

### General Description

The CMS5006B uses advanced trench technology to provide excellent RDS(ON). This device is ideal for load switch and battery protection applications.

### Features

- P-Channel MOSFET
- Low ON-resistance
- Surface Mount Package
- RoHS Compliant

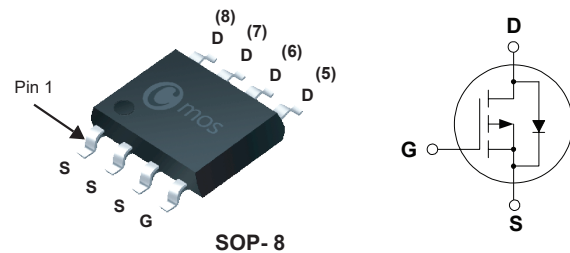
### Product Summary

BVDSS	RDSON	ID
-60V	70mΩ	-4A

### Applications

- Load switch
- Power management
- Battery protection

### SOP-8 Pin Configuration



Type	Package	Marking
CMS5006B	SOP- 8	CMS5006B

### Absolute Maximum Ratings (TA=25 °C Unless Otherwise Noted)

Symbol	Parameter	Rating	Units
V <sub>DS</sub>	Drain-Source Voltage	-60	V
V <sub>GS</sub>	Gate-Source Voltage	±20	V
I <sub>D</sub>	Continuous Drain Current	-4	A
I <sub>DM</sub>	Pulsed Drain Current	-12	A
EAS	Single Pulse Avalanche Energy	110	mJ
P <sub>D@T<sub>C</sub>=25°C</sub>	Total Power Dissipation	1.5	W
T <sub>STG</sub>	Storage Temperature Range	-55 to 150	°C
T <sub>J</sub>	Operating Junction Temperature Range	-55 to 150	°C

### Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R <sub>θJA</sub>	Thermal Resistance, Junction-to-Ambient(PCB mounted)	---	85	°C/W

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V, I_D=-6A$	---	---	70	m $\Omega$
		$V_{GS}=-4.5V, I_D=-4A$	---	---	79	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D = -250\mu A$	-1	---	-3	V
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS}=-50V, V_{GS}=0V$	---	---	-1	$\mu A$
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS} = \pm 20V, V_{DS}=0V$	---	---	$\pm 100$	nA
$g_{fs}$	Forward Transconductance	$V_{DS}=-10V, I_D=-3A$	---	12	---	S
$R_g$	Gate Resistance	$V_{DS}=0V, V_{GS}=0V, f=1MHz$	---	43	---	$\Omega$
$Q_g$	Total Gate Charge	$V_{DS}=-30V, V_{GS}=-10V, I_D=-3A$	---	16.5	---	nC
$Q_{gs}$	Gate-Source Charge		---	2.9	---	
$Q_{gd}$	Gate-Drain Charge		---	3.7	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=-30V, V_{GS}=-10V$ $R_{GEN}=6\Omega, I_D=1A$	---	8.4	---	ns
$T_r$	Rise Time		---	29.7	---	
$T_{d(off)}$	Turn-Off Delay Time		---	51.8	---	
$T_f$	Fall Time		---	15.7	---	
$C_{iss}$	Input Capacitance	$V_{DS}=-25V, V_{GS}=0V, f=1MHz$	---	1600	---	pF
$C_{oss}$	Output Capacitance		---	71	---	
$C_{rss}$	Reverse Transfer Capacitance		---	43	---	

**Diode Characteristics**

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$V_{SD}$	Diode Forward Voltage	$V_{GS}=0V, I_{SD}=-5A$	---	---	-1.0	V

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