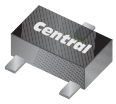
CMUDM8005

SURFACE MOUNT SILICON P-CHANNEL ENHANCEMENT-MODE MOSFET



SOT-523 CASE

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMUDM8005 is an enhancement-mode P-Channel MOSFET, manufactured by the P-Channel DMOS process, designed for high speed pulsed amplifier and driver applications. This MOSFET offers low $r_{DS(ON)}$ and low theshold voltage.

MARKING CODE: 5C8

APPLICATIONS:

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

FEATURES:

- ESD protection up to 1800V (Human Body Model)
- 300mW power dissipation
- Very low $r_{DS(ON)}$
- Low threshold voltage
- Logic level compatible
- Small, SOT-523 surface mount package

MAXIMUM RATINGS: (T_A=25°C)	**SYMBOL**		**UNITS**
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	8.0	V
Continuous Drain Current (Steady State - Note 1)	I_D	650	mA
Continuous Source Current (Body Diode)	I_S	250	mA
Maximum Pulsed Drain Current	I_{DM}	1.0	A
Power Dissipation (Note 1)	P_D	300	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	**TEST CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNITS**
I_{GSSF}, I_{GSSR}	V_{GS}=4.5V, V_{DS}=0			10	μA
I_{DSS}	V_{DS}=16V, V_{GS}=0			100	nA
BV_{DSS}	V_{GS}=0, I_D=250μA	20			V
$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.5		1.0	V
V_{SD}	V_{GS}=0, I_S=250mA			1.1	V
$r_{DS(ON)}$	V_{GS}=4.5V, I_D=350mA		0.25	0.36	Ω
$r_{DS(ON)}$	V_{GS}=2.5V, I_D=300mA		0.37	0.5	Ω
$r_{DS(ON)}$	V_{GS}=1.8V, I_D=150mA			0.8	Ω
g_{FS}	V_{DS}=10V, I_D=200mA	0.2			S
C_{rss}	V_{DS}=16V, V_{GS}=0, f=1.0MHz		25		pF
C_{iss}	V_{DS}=16V, V_{GS}=0, f=1.0MHz		100		pF
C_{oss}	V_{DS}=16V, V_{GS}=0, f=1.0MHz		21		pF

Notes: (1) Mounted on 2 inch square FR-4 PCB with copper mounting pad area of 1.13in^2

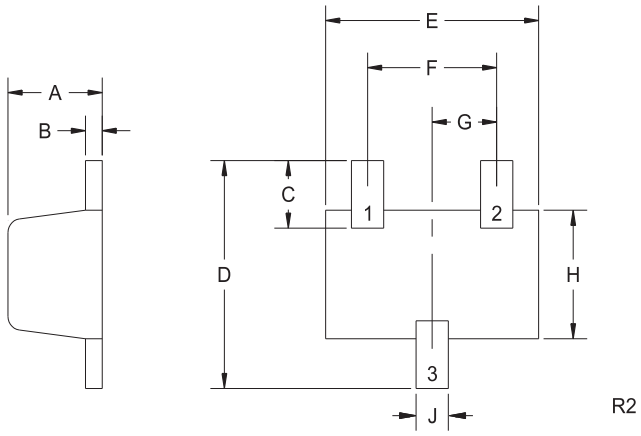
CMUDM8005

SURFACE MOUNT SILICON P-CHANNEL ENHANCEMENT-MODE MOSFET

ELECTRICAL CHARACTERISTICS - Continued: (T_A=25°C unless otherwise noted)

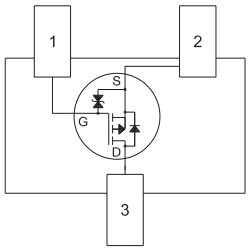
SYMBOL	TEST CONDITIONS	MIN	TYP	UNITS
$Q_{g(tot)}$	V_{DS}=10V, V_{GS}=4.5V, I_D=200mA		1.2	nC
Q_{gs}	V_{DS}=10V, V_{GS}=4.5V, I_D=200mA		0.24	nC
Q_{gd}	V_{DS}=10V, V_{GS}=4.5V, I_D=200mA		0.36	nC
t_{on}	V_{DD}=10V, V_{GS}=4.5V, I_D=200mA, R_G=10Ω		38	ns
t_{off}	V_{DD}=10V, V_{GS}=4.5V, I_D=200mA, R_G=10Ω		48	ns

SOT-523 CASE - MECHANICAL OUTLINE



R2

PIN CONFIGURATION
(Bottom View)



LEAD CODE:
1) Gate
2) Source
3) Drain

MARKING CODE: 5C8

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.023	0.031	0.58	0.78
B	0.002	0.008	0.04	0.20
C	0.013	0.021	0.34	0.54
D	0.059	0.067	1.50	1.70
E	0.059	0.067	1.50	1.70
F	0.035	0.043	0.90	1.10
G	0.020		0.50	
H	0.031	0.039	0.78	0.98
J	0.010	0.014	0.25	0.35

SOT-523 (REV: R2)

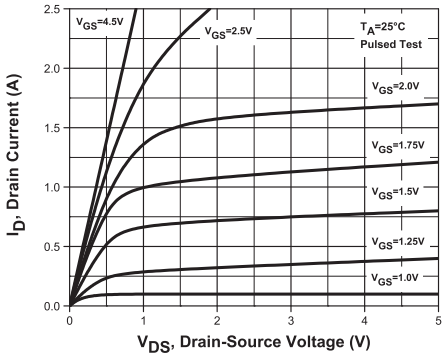
R4 (5-June 2013)

CMUDM8005

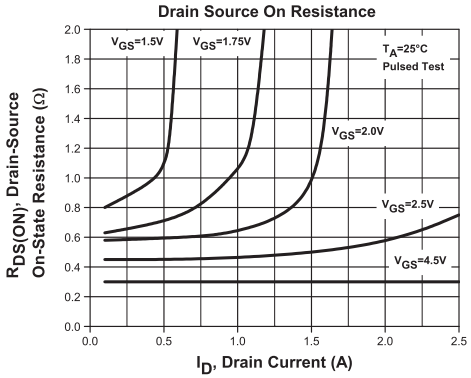
SURFACE MOUNT SILICON P-CHANNEL ENHANCEMENT-MODE MOSFET

TYPICAL ELECTRICAL CHARACTERISTICS

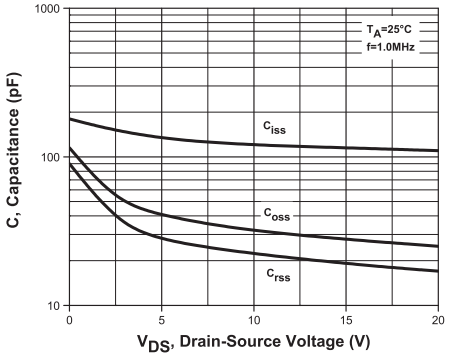
Output Characteristics



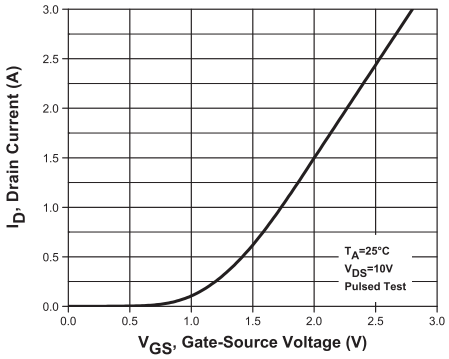
Drain Source On Resistance



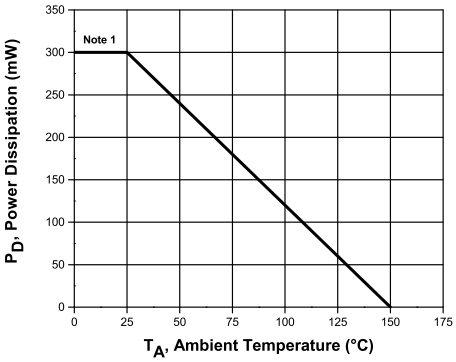
Capacitance



Transfer Characteristics



Power Derating



R4 (5-June 2013)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES

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

DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2nd 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

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).

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.centralsemi.com

Worldwide Field Representatives:
www.centralsemi.com/wwreps

Worldwide Distributors:
www.centralsemi.com/wwdistributors

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: www.centralsemi.com/terms