

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

- Low On-Resistance
- Improved dv/dt capability
- 100% avalanche tested
- RoHS Compliant

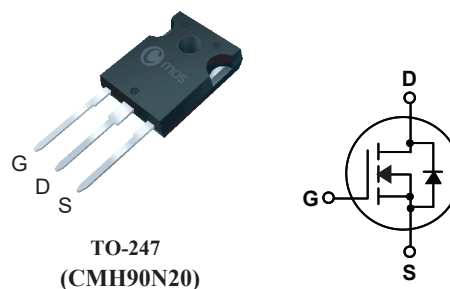
Product Summary

BVDSS	R _{DS(on)} max.	ID
200V	25mΩ	100A

Applications

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

TO-247 Pin Configuration



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°C	Continuous Drain Current	100	A
I _D @T _C =100°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°C	Total Power Dissipation	550	W
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance Junction-ambient	---	62.5	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	0.23	°C/W

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	---	21	25	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} =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	---	125	---	nC
Q _{gs}	Gate-Source Charge	V _{DS} =100V	---	45	---	
Q _{gd}	Gate-Drain Charge	V _{GS} =10V	---	48	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =125 V	---	80	---	ns
T _r	Rise Time	I _D =100A	---	26	---	
T _{d(off)}	Turn-Off Delay Time	R _G =25Ω	---	300	---	
T _f	Fall Time	V _{GS} =15V	---	80	---	
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz	---	7500	---	pF
C _{oss}	Output Capacitance		---	1000	---	
C _{rss}	Reverse Transfer Capacitance		---	120	---	

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	---	---	1.4	V
t _{rr}	Reverse Recovery Time	V _{GS} =0V, I _S =80A	---	245	---	ns
Q _{rr}	Reverse Recovery Charge	di/dt =100A/μs	---	19	---	μC

Note :

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

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

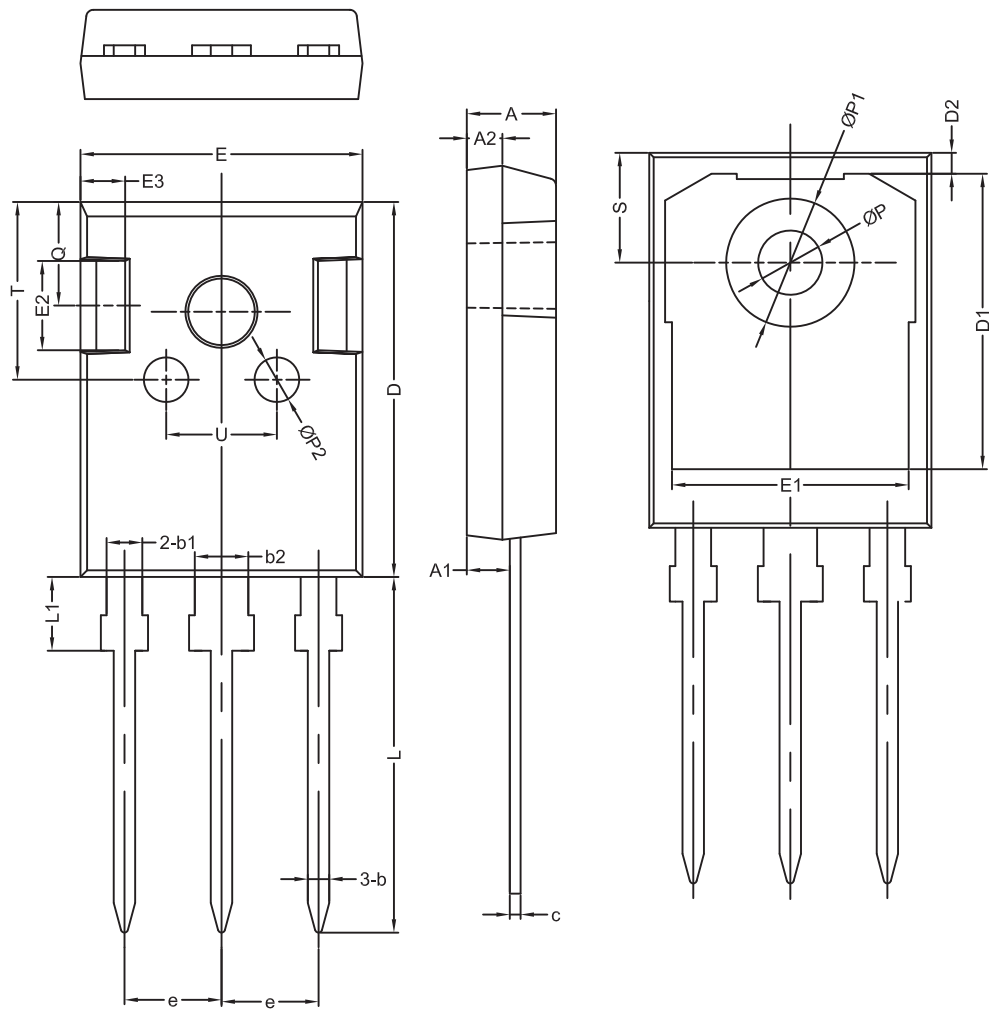
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Cmos reserves the right to improve product design ,functions and reliability without notice.Please refer to the latest version of specification.

Package Dimension

TO-247

Unit :mm



符号	机械尺寸/mm			符号	机械尺寸/mm		
	最小值	典型值	最大值		最小值	典型值	最大值
A	4.80	5.00	5.20	E2		5.00	
A1	2.21	2.41	2.61	E3		2.50	
A2	1.90	2.00	2.10	e		5.44	
b	1.10	1.20	1.35	L	19.42	19.92	20.42
b1		2.00		L1		4.13	
b2		3.00		P	3.50	3.60	3.70
c	0.55	0.60	0.75	P1		7.19	
D	20.80	21.00	21.20	P2		2.50	
D1		16.55		Q		5.80	
D2		1.20		S	6.05	6.15	6.25
E	15.60	15.80	16.0	T		10.00	
E1		13.30		U		6.20	