

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.

Features

- Multi-layer Epitaxial Chip Technology
- Low On-Resistance
- 100% avalanche tested
- RoHS Compliant

Product Summary

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

Applications

- Adapter
- Motor Control
- Switching Applications

TO-247 Pin Configuration



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°C	Continuous Drain Current	55	A
I _D @T _C =100°C	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°C	Total Power Dissipation	390	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 _{θJA}	Thermal Resistance Junction-ambient	---	62.5	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	0.32	°C/W

Electrical Characteristics ($T_J=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	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	$V_{GS}=V_{DS}$, $I_D=250\mu A$	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=600V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 30V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=15V$, $I_D=10A$	---	26	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	2.2	---	Ω
Q_g	Total Gate Charge	$I_D=53A$	---	130	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=480V$	---	32	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	60	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=300V$	---	72	---	ns
T_r	Rise Time	$V_{GS}=10V$	---	200	---	
$T_{d(off)}$	Turn-Off Delay Time	$I_D=53A$	---	412	---	
T_f	Fall Time	$R_G=25\Omega$	---	163	---	
C_{iss}	Input Capacitance	$V_{DS}=100V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	4500	---	pF
C_{oss}	Output Capacitance		---	190	---	
C_{rss}	Reverse Transfer Capacitance		---	8.2	---	

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	$V_{DD}=100V$, $I_{SD}=53A$	---	582	---	ns
Q_{rr}	Reverse Recovery Charge	$di/dt=100A/\mu s$	---	13.7	---	μC

Note :

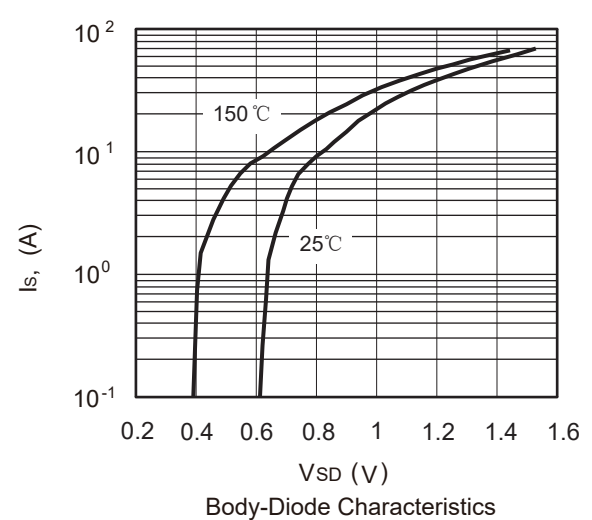
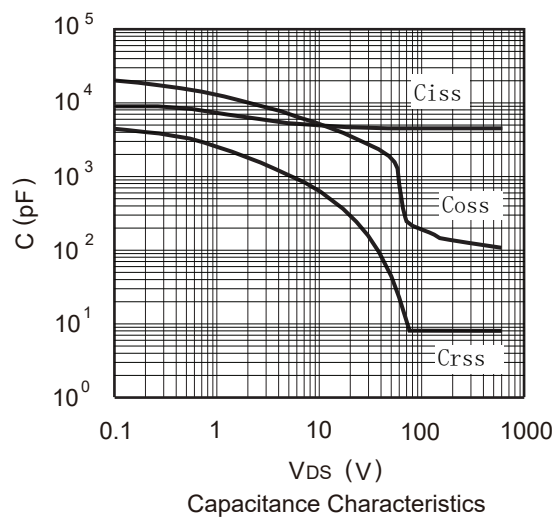
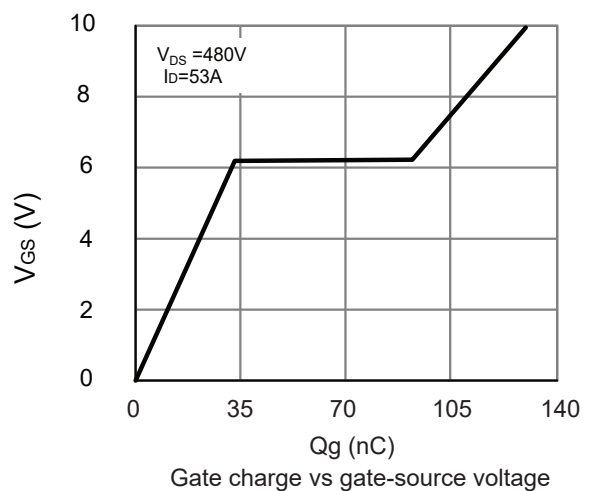
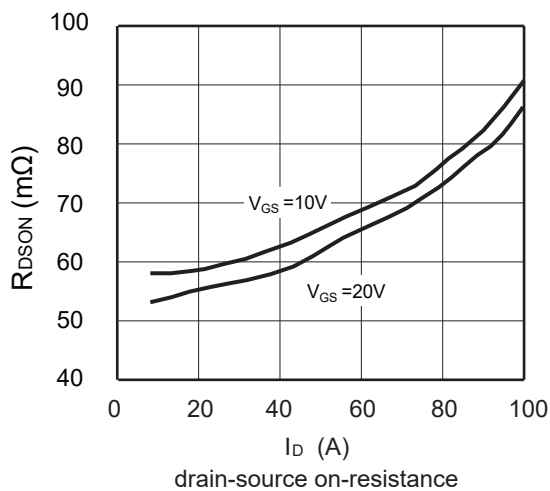
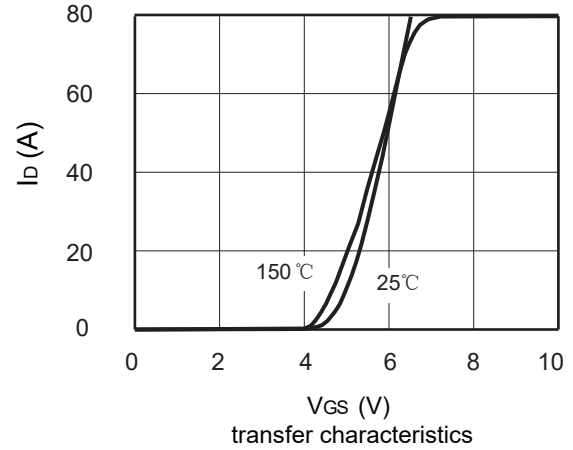
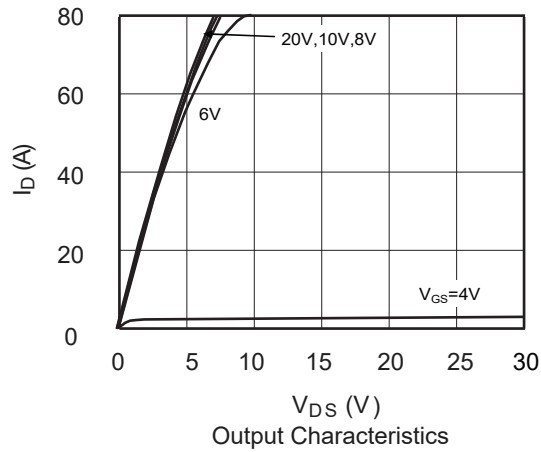
1.The EAS data shows Max. rating . The test condition is $V_{DD}=80V$, $V_{GS}=10V$, $L=30\text{mH}$, $I_{AS}=13.5A$.

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

Cmos assumes no liability for customers' product design or applications.

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

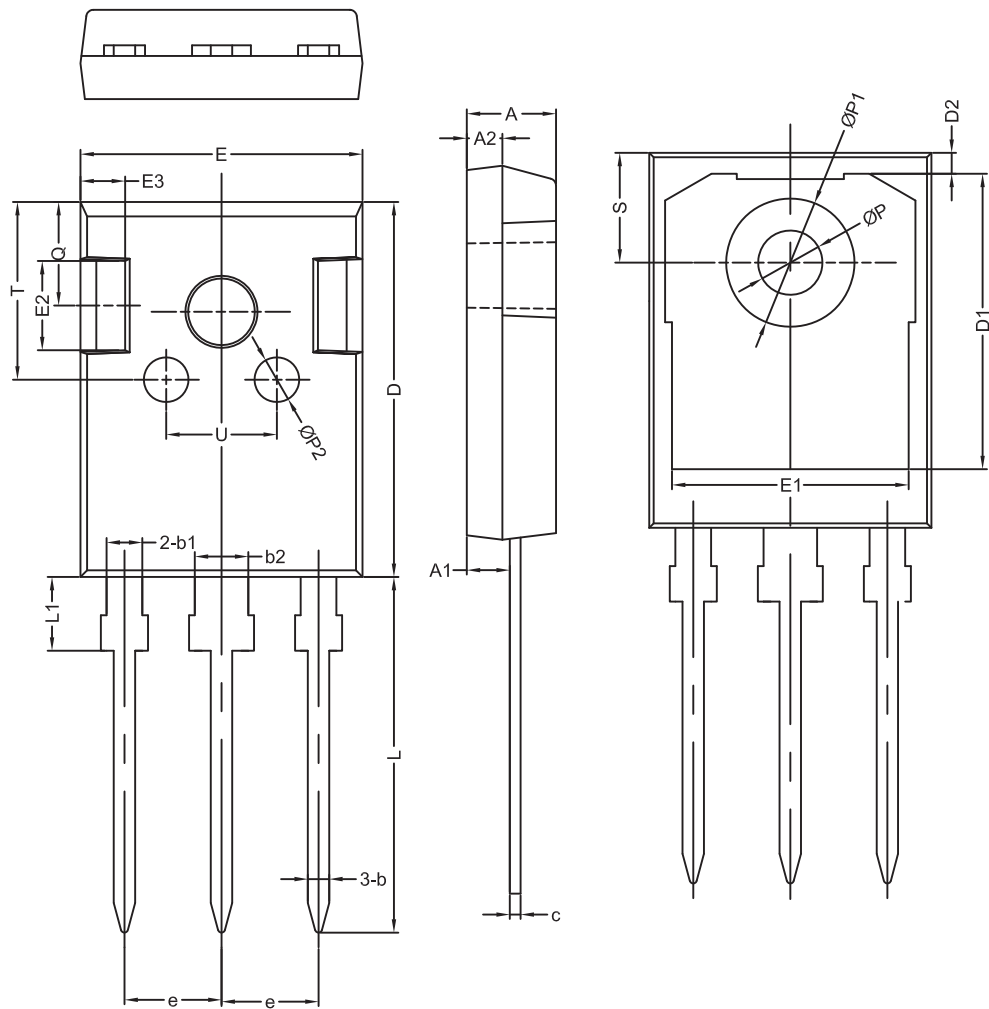
Typical Characteristics



Package Dimension

TO-247

Unit :mm



符号	机械尺寸/mm			符号	机械尺寸/mm		
	最小值	典型值	最大值		最小值	典型值	最大值
A	4.80	5.00	5.20	E2		5.00	
A1	2.21	2.41	2.61	E3		2.50	
A2	1.90	2.00	2.10	e		5.44	
b	1.10	1.20	1.35	L	19.42	19.92	20.42
b1		2.00		L1		4.13	
b2		3.00		P	3.50	3.60	3.70
c	0.55	0.60	0.75	P1		7.19	
D	20.80	21.00	21.20	P2		2.50	
D1		16.55		Q		5.80	
D2		1.20		S	6.05	6.15	6.25
E	15.60	15.80	16.0	T		10.00	
E1		13.30		U		6.20	