

**CMLDM8005**  
**SURFACE MOUNT SILICON**  
**DUAL P-CHANNEL**  
**ENHANCEMENT-MODE**  
**MOSFET**



[www.centrasemi.com](http://www.centrasemi.com)



**SOT-563 CASE**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMLDM8005 consists of dual 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: CC8**

**FEATURES:**

- ESD protection up to 1800V (Human Body Model)
- 350mW power dissipation
- Very low  $r_{DS(ON)}$
- Low threshold voltage
- Logic level compatible
- Small, SOT-563 surface mount package
- Complementary dual N-Channel device: CMLDM7005

**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 - Note 1)	
Continuous Source Current (Body Diode)	
Maximum Pulsed Drain Current	
Power Dissipation (Note 1)	
Power Dissipation (Note 2)	
Power Dissipation (Note 2)	
Operating and Storage Junction Temperature	
Thermal Resistance (Note 1)	

SYMBOL		UNITS
$V_{DS}$	20	V
$V_{GS}$	8.0	V
$I_D$	650	mA
$I_S$	250	mA
$I_{DM}$	1.0	A
$P_D$	350	mW
$P_D$	300	mW
$P_D$	150	mW
$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$
$\theta_{JA}$	357	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{GSSF}, I_{GSSR}$	$V_{GS}=4.5V, V_{DS}=0$			10	$\mu\text{A}$
$I_{DSS}$	$V_{DS}=16V, V_{GS}=0$			100	nA
$BV_{DSS}$	$V_{GS}=0, I_D=250\mu\text{A}$	20			V
$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	0.5		1.0	V
$V_{SD}$	$V_{GS}=0, I_S=250\text{mA}$			1.1	V
$r_{DS(ON)}$	$V_{GS}=4.5V, I_D=350\text{mA}$		0.25	0.36	$\Omega$
$r_{DS(ON)}$	$V_{GS}=2.5V, I_D=300\text{mA}$		0.37	0.5	$\Omega$
$r_{DS(ON)}$	$V_{GS}=1.8V, I_D=150\text{mA}$			0.8	$\Omega$

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>

CMLDM8005

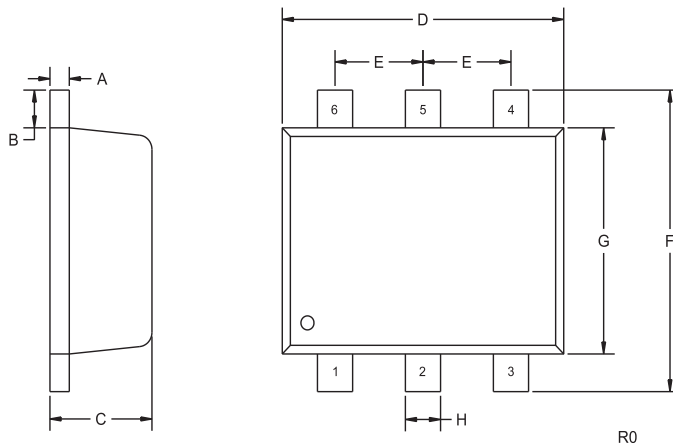
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**ELECTRICAL CHARACTERISTICS PER TRANSISTOR - Continued:** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	UNITS
$g_{FS}$	$V_{DS}=10\text{V}, I_D=200\text{mA}$	0.2		S
$C_{rSS}$	$V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$		25	pF
$C_{iss}$	$V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$		100	pF
$C_{oss}$	$V_{DS}=16\text{V}, V_{GS}=0, f=1.0\text{MHz}$		21	pF
$Q_{g(tot)}$	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=200\text{mA}$		1.2	nC
$Q_{gs}$	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=200\text{mA}$		0.24	nC
$Q_{gd}$	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=200\text{mA}$		0.36	nC
$t_{on}$	$V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=200\text{mA}, R_G=10\Omega$		38	ns
$t_{off}$	$V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=200\text{mA}, R_G=10\Omega$		48	ns

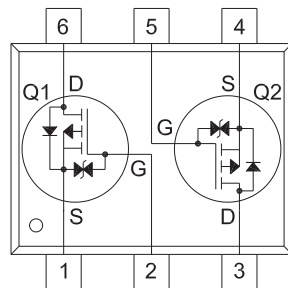
**SOT-563 CASE - MECHANICAL OUTLINE**



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

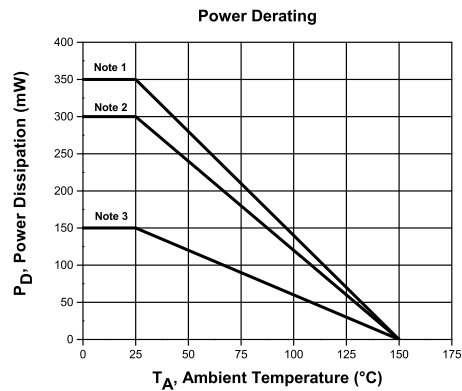
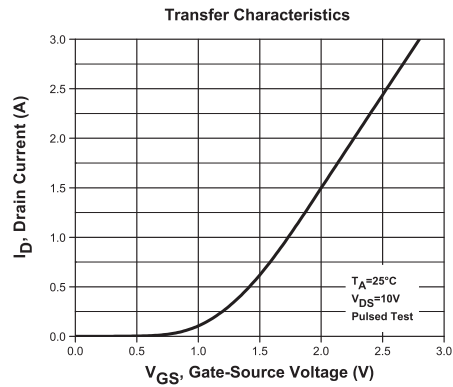
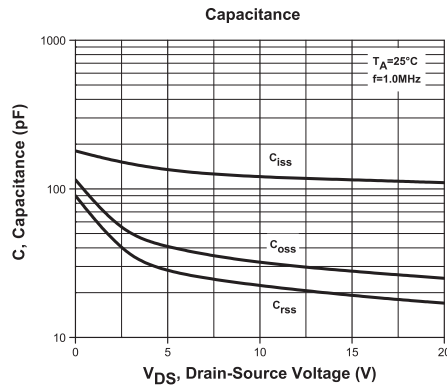
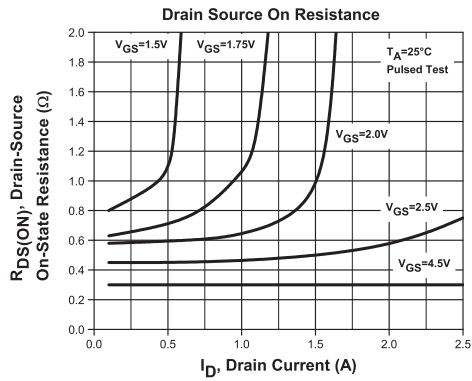
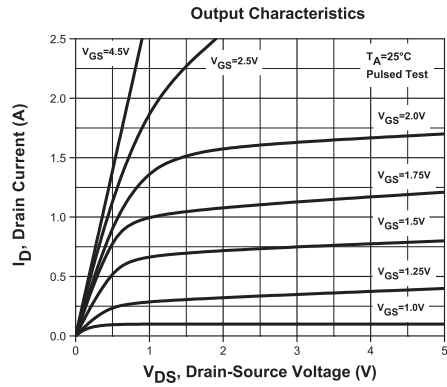
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**TYPICAL ELECTRICAL CHARACTERISTICS**



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