CMH60R115P

N-Channel Super Junction Power MOSFET

General Description

CMH60R115P 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 parts can be adopted quickly into new and existing offline power supply designs.

Product Summary

BVDSS	RDSON	ID
600V	115mΩ	33A

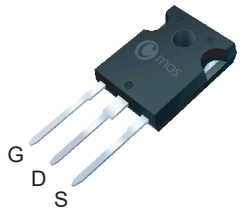
Applications

- DC-DC Converters
- Adapter
- PFC Power Supply Stages
- Switching Applications

Features

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

TO-247 Pin Configuration



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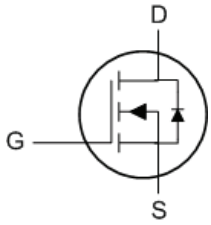

Type	Package	Marking
CMH60R115P	TO-247	CMH60R115P

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	33	A
I_D@T_C=100℃	Continuous Drain Current	21	A
I_{DM}	Pulsed Drain Current	132	A
EAS	Single Pulse Avalanche Energy[1]	696	mJ
P_D@T_C=25℃	Total Power Dissipation	250	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	62.5	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	0.49	℃/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	600	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=14.5A	---	95	115	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}=10V , I_D=20A	---	28	---	S
Q_g	Total Gate Charge	I_D=33A V_{DS} =480V V_{GS} =10V	---	75	---	nC
Q_{gs}	Gate-Source Charge		---	15	---	
Q_{gd}	Gate-Drain Charge		---	34	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS} =300V V_{GS} =10V I_D=33A R_G=25Ω	---	50	---	ns
T_r	Rise Time		---	105	---	
$T_{d(off)}$	Turn-Off Delay Time		---	240	---	
T_f	Fall Time		---	80	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	2900	---	pF
C_{oss}	Output Capacitance		---	1850	---	
C_{rss}	Reverse Transfer Capacitance		---	110	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	33	A
I_{SM}	Pulsed Source Current		---	---	132	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=31A	---	---	1.4	V
t_{rr}	Reverse Recovery Time	V_{DD}=100V , I_S=33A	---	488	---	ns
Q_{rr}	Reverse Recovery Charge	dI_F/dt =100A/μs	---	9.4	---	μC

Notes:

1.The EAS data shows Max. rating . The test condition is V_{DD}=80V , V_{GS}=10V , L=10mH , I_D=11.8A

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