

General Description

The CMH90N20 uses advanced planar stripe DMOS technology and design to provide excellent RDS(ON).

These devices are well suited for high power inverter, cutting machine.

Features

- $V_{DS} = 200V, I_D = 100A$
 $R_{DS(ON)} = 25m\Omega @ V_{GS} = 10V$
- Low on-resistance
- Fast Switching
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	200	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D @ T_C = 25^\circ C$	Continuous Drain Current	100	A
$I_D @ T_C = 100^\circ C$	Continuous Drain Current	70.5	A
I_{DM}	Pulsed Drain Current	400	A
EAS	Single Pulse Avalanche Energy ¹	3240	mJ
$P_D @ T_C = 25^\circ C$	Total Power Dissipation	550	W
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 175	$^\circ C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.38	$^\circ C/W$

Product Summary

BVDSS	RDSON	ID
200V	25m Ω	100A

Applications

- DC-AC converters
- SMPS Power
- UPS (Uninterruptible Power Supply)

TO-247A-LL Pin Configuration



TO-247A-LL
(CMH90N20)

Electrical Characteristics (T_J=25°C , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =250uA	200	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =40A	---	18	25	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	3	---	4.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =200V , V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =10V , I _D =20A	---	42	---	S
Q _g	Total Gate Charge	I _D =50A	---	150	---	nC
Q _{gs}	Gate-Source Charge	V _{DS} = 100V	---	37	---	
Q _{gd}	Gate-Drain Charge	V _{GS} = 10V	---	53	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} = 100 V	---	35	---	ns
T _r	Rise Time	R _L =15Ω	---	30	---	
T _{d(off)}	Turn-Off Delay Time	R _G =2.5Ω	---	55	---	
T _f	Fall Time	V _{GS} = 10V	---	25	---	
C _{iss}	Input Capacitance	V _{DS} =50V , V _{GS} =0V , f=1MHz	---	6800	---	pF
C _{oss}	Output Capacitance		---	530	---	
C _{riss}	Reverse Transfer Capacitance		---	210	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	100	A
I _{SM}	Pulsed Source Current		---	---	400	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =40A , T _J =25°C	---	---	1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=50V,V_{GS}=10V,L=1mH,I_{AS}=80.5A.

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