

General Description

This Power MOSFET is produced using Cmos's advanced planar stripe DMOS technology. This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficient switched mode power supplies and active power factor correction.

Features

- Fast Switching
- 100% avalanche tested
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	250	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	50	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	35	A
I_{DM}	Pulsed Drain Current	200	A
EAS	Single Pulse Avalanche Energy ¹	1123	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	280	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	40	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.45	$^\circ\text{C}/\text{W}$

Product Summary

BVDSS	RDSON	ID
250V	69m Ω	50A

Applications

- motor drive
- Switching mode regulator

TO-247 Pin Configuration



Type	Package	Marking
CMH65N25	TO-247	CMH65N25

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	250	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=25A$	---	60	69	$m\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=250V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=25A$	---	34	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	3	---	Ω
Q_g	Total Gate Charge	$I_D=40A$	---	85	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=200V$	---	25	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	46	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=125V$	---	70	---	ns
T_r	Rise Time	$I_D=40A$	---	580	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=25\Omega$	---	120	---	
T_f	Fall Time		---	165	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	3300	---	pF
C_{oss}	Output Capacitance		---	400	---	
C_{rss}	Reverse Transfer Capacitance		---	40	---	

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	$V_{GS}=0V$, $I_S=25A$, $T_J=25^{\circ}\text{C}$	---	0.86	1.5	V

Note :

1.The EAS data shows Max. rating . The test condition is $V_{DD}=50V$, $V_{GS}=10V$, $L=1\text{mH}$, $I_{AS}=47.4A$.

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Typical Characteristics

