

General Description

The CMH1608 uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ 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	$R_{DS(ON)}$	ID
80V	0.0042 Ω	160A

Applications

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

TO-247 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	80	V
V_{GS}	Gate-Source Voltage	± 25	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	160	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	113	A
I_{DM}	Pulsed Drain Current ¹	480	A
EAS	Single Pulse Avalanche Energy ²	1400	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	300	W
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 175	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	40	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.4	$^\circ\text{C/W}$

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	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	$V_{GS}=V_{DS}$, $I_D=250\mu A$	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=80V$, $V_{GS}=0V$	---	---	1	μA
		$V_{DS}=64V$, $T_C=150^{\circ}\text{C}$	---	---	10	
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 25V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance ³	$V_{DS}=10V$, $I_D=50A$	---	68	---	S
Q_g	Total Gate Charge	$I_D=160A$	---	225	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=64V$	---	40	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$ (Note 3, 4)	---	120	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=40V$	---	90	---	ns
T_r	Rise Time	$I_D=160A$	---	970	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=25\Omega$	---	260	---	
T_f	Fall Time	(Note 3, 4)	---	410	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	8700	---	pF
C_{oss}	Output Capacitance		---	1800	---	
C_{rss}	Reverse Transfer Capacitance		---	480	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	160	A
I_{SM}	Pulsed Source Current		---	---	480	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=30A$	---	---	1.5	V

Note :

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

2.L = 0.5mH, $I_{AS} = 75A$, $V_{DD} = 25V$, $R_G = 25\Omega$, Starting $T_J = 25^{\circ}\text{C}$.3.Pulse Test: Pulse width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

4.Essentially Independent of Operating Temperature.

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

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