CMS65N03

N-Channel Enhancement Mode MOSFET

General Description

The CMS65N03 uses advanced trench technology to provide excellent $R_{DS(ON)}$. This device is suitable for use as a synchronous switch in PWM applications.

Product Summary

BVDSS	RDSON	ID
30V	6.8mΩ	13A

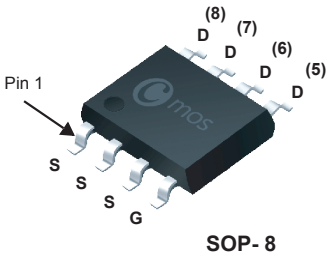
Applications

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

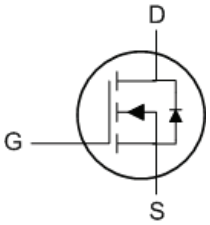
Features

- RDS(ON)≤6.8mΩ @ VGS=10V
- RDS(ON)≤12mΩ @ VGS=4.5V
- Surface mount package.
- RoHS Compliant

SOP-8 Pin Configuration



SOP- 8



Type	Package	Marking
CMS65N03	SOP- 8	CMS65N03

Absolute Maximum Ratings (T_A=25℃ 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	13	A
I_{DM}	Pulsed Drain Current	52	A
EAS	Single Pulse Avalanche Energy Note 1	120	mJ
P_D	Total Power Dissipation	2	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	---	50	℃/W

Electrical Characteristics (T_J=25℃ , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250μA	30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=12A	---	---	6.8	mΩ
		V_{GS}=4.5V , I_D=8A	---	---	12	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250μA	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=24V , V_{GS}=0V	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS} = ±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=5V , I_D=8A	---	18	---	S
Q_g	Total Gate Charge	V_{DD} =15V, I_D=16A V_{GS}=0 to 4.5V	---	15	---	nC
Q_{gs}	Gate-Source Charge		---	6.5	---	
Q_{gd}	Gate-Drain Charge		---	3.5	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=15V , V_{GS}=4.5V , I_D=16A R_G=1.6Ω	---	12.5	---	ns
T_r	Rise Time		---	6.5	---	
$T_{d(off)}$	Turn-Off Delay Time		---	15.5	---	
T_f	Fall Time		---	6.5	---	
C_{iss}	Input Capacitance	V_{DS}=10V , V_{GS}=0V , f=1MHz	---	2000	---	pF
C_{oss}	Output Capacitance		---	710	---	
C_{rss}	Reverse Transfer Capacitance		---	50	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	13	A
I_{SM}	Pulsed Source Current		---	---	40	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=12A , T_J=25℃	---	---	1.2	V

Note :

1.The test condition is V_{DD}=15V,V_{GS}=10V,L=0.5mH,I_{AS}=22A

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