

CMLDM7585

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

PICOmini™



SOT-563 CASE

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_{GSSS} , I_{GSSR}	$V_{\text{GS}}=4.5\text{V}$, $V_{\text{DS}}=0$
I_{DSS}	$V_{\text{DS}}=16\text{V}$, $V_{\text{GS}}=0$
BV_{DSS}	$V_{\text{GS}}=0$, $I_{\text{D}}=250\mu\text{A}$
$V_{\text{GS(th)}}$	$V_{\text{DS}}=V_{\text{GS}}$, $I_{\text{D}}=250\mu\text{A}$
V_{SD}	$V_{\text{GS}}=0$, $I_{\text{S}}=200\text{mA}$
V_{SD}	$V_{\text{GS}}=0$, $I_{\text{S}}=250\text{mA}$
$r_{\text{DS(ON)}}$	$V_{\text{GS}}=4.5\text{V}$, $I_{\text{D}}=600\text{mA}$
$r_{\text{DS(ON)}}$	$V_{\text{GS}}=4.5\text{V}$, $I_{\text{D}}=350\text{mA}$
$r_{\text{DS(ON)}}$	$V_{\text{GS}}=2.5\text{V}$, $I_{\text{D}}=500\text{mA}$
$r_{\text{DS(ON)}}$	$V_{\text{GS}}=2.5\text{V}$, $I_{\text{D}}=300\text{mA}$
$r_{\text{DS(ON)}}$	$V_{\text{GS}}=1.8\text{V}$, $I_{\text{D}}=350\text{mA}$
$r_{\text{DS(ON)}}$	$V_{\text{GS}}=1.8\text{V}$, $I_{\text{D}}=150\text{mA}$

Central
Semiconductor Corp.

www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMLDM7585 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 $r_{\text{DS(ON)}}$ and Low Threshold Voltage.

MARKING CODE: 87C

FEATURES:

- ESD Protection up to 2kV
- 350mW Power Dissipation
- Very Low $r_{\text{DS(ON)}}$
- 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}	650		mA
I_{DM}	1.3	1.0	A
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	TYP	MAX	MIN	TYP	MAX	
-	-	1.0	-	-	10	μA
-	-	100	-	-	100	nA
20	-	-	20	-	-	V
0.5	-	1.1	0.5	-	1.0	V
-	-	1.1	-	-	-	V
-	-	-	-	-	1.1	V
-	0.14	0.23	-	-	-	Ω
-	-	-	-	0.25	0.36	Ω
-	0.2	0.275	-	-	-	Ω
-	-	-	-	0.37	0.5	Ω
-	-	0.7	-	-	-	Ω
-	-	-	-	-	0.8	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

R3 (27-September 2011)

CMLDM7585

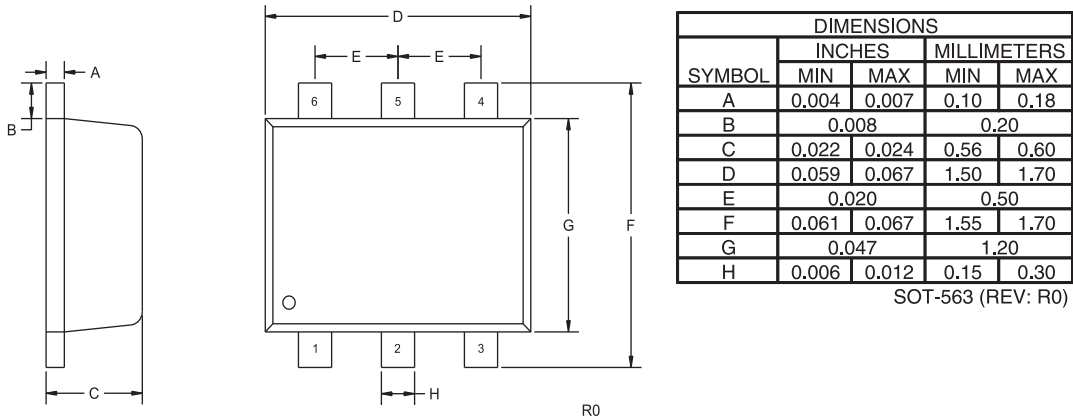
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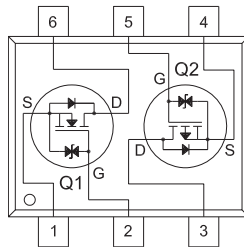
ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$)

SYMBOL	TEST CONDITIONS	N-CH (Q1)		P-CH (Q2)		UNITS
		MIN	TYP	MIN	TYP	
$Q_g(\text{tot})$	$V_{DS}=10\text{V}$, $V_{GS}=4.5\text{V}$, $I_D=500\text{mA}$	-	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
gFS	$V_{DS}=10\text{V}$, $I_D=400\text{mA}$	1.0	-	-	-	S
gFS	$V_{DS}=10\text{V}$, $I_D=200\text{mA}$	-	-	0.2	-	S
C_{rss}	$V_{DS}=16\text{V}$, $V_{GS}=0$, $f=1.0\text{MHz}$	-	18	-	25	pF
C_{iss}	$V_{DS}=16\text{V}$, $V_{GS}=0$, $f=1.0\text{MHz}$	-	100	-	100	pF
C_{oss}	$V_{DS}=16\text{V}$, $V_{GS}=0$, $f=1.0\text{MHz}$	-	16	-	21	pF
t_{on}	$V_{DD}=10\text{V}$, $V_{GS}=4.5\text{V}$, $I_D=200\text{mA}$, $R_G=10\Omega$	-	10	-	38	ns
t_{off}	$V_{DD}=10\text{V}$, $V_{GS}=4.5\text{V}$, $I_D=200\text{mA}$, $R_G=10\Omega$	-	25	-	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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