CMSA60P06

-60V, 16mΩ typ., -60A P-Channel MOSFET

General Description

The CMSA60P06 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
-60V	20mΩ	-60A

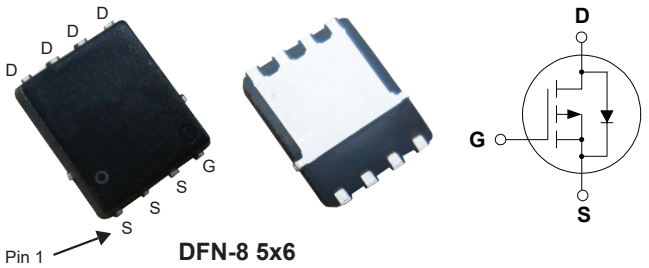
Applications

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

Features

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

DFN-8 5x6 Pin Configuration



DFN-8 5x6

Type	Package	Marking
CMSA60P06	DFN-8 5*6	CMSA60P06

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current	-60	A
I_{DM}	Pulsed Drain Current	-240	A
EAS	Single Pulse Avalanche Energy [1]	240	mJ
P_D@T_C=25℃	Total Power Dissipation	45	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
$R_{\theta JA}$	Junction-to-Ambient	---	44.6	℃/W
$R_{\theta JC}$	Junction-to-Case	---	2.78	℃/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=-250uA	-60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V, I_D=-20A	---	16	20	mΩ
		V_{GS}=-4.5V, I_D=-15A	---	20	24	
$V_{GS(th)}$	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	---	26	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	60	---	Ω
Q_g	Total Gate Charge	V_{DS}=-48V , I_D=-40A V_{GS}=-10V	---	91	---	nC
Q_{gs}	Gate-Source Charge		---	17	---	
Q_{gd}	Gate-Drain Charge		---	29	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=-30V, V_{GS}=-10V, R_L=1.5Ω I_D=-20A	---	21	---	ns
T_r	Rise Time		---	11	---	
$T_{d(off)}$	Turn-Off Delay Time		---	200	---	
T_f	Fall Time		---	61	---	
C_{iss}	Input Capacitance	V_{DS}=-25V, V_{GS}=0V , f=1MHz	---	4600	---	pF
C_{oss}	Output Capacitance		---	250	---	
C_{rss}	Reverse Transfer Capacitance		---	120	---	

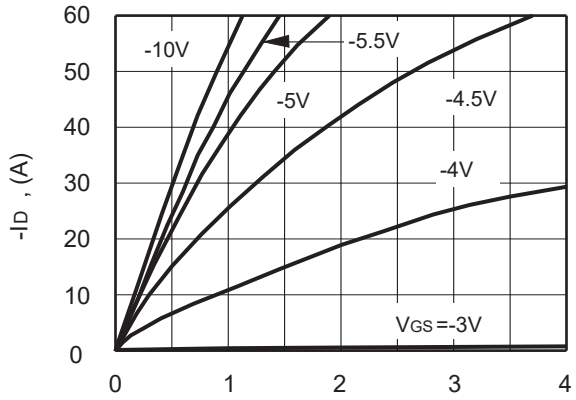
Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	-60	A
I_{SM}	Pulsed Source Current		---	---	-240	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_F=-20A	---	-0.86	-1.2	V

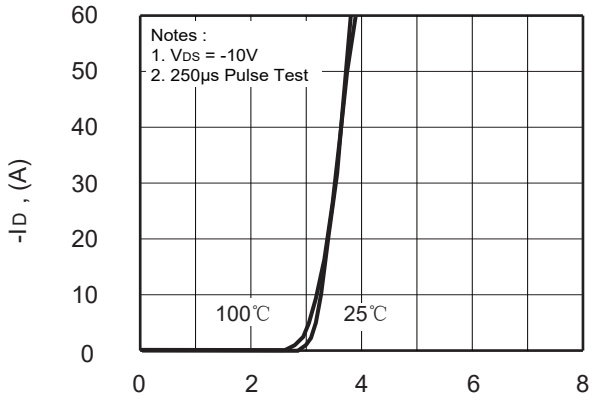
Note :

1.The test condition is V_{DD}=30V , V_{GS}=10V , L=0.5mH , I_D=31A

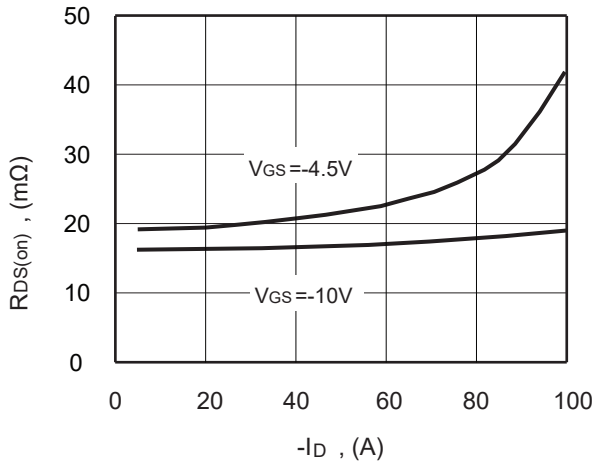
Typical Characteristics



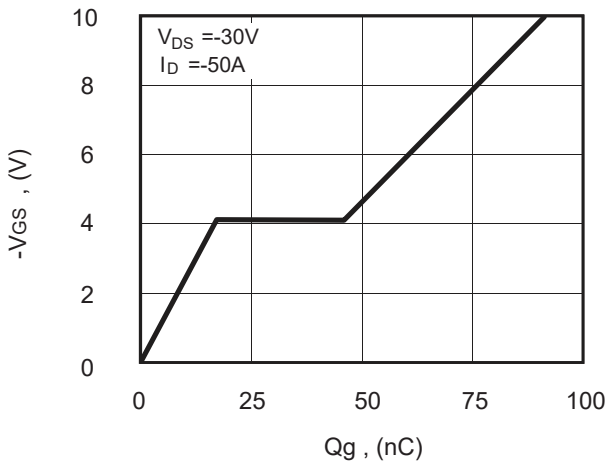
Output Characteristics



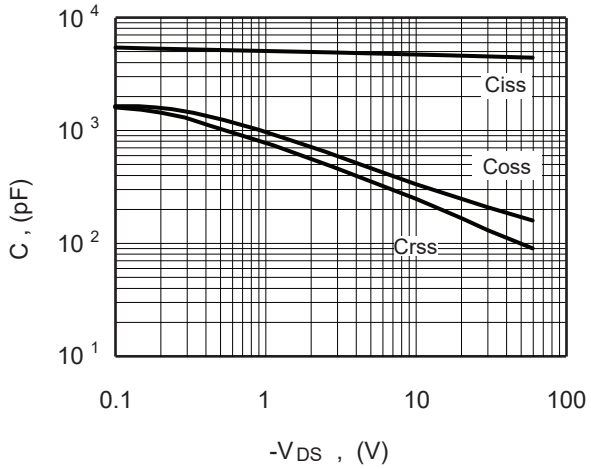
transfer characteristics



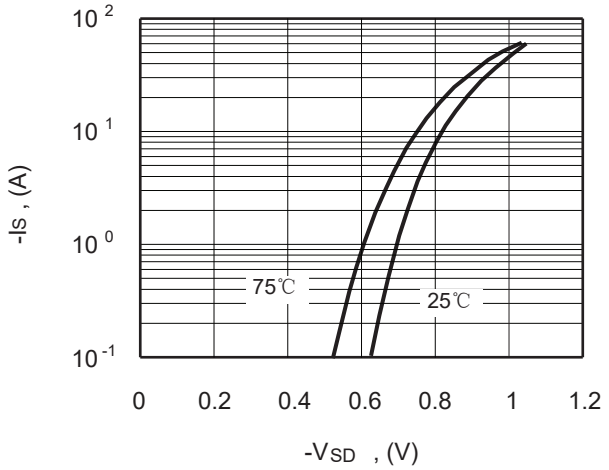
On-Resistance vs. Drain Current



Gate Charge Characteristics

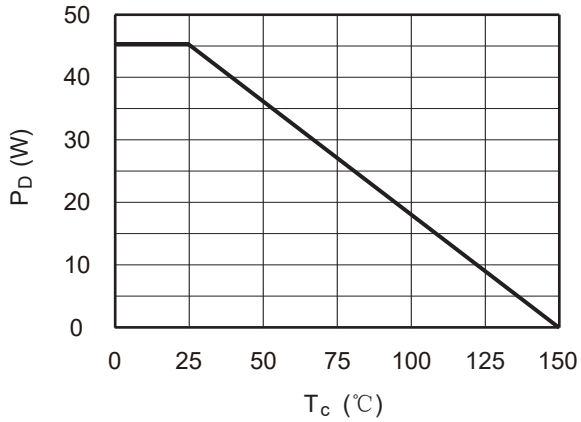


Capacitance Characteristics

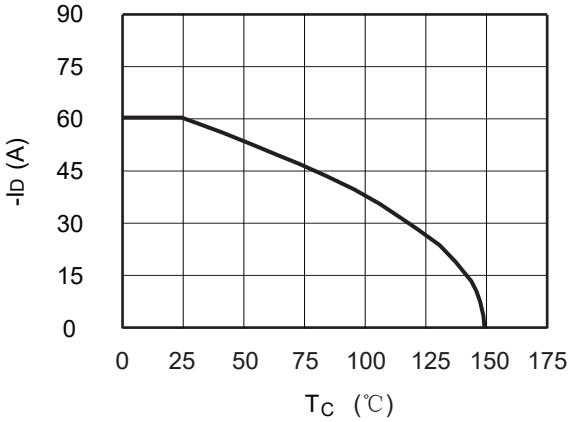


Body-Diode Characteristics

Typical Characteristics



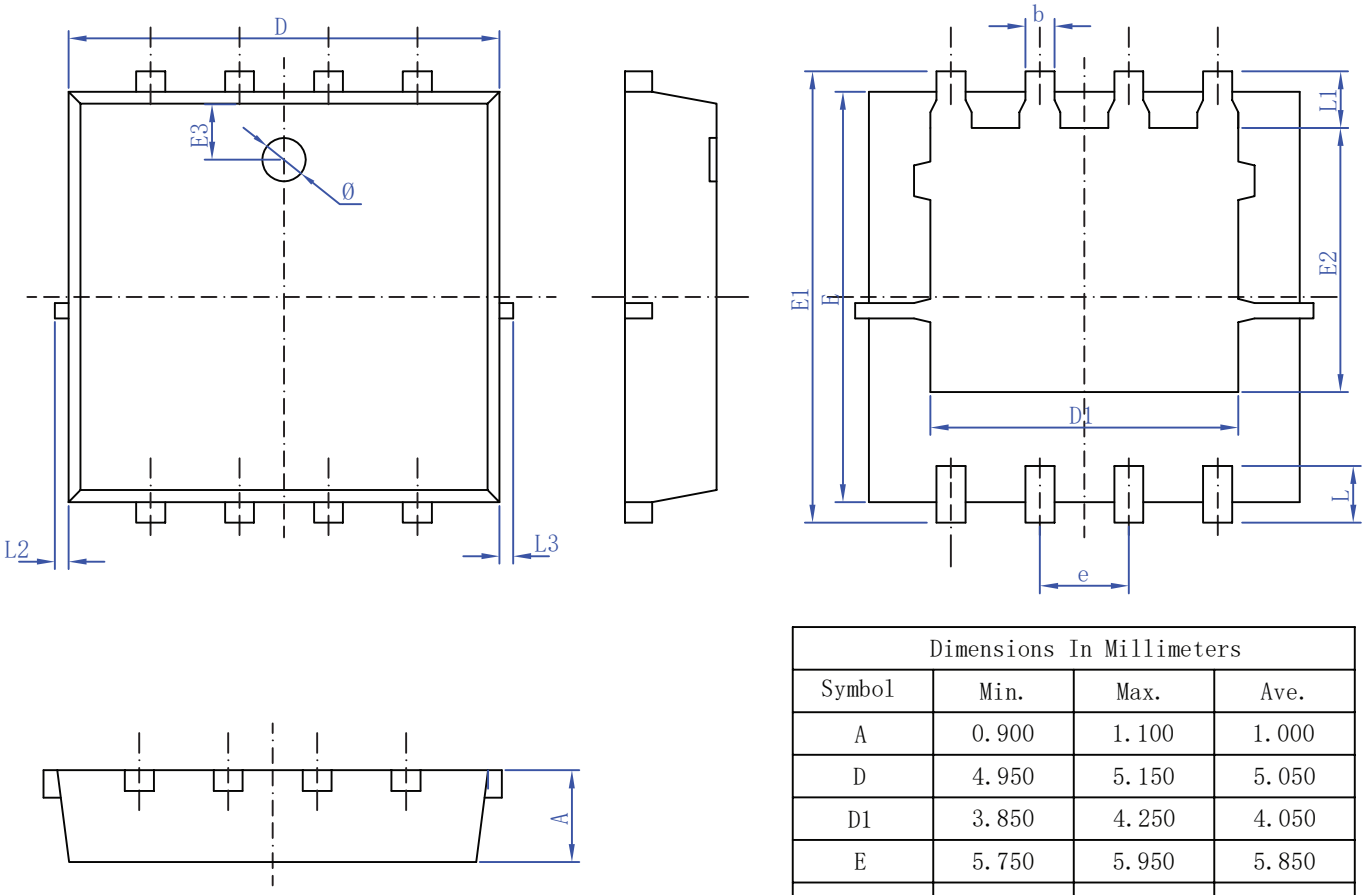
Maximum total power dissipation



Maximum Drain Current vs. Case Temperature

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