

Dual N-Channel Enhancement Mode MOSFET

General Description

The CMS4812 uses advanced trench technology to provide excellent $R_{DS(ON)}$.

The two MOSFETs make a compact and efficient switch and synchronous rectifier combination for use in buck converters.

Features

- $R_{DS(ON)} \leq 23m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} \leq 30m\Omega @ V_{GS}=4.5V$
- Dual MOSFET in surface mount package
- High Density Cell Design For Ultra Low On Resistance

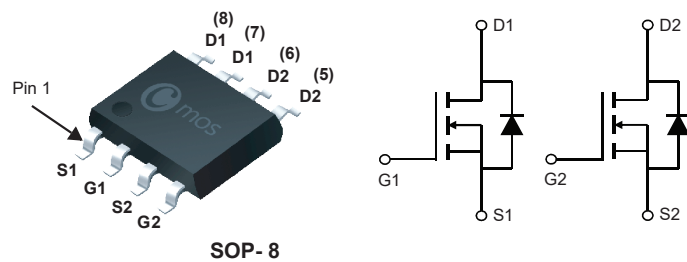
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
30V	23m Ω	6.9A

Applications

- DC/DC Converter
- Load Switch
- Portable Equipment
- Power Management in Note book

SOP-8 Pin Configuration



Type	Package	Marking
CMS4812	SOP- 8	CMS4812

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	6.9	A
I_{DM}	Pulsed Drain Current	21	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 ($t \leq 10s$)	---	62.5	$^\circ C/W$

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

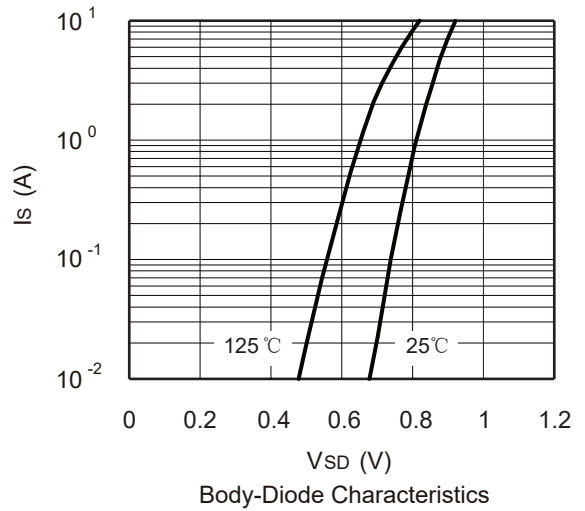
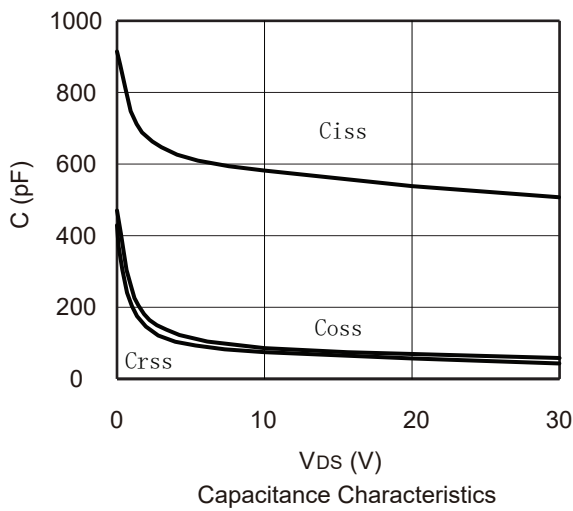
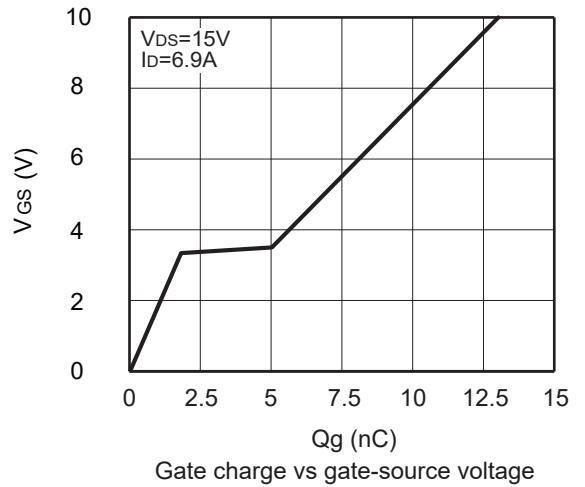
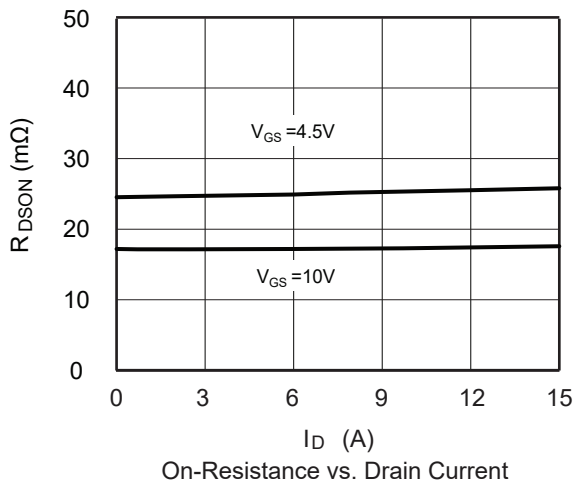
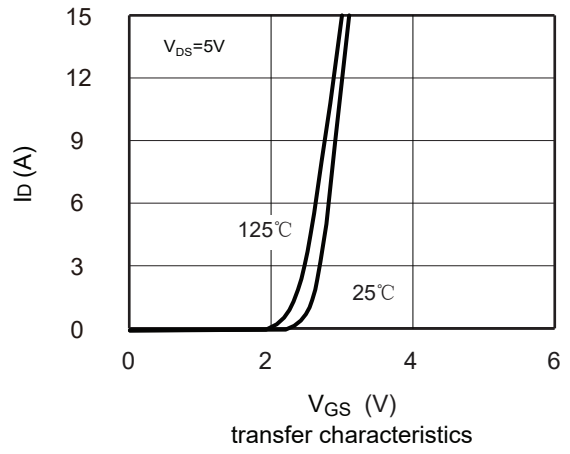
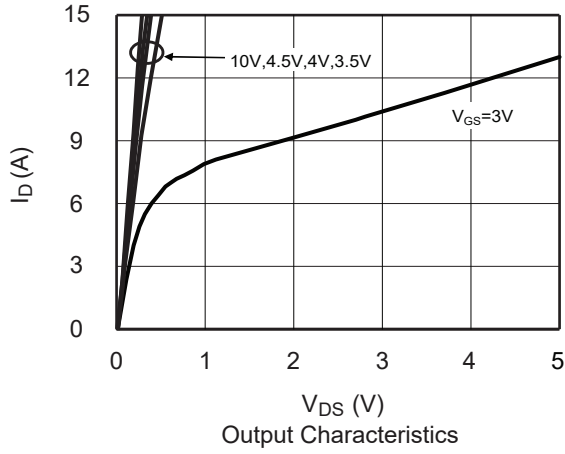
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=6.9A$	---	---	23	m Ω
		$V_{GS}=4.5V, I_D=5A$	---	---	30	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	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	$V_{DS}=4.5V, I_D=6.9A$	---	7	---	S
Q_g	Total Gate Charge	$V_{DS}=15V, V_{GS}=10V, I_D=6.9A$	---	13	---	nC
Q_{gs}	Gate-Source Charge		---	1.8	---	
Q_{gd}	Gate-Drain Charge		---	3.2	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=15V, V_{GS}=10V, R_L=2.2\Omega$ $R_{GEN}=3\Omega$	---	6	---	ns
T_r	Rise Time		---	4.8	---	
$T_{d(off)}$	Turn-Off Delay Time		---	28	---	
T_f	Fall Time		---	7	---	
C_{iss}	Input Capacitance	$V_{DS}=25V, V_{GS}=0V, f=1\text{MHz}$	---	550	---	pF
C_{oss}	Output Capacitance		---	60	---	
C_{rss}	Reverse Transfer Capacitance		---	50	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_S=1A$	---	---	1.1	V

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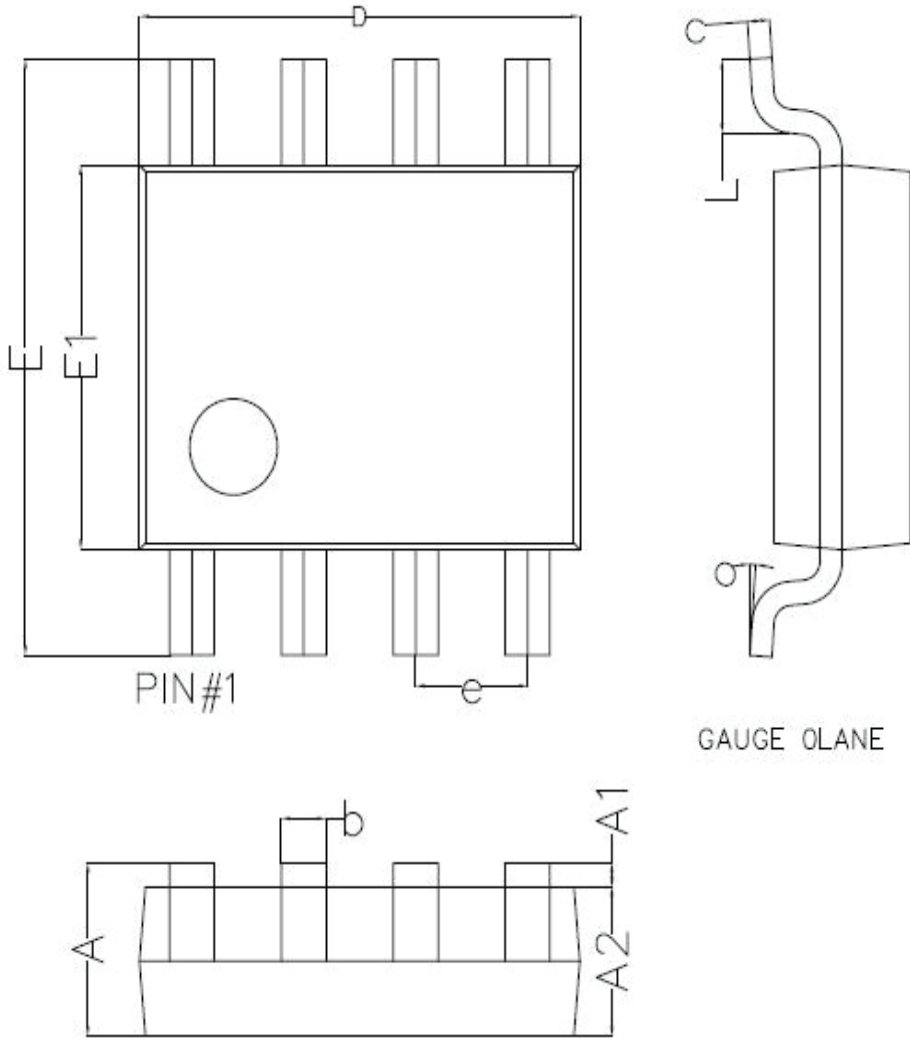
Typical Characteristics



Package Dimension

SOP-8

Unit :mm



Symbol	Dim in mm		
	Min	Nor	Max
A	1.35	1.55	1.75
A1	0.02	0.065	0.10
A2	1.35	1.45	1.55
b	0.33	0.42	0.51
c	0.17	0.21	0.25
D	4.80	4.90	5.00
e	1.270 (BSC)		
E	5.80	6.00	6.20
E1	3.80	3.90	4.00
L	0.4	0.835	1.27
θ	0°	4°	8°