

CMLDM8002A  
 CMLDM8002AG\*  
 CMLDM8002AJ

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

**PICOmini™**



**SOT-563 CASE**

\* Device is *Halogen Free* by design



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

**DESCRIPTION:**

These CENTRAL SEMICONDUCTOR devices are dual chip Enhancement-mode P-Channel Field Effect Transistors, manufactured by the P-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications. The CMLDM8002A utilizes the USA pinout configuration, while the CMLDM8002AJ, utilizing the Japanese pinout configuration, is available as a special order. These special Dual Transistor devices offer Low  $r_{DS(on)}$  and Low  $V_{DS(on)}$ .

**MARKING CODES: CMLDM8002A: C08  
 CMLDM8002AG\*: CG8  
 CMLDM8002AJ: CJ8**

**APPLICATIONS:**

- Load/Power Switches
- Power Supply Converter Circuits
- Battery Powered Portable Equipment

**FEATURES:**

- Dual Chip Device
- Low  $r_{DS(on)}$
- Low  $V_{DS(on)}$
- Low Threshold Voltage
- Fast Switching
- Logic Level Compatible
- Small SOT-563 package

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$ )

Drain-Source Voltage	$V_{DS}$	50	V
Drain-Gate Voltage	$V_{DG}$	50	V
Gate-Source Voltage	$V_{GS}$	20	V
Continuous Drain Current	$I_D$	280	mA
Continuous Source Current (Body Diode)	$I_S$	280	mA
Maximum Pulsed Drain Current	$I_{DM}$	1.5	A
Maximum Pulsed Source Current	$I_{SM}$	1.5	A
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	$^\circ\text{C}$
Thermal Resistance	$\theta_{JA}$	357	$^\circ\text{C/W}$

**SYMBOL**

SYMBOL		UNITS
$V_{DS}$	50	V
$V_{DG}$	50	V
$V_{GS}$	20	V
$I_D$	280	mA
$I_S$	280	mA
$I_{DM}$	1.5	A
$I_{SM}$	1.5	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	MAX	UNITS
$I_{GSSF}, I_{GSSR}$	$V_{GS}=20\text{V}, V_{DS}=0$		100	nA
$I_{DSS}$	$V_{DS}=50\text{V}, V_{GS}=0$		1.0	$\mu\text{A}$
$I_{DSS}$	$V_{DS}=50\text{V}, V_{GS}=0, T_J=125^\circ\text{C}$		500	$\mu\text{A}$
$I_{D(ON)}$	$V_{GS}=10\text{V}, V_{DS}=10\text{V}$	500		mA
$BV_{DSS}$	$V_{GS}=0, I_D=10\mu\text{A}$	50		V
$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	1.0	2.5	V

- 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 (18-January 2010)

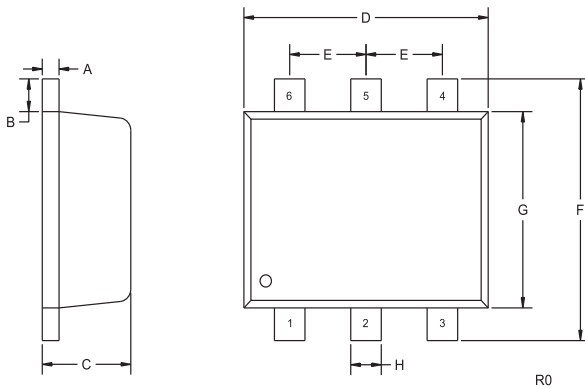
**CMLDM8002A**  
**CMLDM8002AG\***  
**CMLDM8002AJ**  
  
**SURFACE MOUNT**  
**DUAL P-CHANNEL**  
**ENHANCEMENT-MODE**  
**SILICON MOSFET**



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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$V_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$		1.5	V
$V_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}$		0.15	V
$V_{SD}$	$V_{GS}=0, I_S=115\text{mA}$		1.3	V
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$		2.5	$\Omega$
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}, T_J=125^\circ\text{C}$		4.0	$\Omega$
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}$		3.0	$\Omega$
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}, T_J=125^\circ\text{C}$		5.0	$\Omega$
gFS	$V_{DS}=10\text{V}, I_D=200\text{mA}$	200		mS
$C_{rss}$	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$		7.0	pF
$C_{iss}$	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$		70	pF
$C_{oss}$	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$		15	pF
$t_{on} / t_{off}$	$V_{DD}=30\text{V}, V_{GS}=10\text{V}, I_D=200\text{mA}$ $R_G=25\Omega, R_L=150\Omega$		20	ns

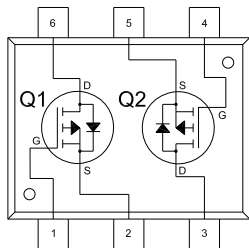
**SOT-563 CASE - MECHANICAL OUTLINE**



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)

**CMLDM8002A (USA Pinout)**  
**CMLDM8002AG\***



**LEAD CODE:**

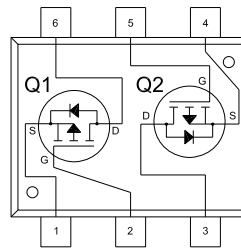
- 1) Gate Q1
- 2) Source Q1
- 3) Drain Q2
- 4) Gate Q2
- 5) Source Q2
- 6) Drain Q1

**MARKING CODES:**

**CMLDM8002A: C08**  
**CMLDM8002AG\*: CG8**

\* Device is *Halogen Free* by design

**CMLDM8002AJ (Japanese Pinout)**



**LEAD CODE:**

- 1) Gate Q1
- 2) Source Q1
- 3) Drain Q2
- 4) Gate Q2
- 5) Source Q2
- 6) Drain Q1

**MARKING CODE: CJ8**

R3 (18-January 2010)