CMS70P06

-60V, 13mΩ typ., -12A P-Channel MOSFET

General Description

The CMS70P06 uses advanced trench technology to provide excellent $R_{DS(ON)}$.It can be used in a wide variety of applications.

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
-60V	15mΩ	-12A

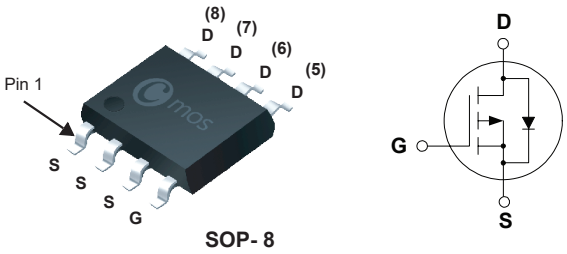
Applications

- DC/DC Converter
- notebook computer power management

Features

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

SOP-8 Pin Configuration



Type	Package	Marking
CMS70P06	SOP- 8	CMS70P06

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_A=25℃	Continuous Drain Current	-12	A
I_D@T_A=70℃	Continuous Drain Current	-8.4	A
I_{DM}	Pulsed Drain Current	-48	A
EAS	Single Pulse Avalanche Energy[1]	324	mJ
P_D@T_A=25℃	Total Power Dissipation	3.5	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-ambient	---	36	℃/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=-250uA	-60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V, I_D=-12A	---	13	15	mΩ
		V_{GS}=-4.5V , I_D=-10A	---	15	22	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250uA	-1	---	-3	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-60V , V_{GS}=0V , T_J=25℃	---	---	-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	---	28	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	30	---	Ω
Q_g	Total Gate Charge	V_{DS}=-30V , I_D=-12A V_{GS}=-10V	---	110	---	nC
Q_{gs}	Gate-Source Charge		---	20	---	
Q_{gd}	Gate-Drain Charge		---	28	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=-30V , R_G=6Ω , R_L=0.6Ω I_D=-6A , V_{GS}=-10V	---	15	---	ns
T_r	Rise Time		---	70	---	
$T_{d(off)}$	Turn-Off Delay Time		---	175	---	
T_f	Fall Time		---	175	---	
C_{iss}	Input Capacitance	V_{DS}=-25V, V_{GS}=0V , f=1MHz	---	5800	---	pF
C_{oss}	Output Capacitance		---	290	---	
C_{rss}	Reverse Transfer Capacitance		---	240	---	

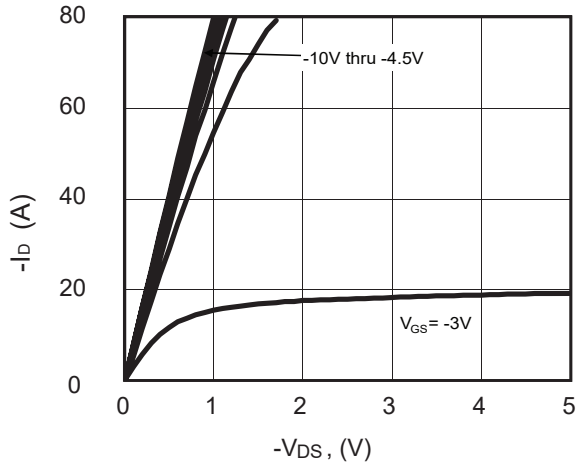
Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	-12	A
I_{SM}	Pulsed Source Current		---	---	-48	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_F=-10A	---	-0.80	-1.2	V

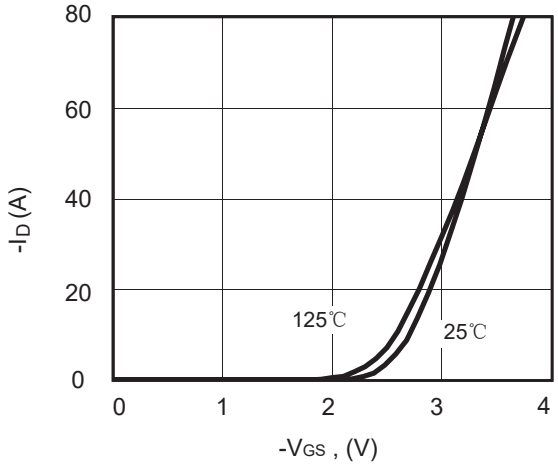
Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=-30V , V_{GS}=-10V , L=0.5mH , I_{AS}=-36A.

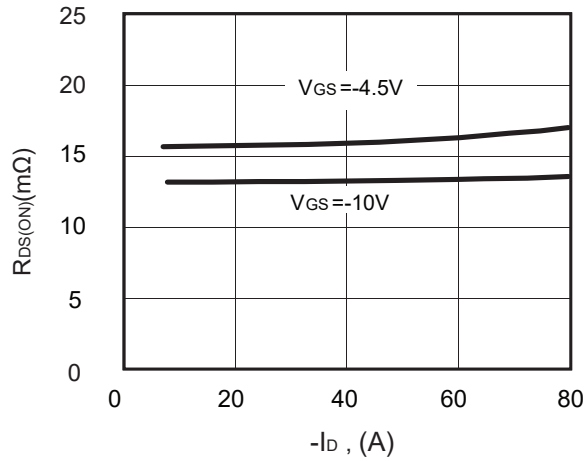
Typical Characteristics



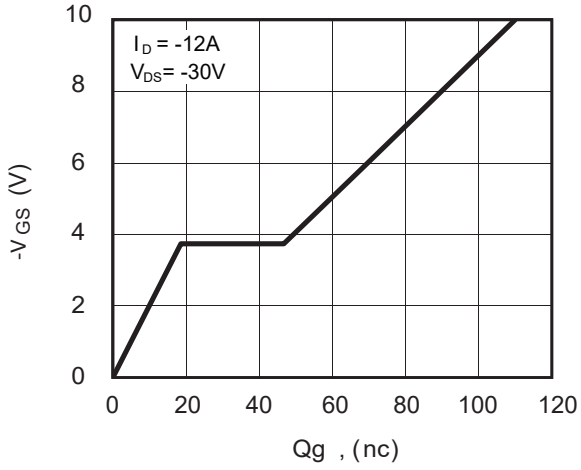
On-Region Characteristics



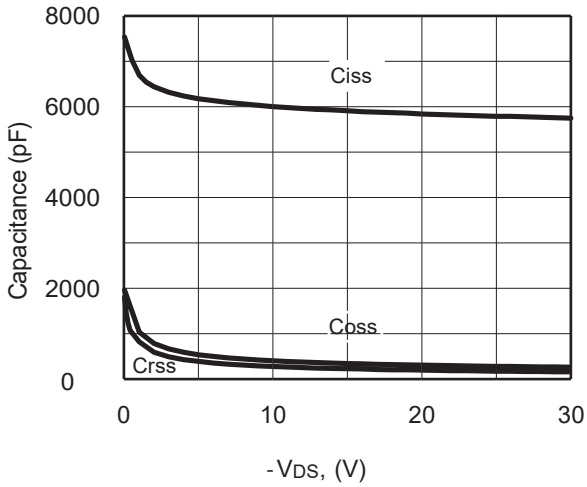
transfer characteristics



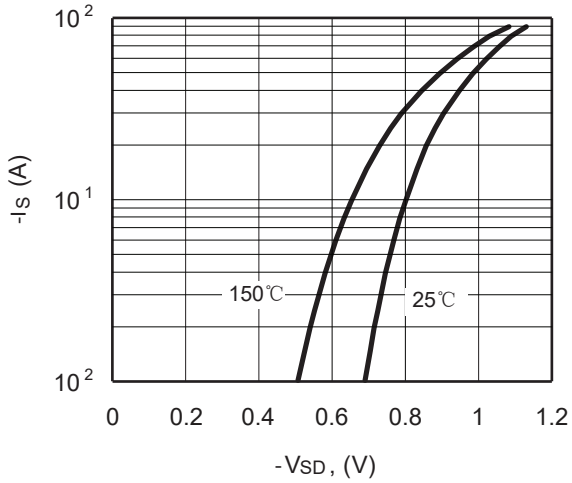
On-Resistance vs. Drain Current



Gate Charge Characteristics



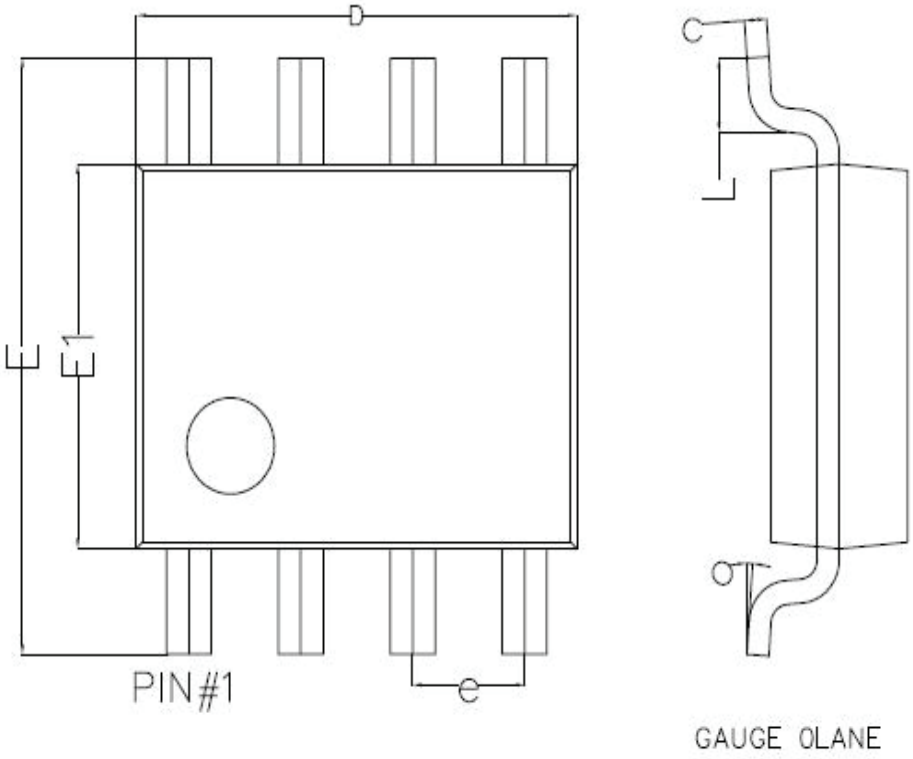
Capacitance Characteristics

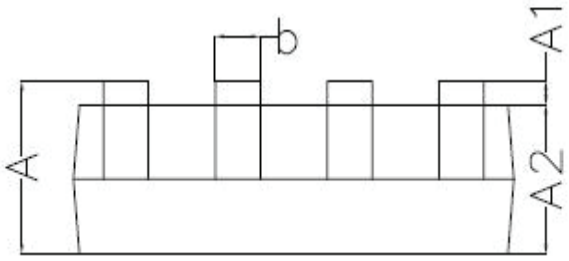


Body Diode Forward Voltage Variation with Source Current and Temperature

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°