CMS4013

P-Channel Enhancement Mode MOSFET

General Description

The CMS4013 uses advanced trench technology to provide excellent RDS(ON).This device is ideal for load switch and battery protection applications.

Product Summary

BVDSS	RDSON	ID
-40V	18mΩ	-13A

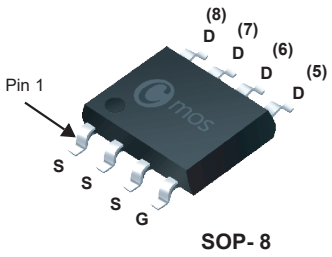
Applications

- Load switch
- Power management
- Battery protection

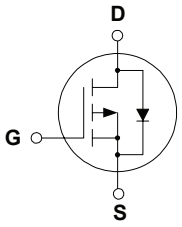
Features

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

SOP-8 Pin Configuration



SOP- 8



Type	Package	Marking
CMS4013	SOP- 8	CMS4013

Absolute Maximum Ratings (T_A=25 ℃ Unless Otherwise Noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-40	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current	-13	A
I_{DM}	Pulsed Drain Current	-39	A
P_D@T_A=25℃	Total Power Dissipation	2.7	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(PCB mounted)	---	47	℃/W

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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	-40	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V , I_D=-10A	---	---	18	mΩ
		V_{GS}=-4.5V , I_D=-8A	---	---	25	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D = -250μA	-1	---	-3	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-32V, 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=-10A	---	21	---	S
Q_g	Total Gate Charge	V_{DS}=-20V , V_{GS}=-4.5V , I_D=-7A	---	23	---	nC
Q_{gs}	Gate-Source Charge		---	10	---	
Q_{gd}	Gate-Drain Charge		---	8	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=-20V, V_{GS}=-10V , I_D =3.5A R_G =4.7Ω	---	44	---	ns
T_r	Rise Time		---	48	---	
$T_{d(off)}$	Turn-Off Delay Time		---	150	---	
T_f	Fall Time		---	20	---	
C_{iss}	Input Capacitance	V_{DS}=-25V , V_{GS}=0V , f=1MHz	---	950	---	pF
C_{oss}	Output Capacitance		---	270	---	
C_{rss}	Reverse Transfer Capacitance		---	180	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_{SD}=-8A	---	---	-1	V

Notes:

This product has been designed and qualified for the counsumer market.
Cmos assumes no liability for customers' product design or applications.
Cmos reserver the right to improve product design ,functions and reliability wihtout notice.