CMS60P06

-60V, 19mΩ typ., -10A P-Channel MOSFET

General Description

The CMS60P06 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

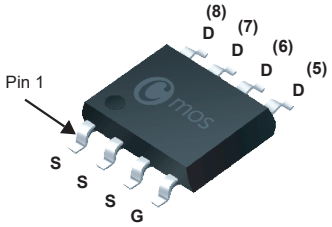
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
-60V	21mΩ	-10A

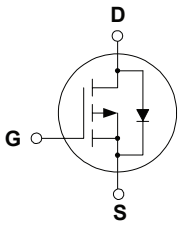
Applications

- Load switch
- Power management
- Battery protection

SOP-8 Pin Configuration



SOP- 8



Type	Package	Marking
CMS60P06	SOP- 8	CMS60P06

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

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current	-10	A
I_{DM}	Pulsed Drain Current	-30	A
EAS	Single Pulse Avalanche Energy [1]	260	mJ
P_D@T_C=25℃	Total Power Dissipation	10.4	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)	---	40	℃/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	-60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V , I_D=-15A	---	19	21	mΩ
		V_{GS}=-4.5V , I_D=-10A	---	21	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}=-60V, 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	---	35	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	12	---	Ω
Q_g	Total Gate Charge	V_{DS}=-30V , V_{GS}=-4.5V I_D=-5A	---	39	---	nC
Q_{gs}	Gate-Source Charge		---	17	---	
Q_{gd}	Gate-Drain Charge		---	20	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=-2V , V_{GS} =-10V , I_D =-5A R_{GEN} =1Ω , R_L =2Ω	---	11	---	ns
T_r	Rise Time		---	8	---	
$T_{d(off)}$	Turn-Off Delay Time		---	71	---	
T_f	Fall Time		---	41	---	
C_{iss}	Input Capacitance	V_{DS}=-25V , V_{GS}=0V , f=1MHz	---	4900	---	pF
C_{oss}	Output Capacitance		---	250	---	
C_{rss}	Reverse Transfer Capacitance		---	220	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_{SD}=-10A	---	---	-1.2	V

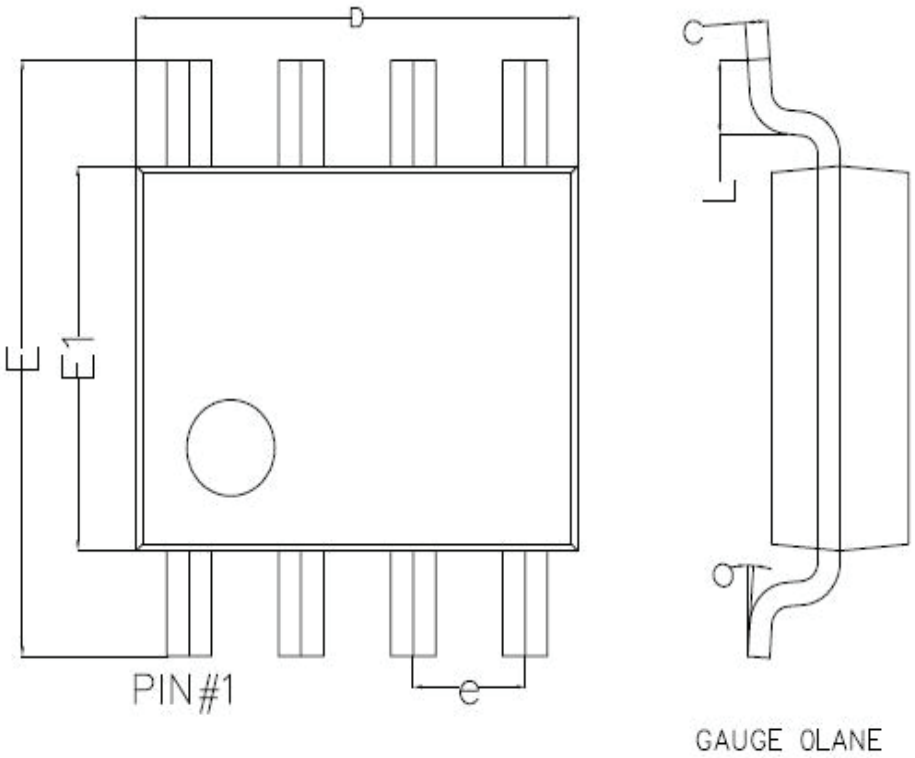
Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=-30V , V_{GS}=-10V , L=0.3mH , I_{AS}=-42A.

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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°