

CMS5P10A

-100V, 222mΩ typ., -5A Dual P-Channel MOSFET

General Description

The CMS5P10A uses advanced trench technology to provide excellent $R_{DS(ON)}$. It can be used in a wide variety of applications.

Features

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

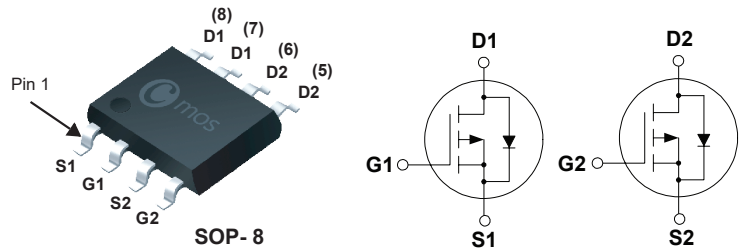
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
-100V	250mΩ	-5A

Applications

- Power Management in Notebook Computer, Portable Equipment and Battery Powered Systems.

SOP-8 Pin Configuration



Type	Package	Marking
CMS5P10A	SOP- 8	CMS5P10A

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-100	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_A=25^{\circ}C$	Continuous Drain Current	-5	A
$I_D@T_A=100^{\circ}C$	Continuous Drain Current	-3.5	A
I_{DM}	Pulsed Drain Current	-20	A
EAS	Single Pulse Avalanche Energy ¹	60	mJ
$P_D@T_A=25^{\circ}C$	Total Power Dissipation	3	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient(PCB Mount)	---	41	°C/W

Electrical Characteristics (T_J=25°C , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =-250μA	-100	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =-10V , I _D =-5A	---	222	250	mΩ
		V _{GS} =-4.5V , I _D =-3A	---	227	270	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D = -250μA	-1.0	---	-2.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-100V , V _{GS} =0V	---	---	-1	μA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =-10V , I _D =-5A	---	11	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	17	---	Ω
Q _g	Total Gate Charge	V _{DS} =-50V , I _D =-2A V _{GS} =-4.5V	---	15	---	nC
Q _{gs}	Gate-Source Charge		---	4	---	
Q _{gd}	Gate-Drain Charge		---	7	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} =-50V , V _{GS} =-10V , R _G =3.3Ω I _D = -1A	---	10	---	ns
T _r	Rise Time		---	5	---	
T _{d(off)}	Turn-Off Delay Time		---	55	---	
T _f	Fall Time		---	22	---	
C _{iss}	Input Capacitance	V _{DS} =-25V , V _{GS} =0V , f=1MHz	---	1500	---	pF
C _{oss}	Output Capacitance		---	50	---	
C _{rss}	Reverse Transfer Capacitance		---	40	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	-5	A
I _{SM}	Pulsed Source Current		---	---	-20	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =-5A , T _J =25°C	---	-0.83	-1.2	V

Note :

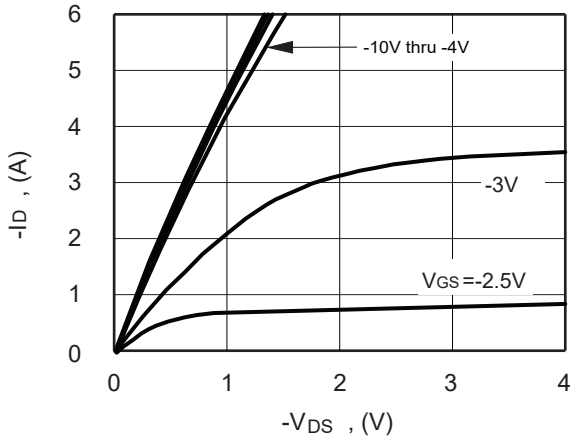
1.The EAS data shows Max. rating . The test condition is V_{DD}=-50V , V_{GS}=-10V , L=1mH , I_{AS}=-11A.

This product has been designed and qualified for the consumer market.

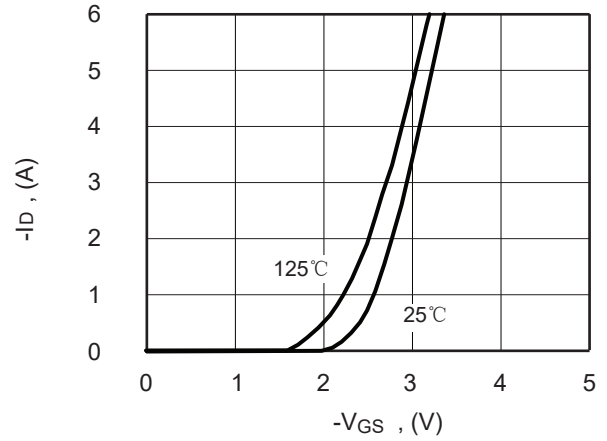
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Cmos reserves the right to improve product design ,functions and reliability without notice.Please refer to the latest version of specification.

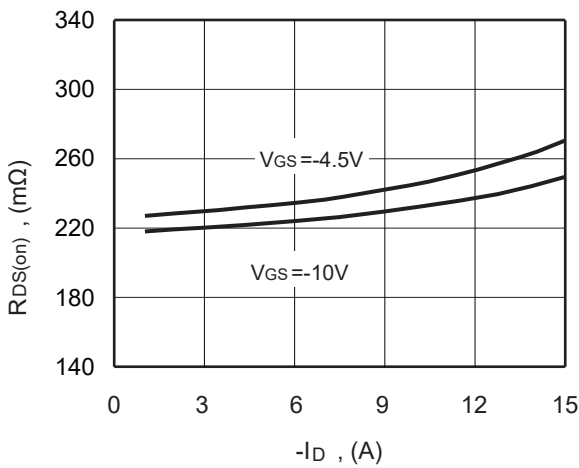
Typical Characteristics



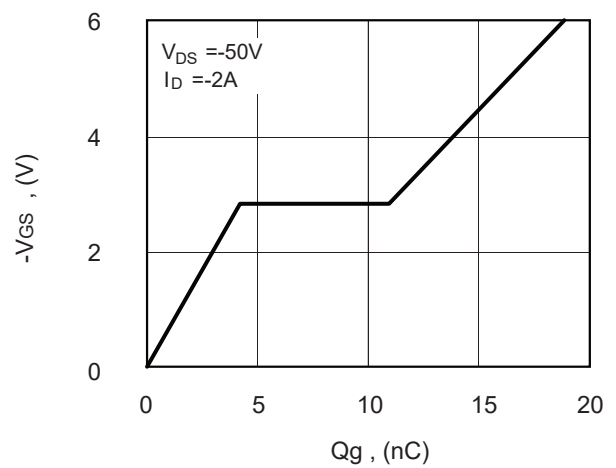
Output Characteristics



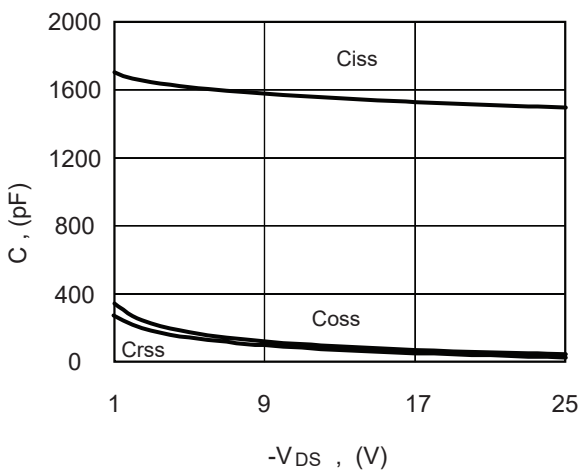
transfer characteristics



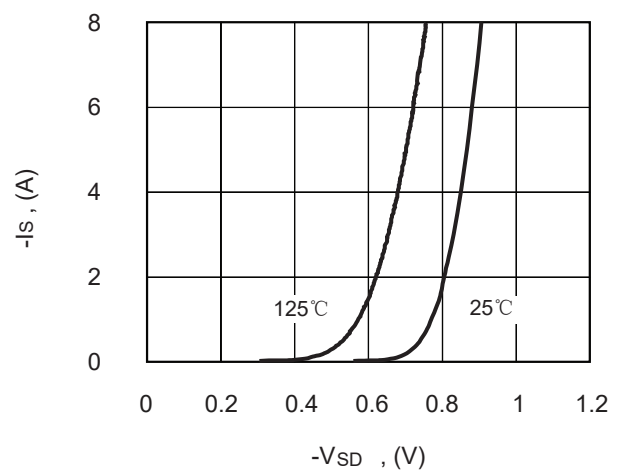
On-Resistance vs. Drain Current



Gate Charge Characteristics



Capacitance Characteristics

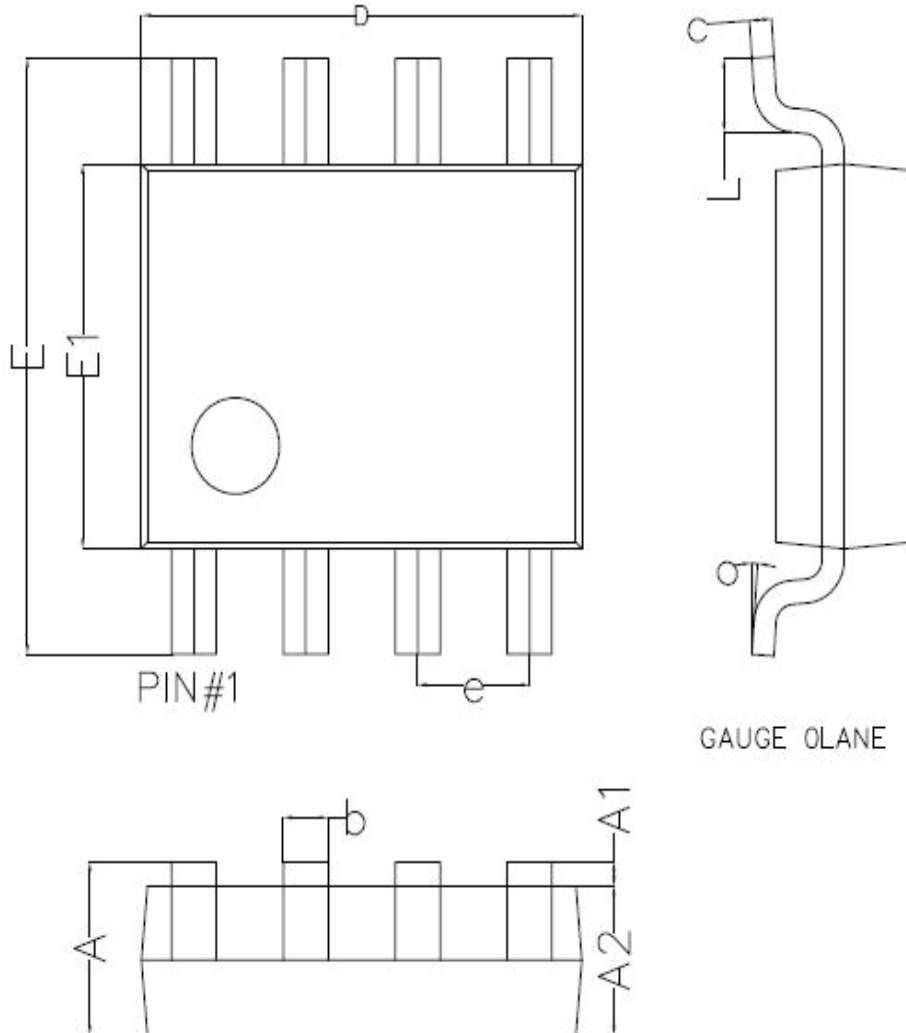


Body-Diode Characteristics

Package Dimension

SOP-8

Unit :mm



GAUGE PLANE

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°