

General Description

The CMS1521 uses advanced technology to provide excellent $R_{DS(ON)}$. This device is suitable for use as a synchronous switch in PWM applications.

Features

- $R_{DS(ON)} \leq 4m\Omega$ @ $V_{GS}=10V$
- $R_{DS(ON)} \leq 5.2m\Omega$ @ $V_{GS}=4.5V$
- Surface mount package.
- RoHS Compliant

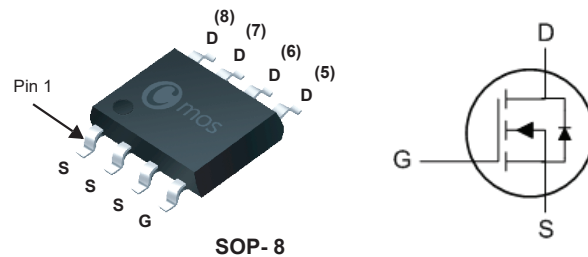
Product Summary

BVDSS	RDSON	ID
30V	4mΩ	20A

Applications

- DC/DC Converter
- Synchronous Rectifier
- Load Switch
- Battery protection

SOP-8 Pin Configuration



Type	Package	Marking
CMS1521	SOP- 8	CMS1521

Absolute Maximum Ratings ($T_A=25^\circ C$ Unless Otherwise Noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current	20	A
I_{DM}	Pulsed Drain Current	60	A
EAS	Single Pulse Avalanche Energy	220	mJ
P_D	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	---	50	$^\circ C/W$

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=15A$	---	---	4	m Ω
		$V_{GS}=4.5V, I_D=12A$	---	---	5.2	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=24V, V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V, I_D=10A$	---	28	---	S
Q_g	Total Gate Charge	$V_{DD}=15V, I_D=20A$ $V_{GS}=0$ to 4.5V	---	28	---	nC
Q_{gs}	Gate-Source Charge		---	12	---	
Q_{gd}	Gate-Drain Charge		---	6	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=15V, V_{GS}=4.5V, I_D=20A$ $R_G=1.6\Omega$	---	19	---	ns
T_r	Rise Time		---	10	---	
$T_{d(off)}$	Turn-Off Delay Time		---	25	---	
T_f	Fall Time		---	10	---	
C_{iss}	Input Capacitance	$V_{DS}=15V, V_{GS}=0V, f=1MHz$	---	4500	---	pF
C_{oss}	Output Capacitance		---	1200	---	
C_{riss}	Reverse Transfer Capacitance		---	88	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	20	A
I_{SM}	Pulsed Source Current		---	---	60	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_S=20A, T_J=25^{\circ}\text{C}$	---	---	1.2	V

Note :

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