

80V N-Channel MOSFET

General Description

The CMH1608 uses advanced trench technology and design to provide excellent RDS(ON) with low gate charge. These devices are well suited for low voltage applications such as automotive, high efficiency switching for DC/DC converters, and DC motor control.

Features

- 100% avalanche tested
- Fast Switching
- Improved dv/dt capability

Product Summary

BVDSS	RDSON	ID
80V	0.0042Ω	160A

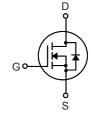
Applications

- Power switching application
- UPS(Uninterruptible Power Supply)
- Hard Switched and High Frequency Circuits
- Inverter

TO-247 Pin Configuration



CMH1608



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	80	V
V_{GS}	Gate-Source Voltage	±25	V
I _D @T _C =25℃	Continuous Drain Current	160	А
I _D @T _C =100℃	Continuous Drain Current	113	А
I _{DM}	Pulsed Drain Current ¹	480	А
EAS	Single Pulse Avalanche Energy ²	1400	mJ
P _D @T _C =25℃	Total Power Dissipation	300	W
T _{STG}	Storage Temperature Range	-55 to 175	°C
TJ	Operating Junction Temperature Range	-55 to 175	°C

Thermal Data

Symbol	Parameter	Тур.	Max.	Unit
$R_{ hetaJA}$	Thermal Resistance Junction-ambient		40	°C/W
$R_{ heta JC}$	Thermal Resistance Junction-case		0.4	°C/W



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

Symbol	Parameter	Conditions	Min.	Тур.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =250uA	80			V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =80A			0.0042	Ω
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	2		4	V
	Drain Source Leekage Current	V _{DS} =80V, V _{GS} =0V			1	
I _{DSS}	Drain-Source Leakage Current	V _{DS} =64V, TC=150℃			10	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±25V , V _{DS} =0V			±100	nA
gfs	Forward Transconductance 3	V _{DS} =10V , I _D =50A		68		S
Qg	Total Gate Charge	I _D =160A		225		
Q _{gs}	Gate-Source Charge	V _{DS} =64V		40		nC
Q_gd	Gate-Drain Charge	V _{GS} = 10V (Note 3, 4)		120		
T _{d(on)}	Turn-On Delay Time	V _{DS} =40V		90		
Tr	Rise Time	I _D =160A		970		20
$T_{d(off)}$	Turn-Off Delay Time	R _G =25Ω		260		ns
T_f	Fall Time	(Note 3, 4)		410		
C _{iss}	Input Capacitance			8700		
C _{oss}	Output Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz		1800		pF
C _{rss}	Reverse Transfer Capacitance			480		

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Тур.	Max.	Unit
Is	Continuous Source Current	-V _G =V _D =0V , Force Current			160	Α
I _{SM}	Pulsed Source Current				480	Α
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =30A			1.5	V

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.

^{1.}Repetitive Rating: Pulse width limited by maximum junction temperature.

^{2.}L = 0.5mH, I as = 75A, VdD = 25V, Rg = 25 Ω , Starting TJ = 25 $^{\circ}$ C.

^{3.}Pulse Test: Pulse width≤300µs, Duty Cycle≤2%.

^{4.} Essentially Independent of Operating Temperature.