

General Description

The CMH80N25 uses advanced planar stripe DMOS technology and design

to provide excellent RDS(ON) .

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

Product Summary

BVDSS	RDS(ON)	ID
250V	46mΩ	80A

Applications

- DC-AC converters
- SMPS
- Uninterruptible Power Supply

TO-247 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	250	V
V_{GS}	Gate-Source Voltage	± 30	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	80	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	56	A
I_{DM}	Pulsed Drain Current	320	A
EAS	Single Pulse Avalanche Energy ¹	2112	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	400	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	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.31	$^\circ\text{C/W}$

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	$V_{GS}=10V$, $I_D=32.5A$	---	40	46	$m\Omega$
		$V_{GS}=6V$, $I_D=25A$	---	43	50	
$V_{GS(th)}$	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	$V_{GS}=\pm 30V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=40A$	---	50	---	S
Q_g	Total Gate Charge	$I_D=30A$	---	164	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=125V$	---	30	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	85	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=125V$	---	23	---	ns
T_r	Rise Time	$I_D=30A$	---	23	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=2\Omega$	---	60	---	
T_f	Fall Time	$V_{GS}=10V$	---	17	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1MHz$	---	5700	---	pF
C_{oss}	Output Capacitance		---	660	---	
C_{rss}	Reverse Transfer Capacitance		---	20	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	80	A
I_{SM}	Pulsed Source Current		---	---	320	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=32.5A$, $T_J=25^{\circ}\text{C}$	---	0.83	1.5	V

Note :

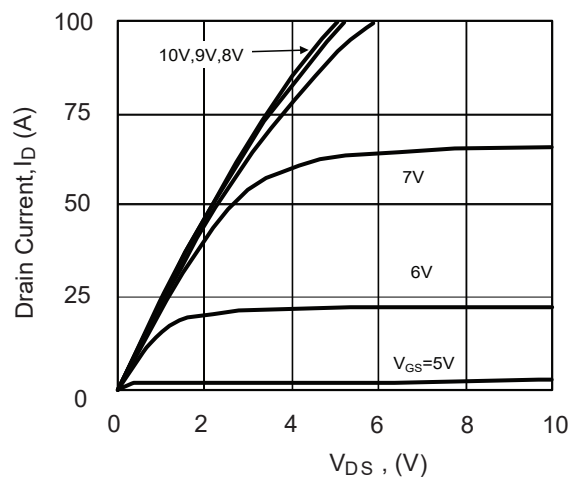
1.The EAS data shows Max. rating . The test condition is $V_{DD}=80V$, $V_{GS}=10V$, $L=1mH$, $I_{AS}=65A$.

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

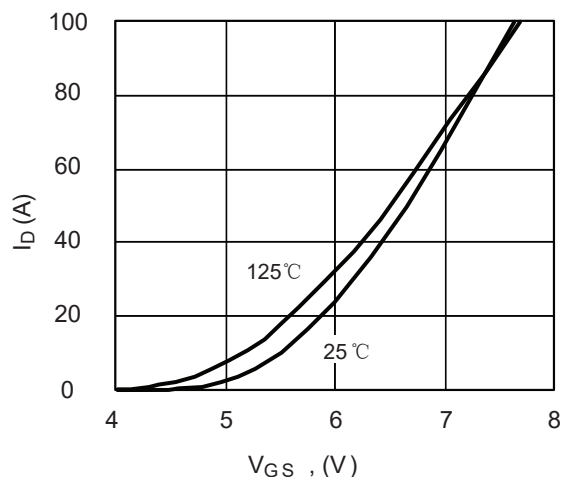
Cmos assumes no liability for customers' product design or applications.

Cmos reserves the right to improve product design , functions and reliability without notice.

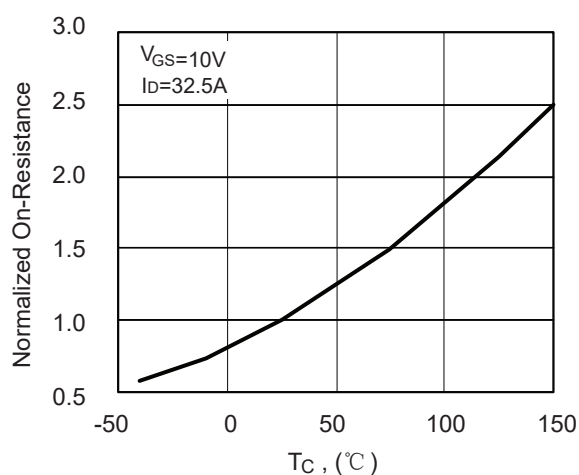
Typical Characteristics



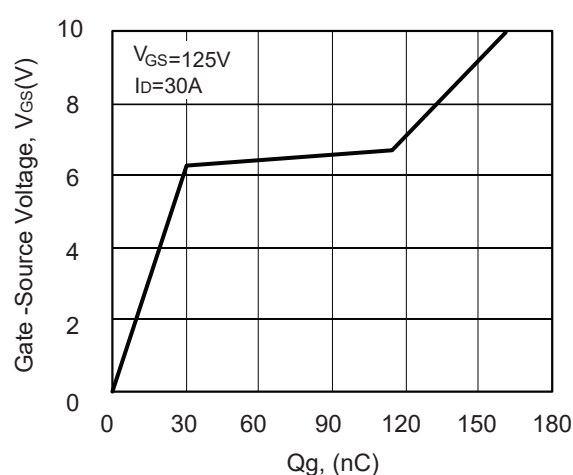
Typical Output Characteristics



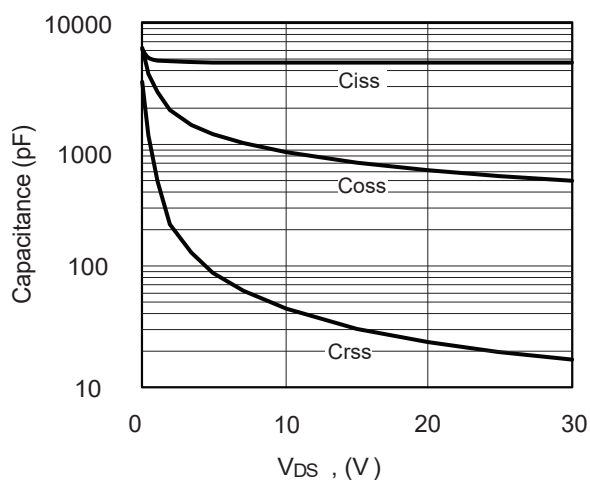
Transfer Characteristics



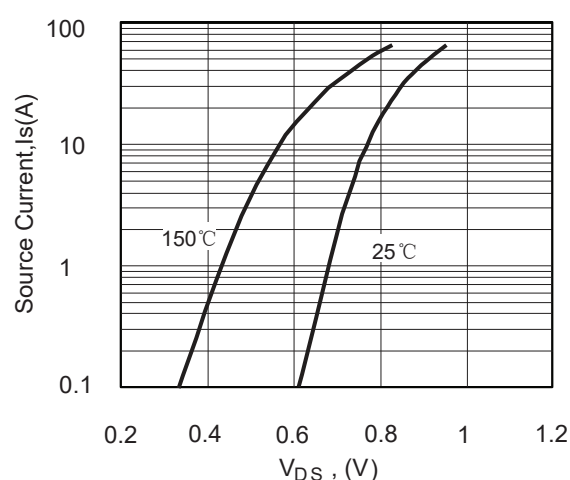
On-Resistance vs. Junction Temperature



Typical Total gate Charge Characteristics



Capacitance Characteristics



Body-Diode Forward Voltage Variation with Source Current