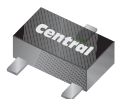


**CMUDM8005**  
**SURFACE MOUNT SILICON**  
**P-CHANNEL**  
**ENHANCEMENT-MODE**  
**MOSFET**



**SOT-523 CASE**

**APPLICATIONS:**

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

**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)                       |  |
| Operating and Storage Junction Temperature       |  |



[www.centra-semi.com](http://www.centra-semi.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 threshold voltage.

**MARKING CODE: 5C8**

**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

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

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

| SYMBOL              | TEST CONDITIONS                                | MIN | TYP  | MAX  | UNITS         |
|---------------------|------------------------------------------------|-----|------|------|---------------|
| $I_{GSS}, I_{GSSR}$ | $V_{GS}=4.5\text{V}, V_{DS}=0$                 |     |      | 10   | $\mu\text{A}$ |
| $I_{DSS}$           | $V_{DS}=16\text{V}, V_{GS}=0$                  |     |      | 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             |
| $r_{DS(ON)}$        | $V_{GS}=4.5\text{V}, I_D=350\text{mA}$         |     | 0.25 | 0.36 | $\Omega$      |
| $r_{DS(ON)}$        | $V_{GS}=2.5\text{V}, I_D=300\text{mA}$         |     | 0.37 | 0.5  | $\Omega$      |
| $r_{DS(ON)}$        | $V_{GS}=1.8\text{V}, I_D=150\text{mA}$         |     |      | 0.8  | $\Omega$      |
| $g_{FS}$            | $V_{DS}=10\text{V}, I_D=200\text{mA}$          | 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            |

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

R4 (5-June 2013)

CMUDM8005

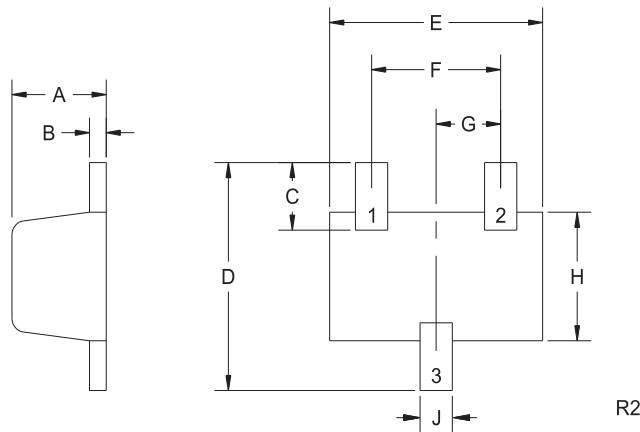
**SURFACE MOUNT SILICON  
P-CHANNEL  
ENHANCEMENT-MODE  
MOSFET**



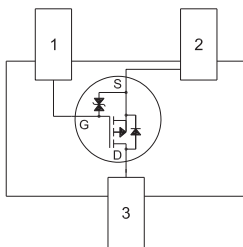
**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

| SYMBOL              | TEST CONDITIONS                                                                  | MIN | TYP  | UNITS |
|---------------------|----------------------------------------------------------------------------------|-----|------|-------|
| $Q_{g(\text{tot})}$ | $V_{DS}=10\text{V}$ , $V_{GS}=4.5\text{V}$ , $I_D=200\text{mA}$                  |     | 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    |
| $t_{\text{on}}$     | $V_{DD}=10\text{V}$ , $V_{GS}=4.5\text{V}$ , $I_D=200\text{mA}$ , $R_G=10\Omega$ |     | 38   | ns    |
| $t_{\text{off}}$    | $V_{DD}=10\text{V}$ , $V_{GS}=4.5\text{V}$ , $I_D=200\text{mA}$ , $R_G=10\Omega$ |     | 48   | ns    |

**SOT-523 CASE - MECHANICAL OUTLINE**



**PIN CONFIGURATION  
(Bottom View)**



**LEAD CODE:**

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

**MARKING CODE: 5C8**

**DIMENSIONS**

| SYMBOL | INCHES |       | MILLIMETERS |      |
|--------|--------|-------|-------------|------|
|        | 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 |

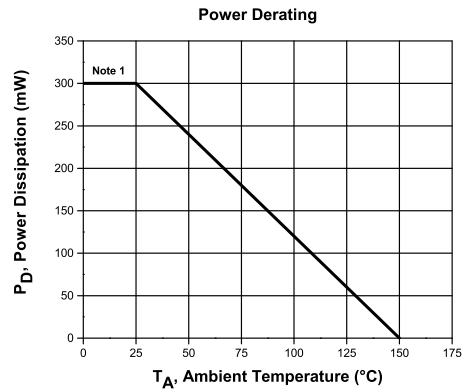
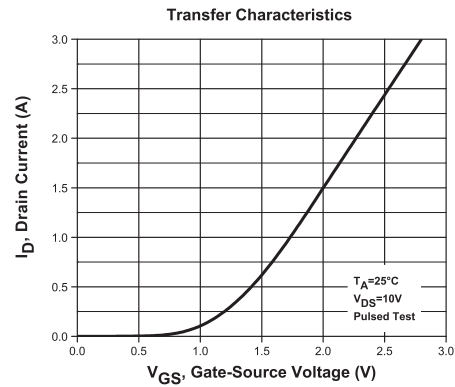
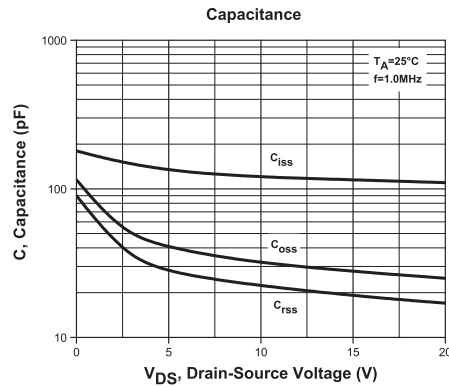
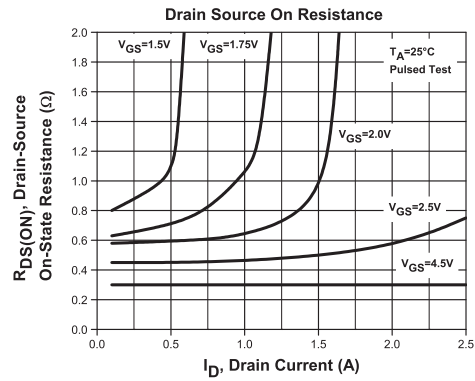
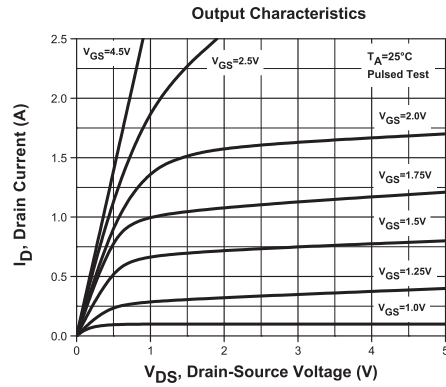
SOT-523 (REV: R2)

R4 (5-June 2013)

**CMUDM8005**  
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**MOSFET**



**TYPICAL ELECTRICAL CHARACTERISTICS**



R4 (5-June 2013)

## 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

---

### 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

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