CMH50N30

300V N-Channel MOSFET

General Description

The CMH50N30 uses advanced planar stripe DMOS technology and design to provide excellent RDS(ON).

These devices are well suited for high efficient switching mode power supplies and active power factor correction.

Product Summary

BVDSS	RDSON	ID
300V	55mΩ	50A

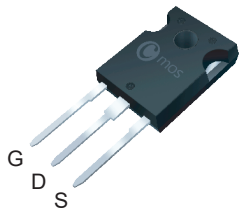
Applications

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

Features

- Low on-resistance
- 100% avalanche tested
- RoHS Compliant

TO-247A-LL Pin Configuration



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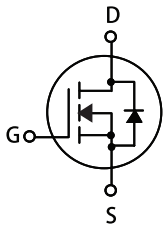

Type	Package	Marking
CMH50N30	TO-247	CMH50N30

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	300	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current	50	A
I_D@T_C=100℃	Continuous Drain Current	32	A
I_{DM}	Pulsed Drain Current	200	A
EAS	Single Pulse Avalanche Energy [1]	3150	mJ
P_D@T_C=25℃	Total Power Dissipation	280	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62.5	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.63	℃/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	300	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=25A	---	51	55	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
gfs	Forward Transconductance	V_{DS}=10V , I_D=25A	---	48	---	S
Q_g	Total Gate Charge	I_D =50A V_{DS}=160V V_{GS}=10V	---	80	---	nC
Q_{gs}	Gate-Source Charge		---	19	---	
Q_{gd}	Gate-Drain Charge		---	26	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=100 V I_D =50A R_G=25Ω	---	60	---	ns
T_r	Rise Time		---	30	---	
$T_{d(off)}$	Turn-Off Delay Time		---	170	---	
T_f	Fall Time		---	45	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	6200	---	pF
C_{oss}	Output Capacitance		---	620	---	
C_{rss}	Reverse Transfer Capacitance		---	60	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	50	A
I_{SM}	Pulsed Source Current		---	---	200	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=25A, T_J=25℃	---	0.84	1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=50V,V_{GS}=10V,L=5mH,I_{AS}=35.5A.

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