

## Dual N-Channel Enhancement Mode MOSFET

## General Description

The CMS9926A uses advanced trench technology to provide excellent  $R_{DS(ON)}$ . This device is suitable for use as a unidirectional or bi-directional load switch.

## Features

- $R_{DS(ON)}=25m\Omega$  @  $V_{GS}=4.5V$
- $R_{DS(ON)}=30m\Omega$  @  $V_{GS}=2.5V$
- Dual MOSFET in surface mount package.
- High Density Cell Design For Ultra Low On-Resistance

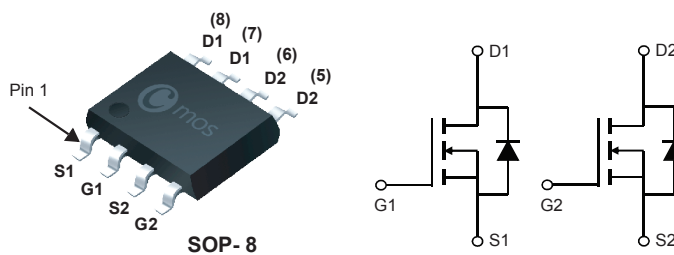
## Product Summary

| BVDSS | RDSON        | ID   |
|-------|--------------|------|
| 20V   | 25m $\Omega$ | 6.5A |

## Applications

- DC/DC Converter
- Load Switch
- Battery protection
- Power management

## SOP- 8 Pin Configuration



| Type     | Package | Marking  |
|----------|---------|----------|
| CMS9926A | SOP- 8  | CMS9926A |

## Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted)

| Symbol               | Parameter                            | Rating     | Units      |
|----------------------|--------------------------------------|------------|------------|
| $V_{DS}$             | Drain-Source Voltage                 | 20         | V          |
| $V_{GS}$             | Gate-Source Voltage                  | $\pm 10$   | V          |
| $I_D$                | Continuous Drain Current             | 6.5        | A          |
| $I_{DM}$             | Pulsed Drain Current                 | 30         | A          |
| $P_D@T_A=25^\circ C$ | Total Power Dissipation              | 2          | W          |
| $T_{STG}$            | Storage Temperature Range            | -55 to 150 | $^\circ C$ |
| $T_J$                | Operating Junction Temperature Range | -55 to 150 | $^\circ C$ |

## Thermal Data

| Symbol          | Parameter                                                         | Typ. | Max. | Unit         |
|-----------------|-------------------------------------------------------------------|------|------|--------------|
| $R_{\theta JA}$ | Thermal Resistance, Junction-to-Ambient ( $t \leq 10\text{sec}$ ) | ---  | 62.5 | $^\circ C/W$ |

## Dual N-Channel Enhancement Mode MOSFET

Electrical Characteristics ( $T_J=25^{\circ}\text{C}$  , unless otherwise noted)

| Symbol       | Parameter                         | Conditions                                               | Min. | Typ. | Max.      | Unit      |
|--------------|-----------------------------------|----------------------------------------------------------|------|------|-----------|-----------|
| $BV_{DSS}$   | Drain-Source Breakdown Voltage    | $V_{GS}=0V$ , $I_D=250\mu A$                             | 20   | ---  | ---       | V         |
| $R_{DS(ON)}$ | Static Drain-Source On-Resistance | $V_{GS}=4.5V$ , $I_D=6A$                                 | ---  | 20   | 25        | $m\Omega$ |
|              |                                   | $V_{GS}=2.5V$ , $I_D=5.2A$                               | ---  | 25   | 30        |           |
| $V_{GS(th)}$ | Gate Threshold Voltage            | $V_{GS}=V_{DS}$ , $I_D=250\mu A$                         | 0.5  | ---  | 1.0       | V         |
| $I_{DSS}$    | Drain-Source Leakage Current      | $V_{DS}=16V$ , $V_{GS}=0V$                               | ---  | ---  | 1         | $\mu A$   |
| $I_{GSS}$    | Gate-Source Leakage Current       | $V_{GS} = \pm 10V$ , $V_{DS}=0V$                         | ---  | ---  | $\pm 100$ | nA        |
| $g_{fs}$     | Forward Transconductance          | $V_{DS}=15V$ , $I_D=6A$                                  | ---  | 22   | ---       | S         |
| $Q_g$        | Total Gate Charge                 | $V_{DS}=10V$ , $V_{GS}=4.5V$ , $I_D=6A$                  | ---  | 13   | 20        | nC        |
| $Q_{gs}$     | Gate-Source Charge                |                                                          | ---  | 3    | ---       |           |
| $Q_{gd}$     | Gate-Drain Charge                 |                                                          | ---  | 3.3  | ---       |           |
| $T_{d(on)}$  | Turn-On Delay Time                | $V_{DD}=10V$ , $V_{GS}=4.5V$<br>$R_G=6\Omega$ , $I_D=1A$ | ---  | 25   | ---       | ns        |
| $T_r$        | Rise Time                         |                                                          | ---  | 40   | ---       |           |
| $T_{d(off)}$ | Turn-Off Delay Time               |                                                          | ---  | 50   | ---       |           |
| $T_f$        | Fall Time                         |                                                          | ---  | 20   | ---       |           |
| $C_{iss}$    | Input Capacitance                 | $V_{DS}=10V$ , $V_{GS}=0V$ , $f=1MHz$                    | ---  | 640  | ---       | pF        |
| $C_{oss}$    | Output Capacitance                |                                                          | ---  | 140  | ---       |           |
| $C_{rss}$    | Reverse Transfer Capacitance      |                                                          | ---  | 80   | ---       |           |

## Diode Characteristics

| Symbol   | Parameter             | Conditions               | Min. | Typ. | Max. | Unit |
|----------|-----------------------|--------------------------|------|------|------|------|
| $V_{SD}$ | Diode Forward Voltage | $V_{GS}=0V$ , $I_S=1.7A$ | ---  | ---  | 1.2  | V    |

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