

General Description

CMH60R078 is power MOSFET using Cmos's advanced super junction technology that can realize very low on-resistance and gate charge. It has low gate charge and ultra-fast body diode, so turn off action is improved. CMH60R078 provides excellent performances, such as efficiency and EMI, in soft switching applications.

Features

- Low On-Resistance
- 100% avalanche tested
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	600	V
V_{GS}	Gate-Source Voltage	± 30	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	50	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	31.6	A
I_{DM}	Pulsed Drain Current	200	A
EAS	Single Pulse Avalanche Energy ¹	600	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	266	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Rating	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	45.1	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	0.47	$^\circ\text{C}/\text{W}$

Product Summary

BVDSS	RDSON	ID
600V	70m Ω	50A

Applications

- Switching applications

TO-247 Pin Configuration



Type	Package	Marking
CMH60R078	TO-247	CMH60R078

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	$V_{GS}=10V$, $I_D=15A$	---	59	70	m Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	3	---	5	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=600V$, $V_{GS}=0V$	---	---	13	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 30V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=15A$	---	26	---	S
Q_g	Total Gate Charge	$I_D=45A$	---	88	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=480V$	---	28	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	35	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=300V$	---	33	---	ns
T_r	Rise Time	$V_{GS}=10V$	---	160	---	
$T_{d(off)}$	Turn-Off Delay Time	$I_D=45A$	---	76	---	
T_f	Fall Time	$R_G=2\Omega$	---	5	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1MHz$	---	3600	---	pF
C_{oss}	Output Capacitance		---	3700	---	
C_{rss}	Reverse Transfer Capacitance		---	160	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	50	A
I_{SM}	Pulsed Source Current		---	---	200	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=30A$	---	0.9	1.4	V
t_{rr}	Reverse Recovery Time	$V_{GS}=0V$, $I_S=50A$	---	280	---	ns
Q_{rr}	Reverse Recovery Charge	$dI_F/dt=100A/\mu s$	---	2.69	---	μC

Notes:

1.The EAS data shows Max. rating .The test condition is $V_{DS}=50V$, $V_{GS}=10V$, $L=5mH$, $I_{AS}=15.5A$.

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

