CMSA18P10

-100V, 148mΩ typ., -18A P-Channel MOSFET

General Description

The CMSA18P10 uses advanced technology to provide excellent RDS (ON) . This device is suitable to be used as the low side FET in SMPS,load switching and general purpose.

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
-100V	165mΩ	-18A

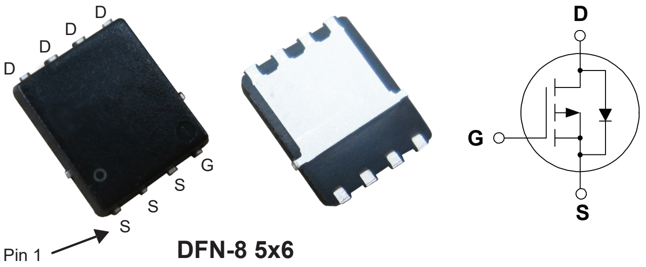
Applications

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

Features

- Lower On-resistance
- 100% EAS Guaranteed
- Simple Drive Requirement
- RoHS Compliant

DFN-8 5x6 Pin Configuration



DFN-8 5x6

Type	Package	Marking
CMSA18P10	DFN-8 5x6	CMSA18P10

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-100	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current	-18	A
I_D@T_C=100℃	Continuous Drain Current	-12.5	A
I_{DM}	Pulsed Drain Current	-54	A
EAS	Single Pulse Avalanche Energy [1]	39	mJ
P_D@T_C=25℃	Total Power Dissipation	65	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	---	50	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.92	℃/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	-100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V, I_D=-3A	---	148	165	mΩ
		V_{GS}=-4.5V , I_D=-2A	---	161	190	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250uA	-1	---	-3	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-100V, 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}=-10V, I_D=-3A	---	8	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	18	---	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

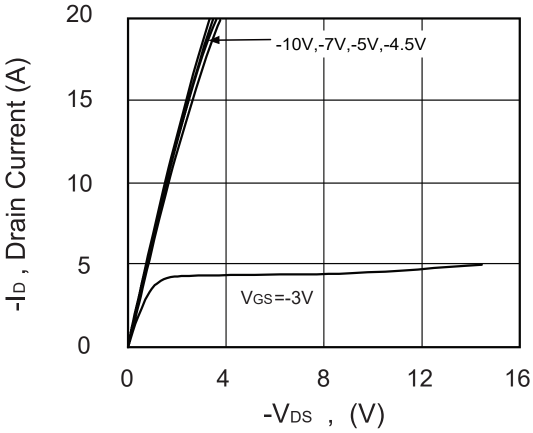
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	-18	A
I_{SM}	Pulsed Source Current		---	---	-54	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_F=-5A	---	-0.87	-1.2	V

Note :

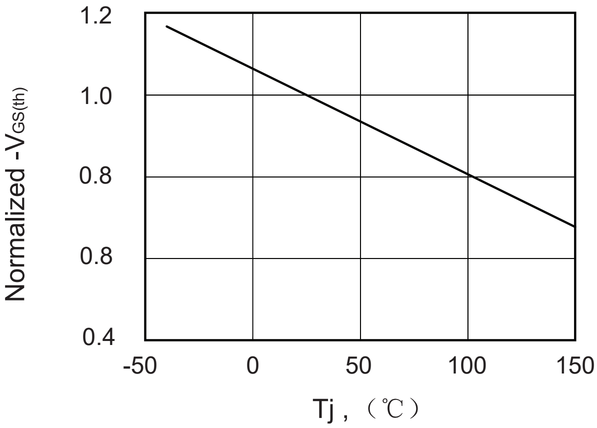
1.The EAS data shows Max. rating .The test condition is V_{DS}=-50V , V_{GS}=-10V , L=0.5mH , I_{AS}=-12.5A.

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.

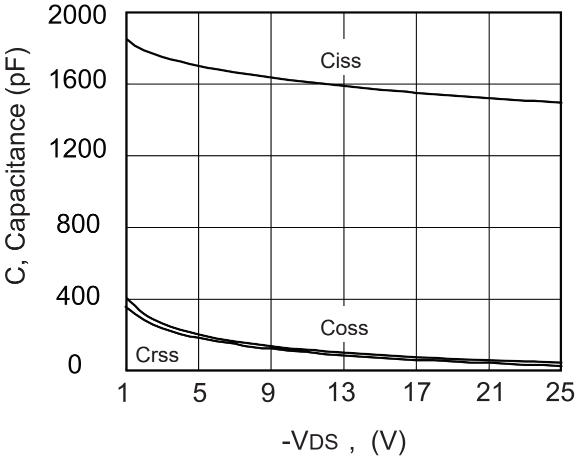
Typical Characteristics



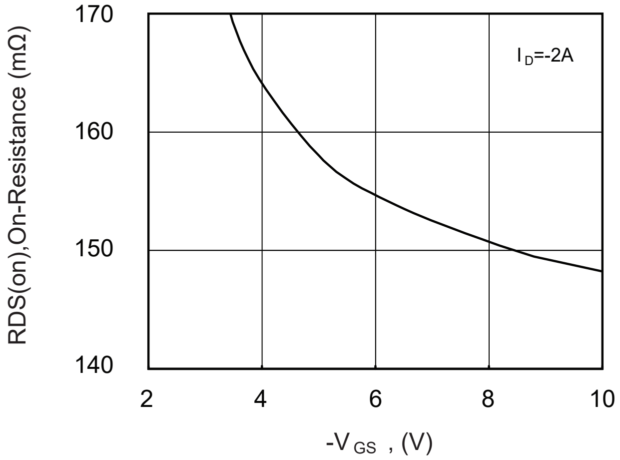
Output Characteristics



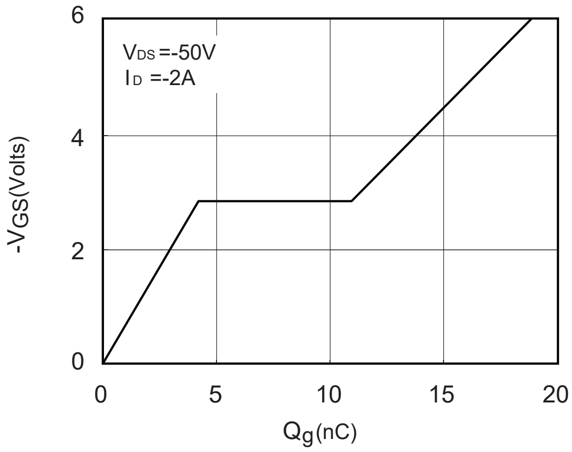
Gate Threshold Voltage v.s.Junction Temperature



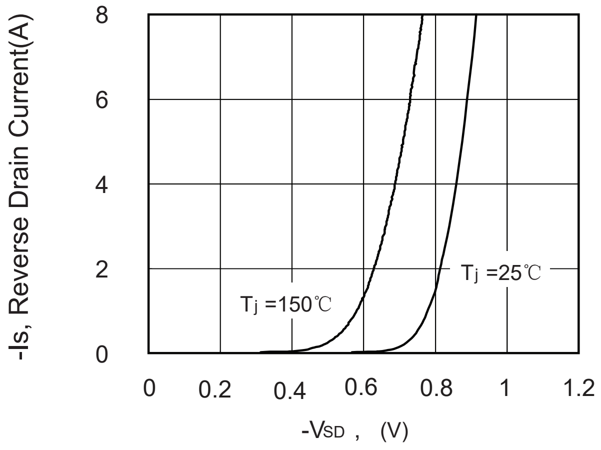
Capacitance Characteristics



On-Resistance v.s. Gate Voltage



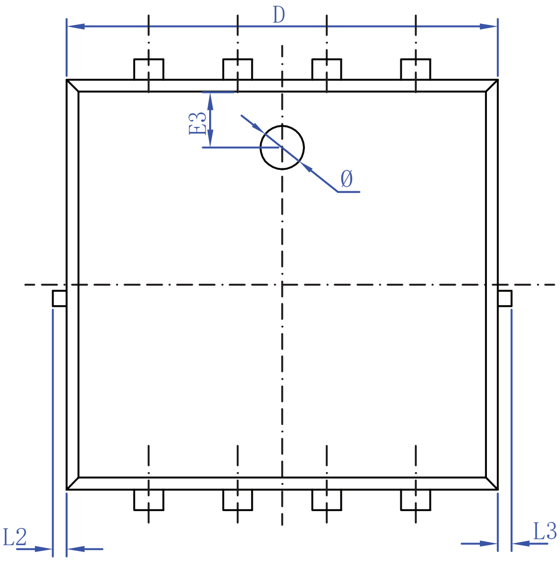
Gate Charge Characteristics

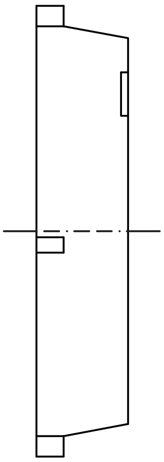


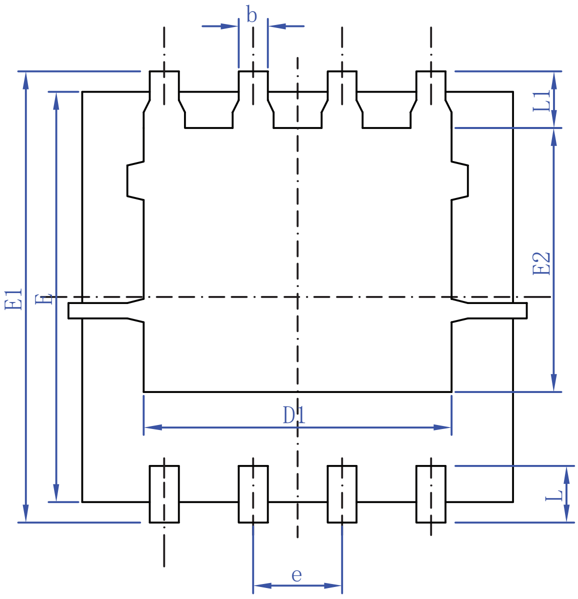
Body-Diode Characteristics

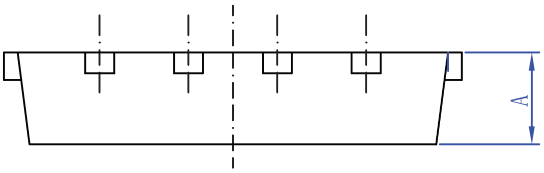
Package Dimension

DFN-8 5x6 Unit :mm









Dimensions In Millimeters			
Symbol	Min.	Max.	Ave.
A	0.900	1.100	1.000
D	4.950	5.150	5.050
D1	3.850	4.250	4.050
E	5.750	5.950	5.850
E1	5.950	6.350	6.150
E2	3.300	3.700	3.500
E3	0.900	1.300	1.100
b	0.250	0.350	0.300
e	1.220	1.320	1.270
L	0.585	0.785	0.685
L1	0.525	0.725	0.625
Ø	1.000	1.400	1.200
L2	0~0.100		
L3	0~0.100		

注：
1.未注公差±0.05未标注圆角R max=0.25