _{DS(ON)}	V _{GS} =4.5V, I _D =430mA	-	-	-	-	0.4	0.9	Ω
r _{DS(ON)}	V _{GS} =2.5V, I _D =500mA	-	0.5	0.7	-	-	-	Ω
r _{DS(ON)}	V _{GS} =2.5V, I _D =300mA	-	-	-	-	0.55	1.2	Ω
r _{DS(ON)}	V _{GS} =1.8V, I _D =350mA	-	0.7	0.9	-	-	-	Ω
r _{DS(ON)}	V _{GS} =1.8V, I _D =150mA	-	-	-	-	0.75	2.0	Ω

- Notes: (1) Ceramic or aluminum core PC Board with copper mounting pad area of 4.0mm²
 (2) FR-4 Epoxy PC Board with copper mounting pad area of 4.0mm²
 (3) FR-4 Epoxy PC Board with copper mounting pad area of 1.4mm²



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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

R3 (30-July 2011)

CMLDM3757

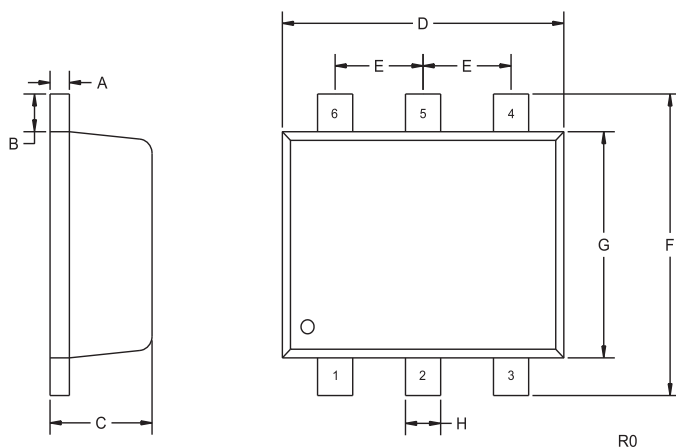
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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$)

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}	$V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=215\text{mA}, R_G=10\Omega$	-	-	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

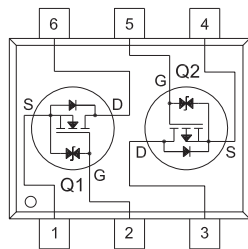
SOT-563 - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.004	0.007	0.10	0.18
B	0.008		0.20	
C	0.022	0.024	0.56	0.60
D	0.059	0.067	1.50	1.70
E	0.020		0.50	
F	0.061	0.067	1.55	1.70
G	0.047		1.20	
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R0)

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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