

CMLDM8002A
CMLDM8002AG*
CMLDM8002AJ

SURFACE MOUNT SILICON
DUAL P-CHANNEL
ENHANCEMENT-MODE
MOSFETS



SOT-563 CASE

* Device is **Halogen Free** by design



www.centrasemi.com

DESCRIPTION:

These CENTRAL SEMICONDUCTOR devices are dual chip P-Channel enhancement-mode MOSFETs, 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
Drain-Gate Voltage
Gate-Source Voltage
Continuous Drain Current
Continuous Source Current (Body Diode)
Maximum Pulsed Drain Current
Maximum Pulsed Source Current
Power Dissipation (Note 1)
Power Dissipation (Note 2)
Power Dissipation (Note 3)
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL

V_{DS}	50
V_{DG}	50
V_{GS}	20
I_D	280
I_S	280
I_{DM}	1.5
I_{SM}	1.5
P_D	350
P_D	300
P_D	150
T_J, T_{stg}	-65 to +150
Θ_{JA}	357

UNITS

V
V
V
mA
mA
A
A
mW
mW
mW
$^\circ\text{C}$
$^\circ\text{C/W}$

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	μA
I_{DSS}	$V_{DS}=50\text{V}, V_{GS}=0, T_J=125^\circ\text{C}$		500	μA
$I_{D(ON)}$	$V_{GS}=10\text{V}, V_{DS}=10\text{V}$	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
$V_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$		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

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

R7 (8-June 2015)

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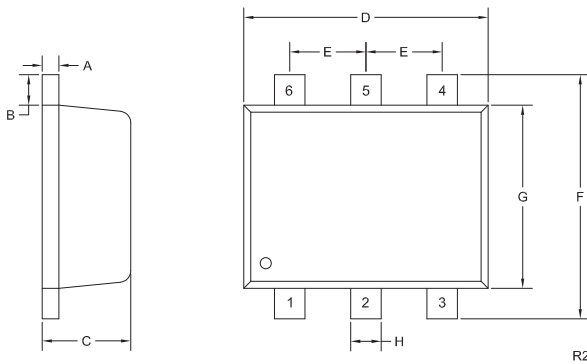
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ELECTRICAL CHARACTERISTICS PER TRANSISTOR - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$r_{DS(ON)}$	$V_{GS}=10\text{V}$, $I_D=500\text{mA}$			2.5	Ω
$r_{DS(ON)}$	$V_{GS}=10\text{V}$, $I_D=500\text{mA}$, $T_J=125^\circ\text{C}$			4.0	Ω
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}$, $I_D=50\text{mA}$			3.0	Ω
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}$, $I_D=50\text{mA}$, $T_J=125^\circ\text{C}$			5.0	Ω
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
$Q_{g(tot)}$	$V_{DS}=25\text{V}$, $V_{GS}=4.5\text{V}$, $I_D=100\text{mA}$		0.72		nC
Q_{gs}	$V_{DS}=25\text{V}$, $V_{GS}=4.5\text{V}$, $I_D=100\text{mA}$		0.25		nC
Q_{gd}	$V_{DS}=25\text{V}$, $V_{GS}=4.5\text{V}$, $I_D=100\text{mA}$		0.16		nC
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

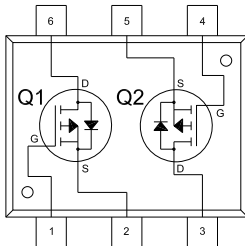
SOT-563 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	MIN	MAX	MIN	MAX
A	0.0027	0.007	0.07	0.18
B		0.008		0.20
C	0.017	0.024	0.45	0.60
D	0.059	0.067	1.50	1.70
E		0.020		0.50
F	0.059	0.067	1.50	1.70
G	0.043	0.051	1.10	1.30
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R2)

**CMLDM8002A (USA Pinout)
CMLDM8002AG***



LEAD CODE:

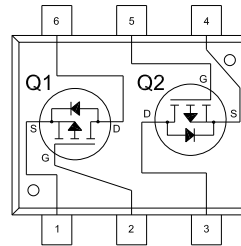
- 1) Gate Q1
- 2) Source Q1
- 3) Drain Q2
- 4) Gate Q2
- 5) Source Q2
- 6) Drain Q1

MARKING CODES:

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CMLDM8002AJ (Japanese Pinout)



LEAD CODE:

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

MARKING CODE: CJ8

R7 (8-June 2015)

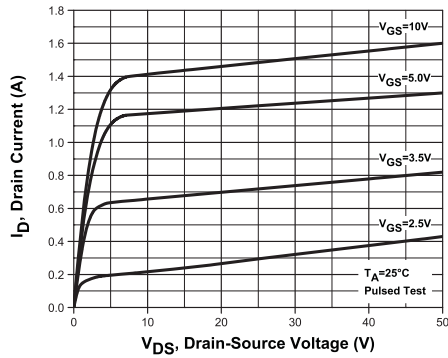
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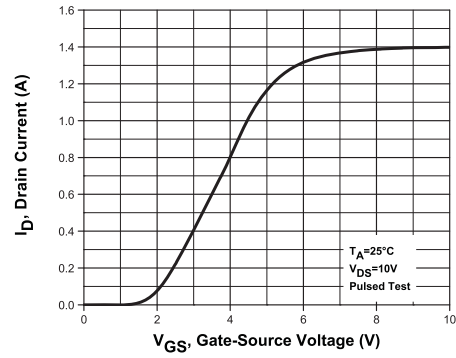


TYPICAL ELECTRICAL CHARACTERISTICS

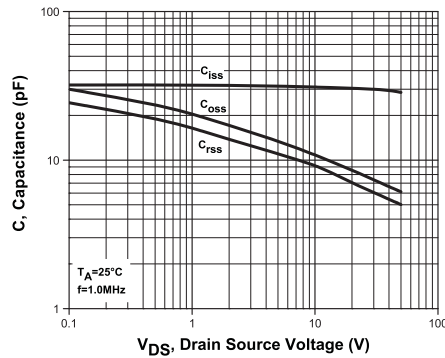
Output Characteristics



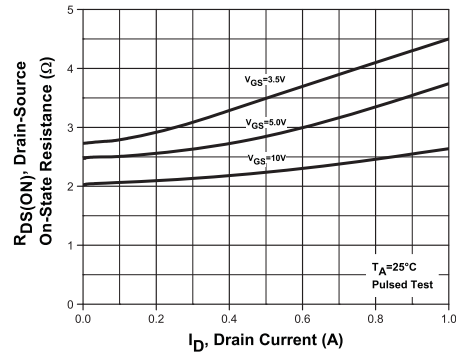
Transfer Characteristics



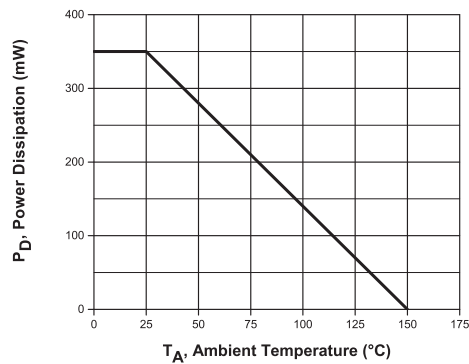
Capacitance



Drain Source On Resistance



Power Derating



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SERVICES

- Bonded Inventory
- Custom Electrical Screening
- Custom Electrical Characteristic Curves
- SPICE Models
- Custom Packaging
- Package Base Options
- Custom Device Development/ Multi Discrete Modules (MDM™)
- Bare Die Available for Hybrid Applications

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