

**CMPDM8002A****SURFACE MOUNT SILICON  
P-CHANNEL  
ENHANCEMENT-MODE  
MOSFET****SOT-23 CASE**[www.centrasemi.com](http://www.centrasemi.com)**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMPDM8002A is a P-Channel enhancement-mode MOSFET manufactured by the P-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications.

**MARKING CODE: C802A****FEATURES:**

- Low  $r_{DS(ON)}$
- Low  $V_{DS(ON)}$
- Low threshold voltage
- Fast switching
- Logic level compatibility

**APPLICATIONS:**

- Load/Power switches
- Power supply converter circuits
- Battery powered portable equipment

**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
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
$T_J, T_{stg}$	-65 to +150
$\theta_{JA}$	357

**UNITS**

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

**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$  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
$V_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$		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

R2 (6-February 2015)

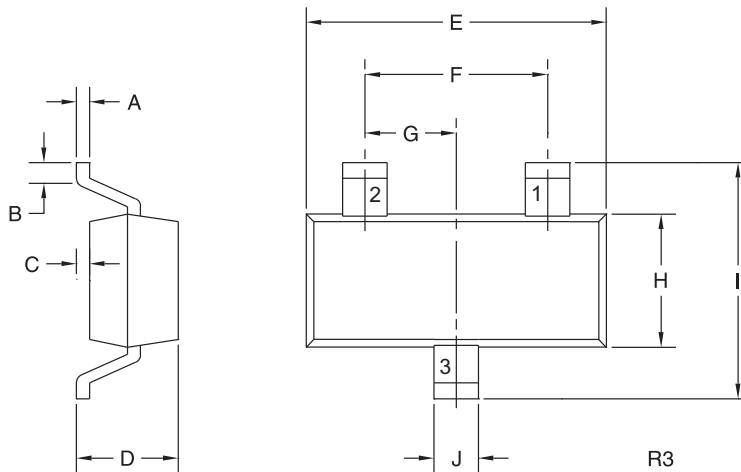
**CMPDM8002A**  
**SURFACE MOUNT SILICON**  
**P-CHANNEL**  
**ENHANCEMENT-MODE**  
**MOSFET**



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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$C_{rss}$	$V_{DS}=25\text{V}$ , $V_{GS}=0$ , $f=1.0\text{MHz}$			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
$Q_{g(\text{tot})}$	$V_{DS}=25\text{V}$ , $V_{GS}=4.5\text{V}$ , $I_D=100\text{mA}$		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-23 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

- 1) Gate
- 2) Source
- 3) Drain

**MARKING CODE: C802A**

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.003	0.007	0.08	0.18
B	0.006	-	0.15	-
C	-	0.005	-	0.13
D	0.035	0.043	0.89	1.09
E	0.110	0.120	2.80	3.05
F	0.075		1.90	
G	0.037		0.95	
H	0.047	0.055	1.19	1.40
I	0.083	0.098	2.10	2.49
J	0.014	0.020	0.35	0.50

SOT-23 (REV: R3)

R2 (6-February 2015)

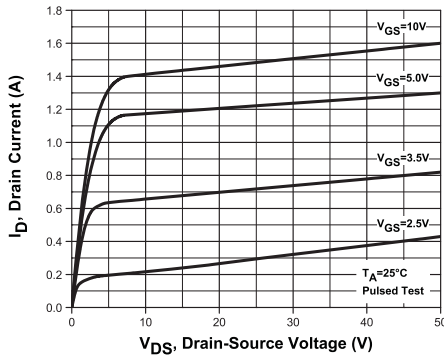
CMPDM8002A

SURFACE MOUNT SILICON  
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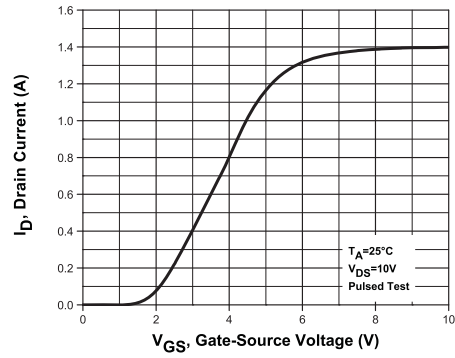


### TYPICAL ELECTRICAL CHARACTERISTICS

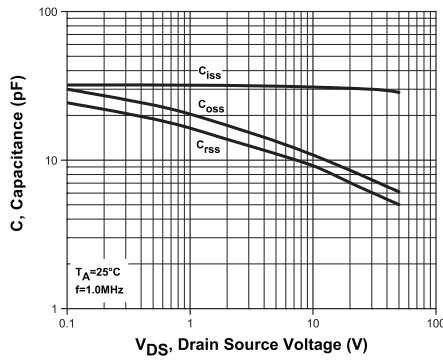
Output Characteristics



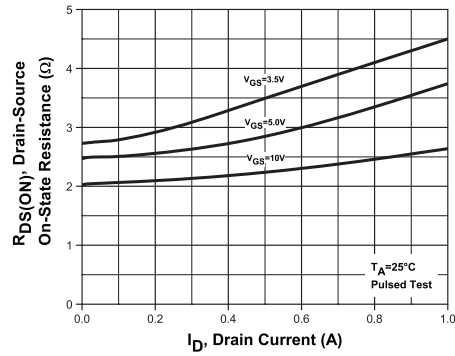
Transfer Characteristics



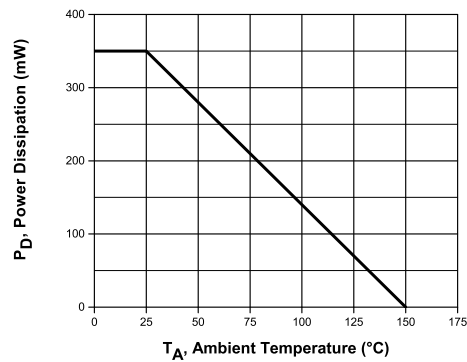
Capacitance



Drain Source On Resistance



Power Derating



R2 (6-February 2015)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centrasemi.com](http://www.centrasemi.com)

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

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