CMH60R070P

600V, 58mΩ typ., 55A N-Channel Super-Junction MOSFET

General Description

The CMH60R070P is power MOSFET using Cmos's advanced super junction technology that can realize very low on-resistance and gate charge. It will provide much high efficiency by using optimized charge coupling technology. These user friendly devices give an advantage of Low EMI to designers as well as low switching loss.

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
600V	65mΩ	55A

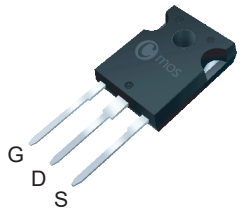
Applications

- Adapter
- Motor Control
- Switching Applications

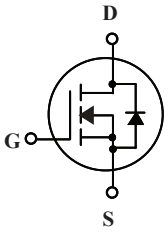
Features

- Low On-Resistance
- 100% Avalanche Tested
- RoHS Compliant

TO-247 Pin Configuration



TO-247



Type	Package	Marking
CMH60R070P	TO-247	CMH60R070P

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	600	V
V_{GS}	Gate-Source Voltage	±30	V
I_D@T_C=25℃	Continuous Drain Current	55	A
I_D@T_C=100℃	Continuous Drain Current	44	A
I_{DM}	Pulsed Drain Current	220	A
EAS	Single Pulse Avalanche Energy[1]	2733	mJ
P_D@T_C=25℃	Total Power Dissipation	390	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Rating	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	62	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	0.32	℃/W

600V, 58mΩ typ., 55A N-Channel Super-Junction MOSFET

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	600	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=20A	---	58	65	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=600V , V_{GS}=0V	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=± 30V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=15V, I_D=10A	---	26	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	2.2	---	Ω
Q_g	Total Gate Charge	I_D=53A V_{DS}=480V V_{GS}=10V	---	130	---	nC
Q_{gs}	Gate-Source Charge		---	32	---	
Q_{gd}	Gate-Drain Charge		---	60	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=300V V_{GS}=10V I_D=53A R_G=25Ω	---	72	---	ns
T_r	Rise Time		---	200	---	
$T_{d(off)}$	Turn-Off Delay Time		---	412	---	
T_f	Fall Time		---	163	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	5700	---	pF
C_{oss}	Output Capacitance		---	2970	---	
C_{rss}	Reverse Transfer Capacitance		---	165	---	

Diode Characteristics

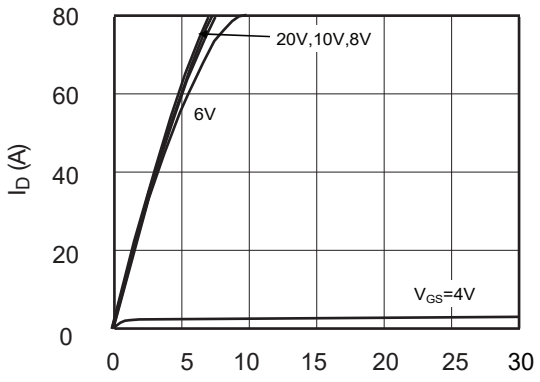
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	55	A
I_{SM}	Pulsed Source Current		---	---	220	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=30A	---	0.83	1.4	V
t_{rr}	Reverse Recovery Time	V_{DD}=100V , I_{SD}=53A di/dt =100A/μs	---	580	---	ns
Q_{rr}	Reverse Recovery Charge		---	10	---	μC

Note :

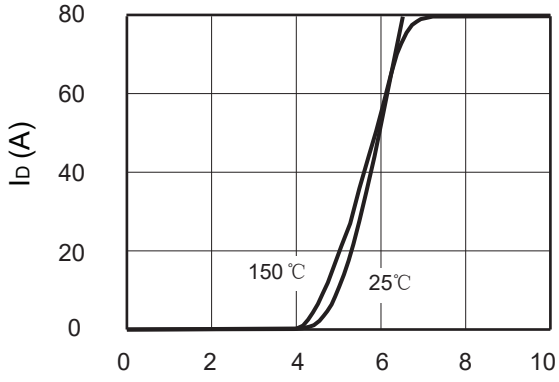
1.The EAS data shows Max. rating . The test condition is V_{DD}=80V,V_{GS}=10V,L=30mH,I_{AS}=13.5A.

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Cmos reserver the right to improve product design ,functions and reliability wihtout notice.

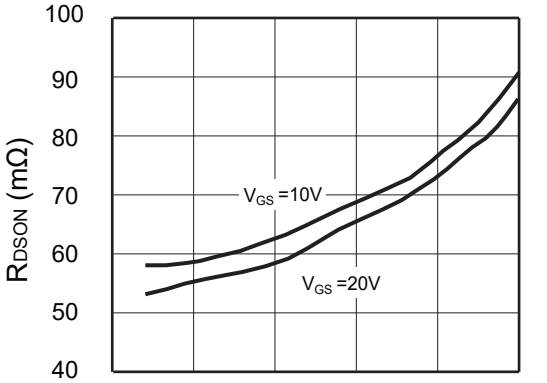
Typical Characteristics



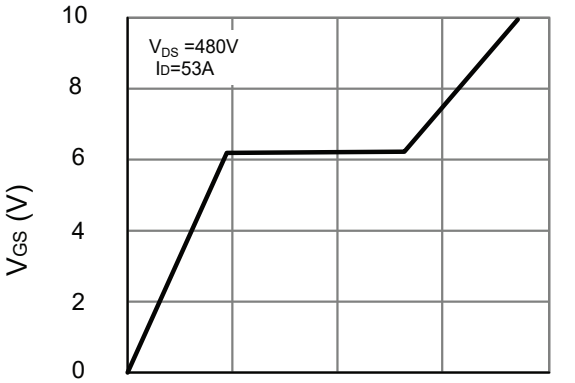
Output Characteristics



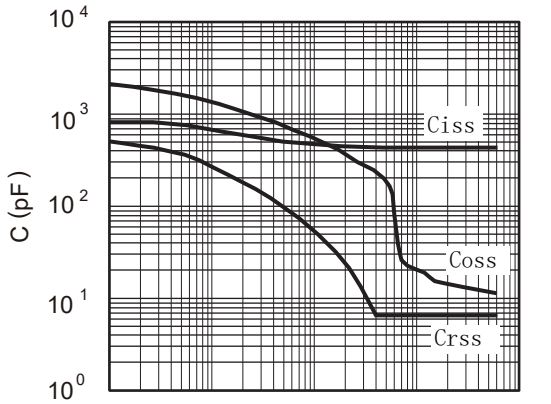
transfer characteristics



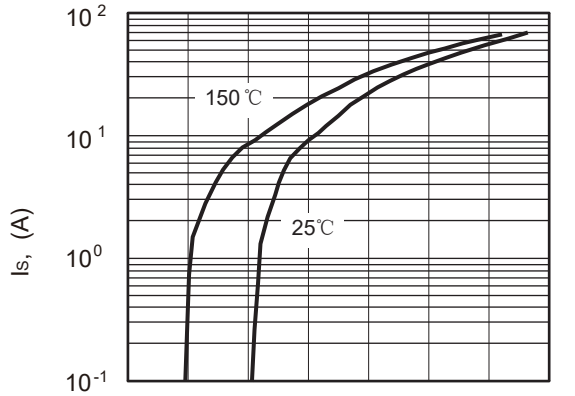
drain-source on-resistance



Gate charge vs gate-source voltage



Capacitance Characteristics



Body-Diode Characteristics