

General Description

The CMH82N25 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

- Low on-resistance
- Fast Switching
- RoHS Compliant

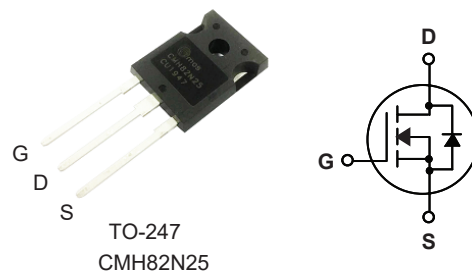
Product Summary

BVDSS	R _{DS(on)} max.	ID
250V	35mΩ	90A

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	250	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Continuous Drain Current	90	A
I _D @T _C =100°C	Continuous Drain Current	58	A
I _{DM}	Pulsed Drain Current	360	A
EAS	Single Pulse Avalanche Energy ¹	3610	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	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance Junction-ambient	---	40	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	0.23	°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	$V_{GS}=10V$, $I_D=40A$	---	29	35	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	2	---	4.0	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=250V$, $V_{GS}=0V$	---	---	25	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	±100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=20A$	---	48	---	S
Q_g	Total Gate Charge	$I_D=82A$	---	125	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=250V$	---	45	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	50	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=125V$	---	80	---	ns
T_r	Rise Time	$I_D=82A$	---	26	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=25\Omega$	---	295	---	
T_f	Fall Time	$V_{GS}=15V$	---	80	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1MHz$	---	7000	---	pF
C_{oss}	Output Capacitance		---	780	---	
C_{rss}	Reverse Transfer Capacitance		---	70	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	90	A
I_{SM}	Pulsed Source Current		---	---	360	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=40A$, $T_J=25^{\circ}\text{C}$	---	0.85	1.5	V
t_{rr}	Reverse Recovery Time	$di/dt = 100A/\mu s$	---	324	---	ns
Q_{rr}	Reverse Recovery Charge	$I_S=82A$, $V_{GS}=0V$	---	21	---	nC

Note :

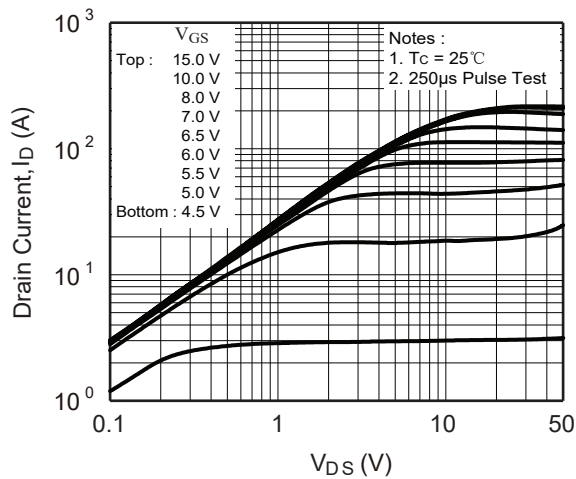
1.The EAS data shows Max. rating . The test condition is $V_{DD}=80V$, $V_{GS}=10V$, $L=5mH$, $I_{AS}=38A$.

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

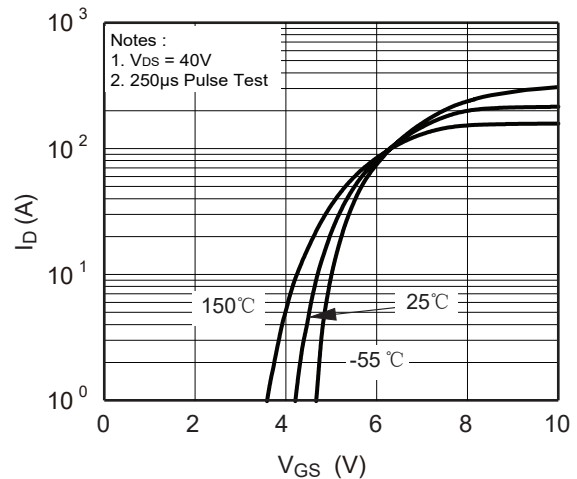
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Cmos reserves the right to improve product design ,functions and reliability without notice.Please refer to the latest version of specification.

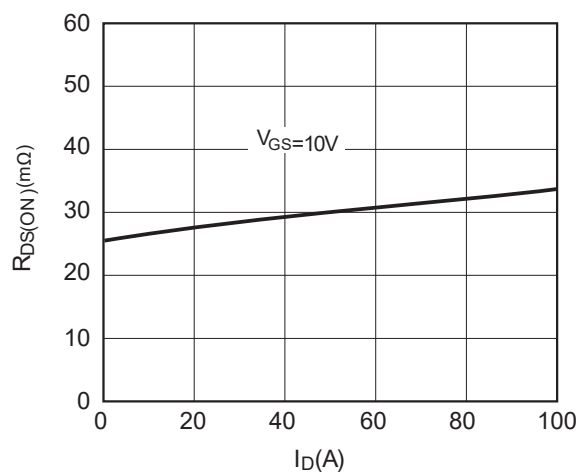
Typical Characteristics



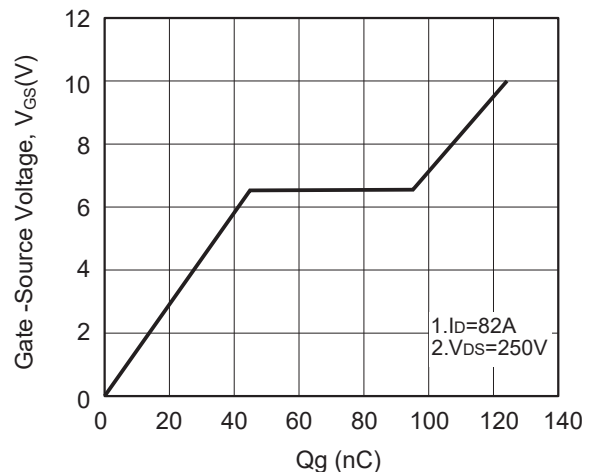
Typical Output Characteristics



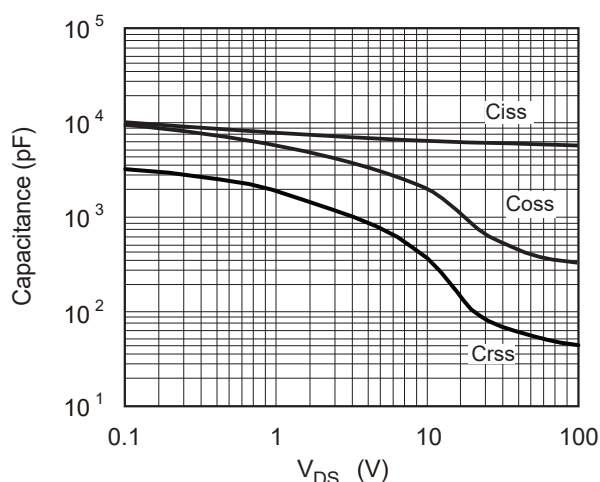
Transfer Characteristics



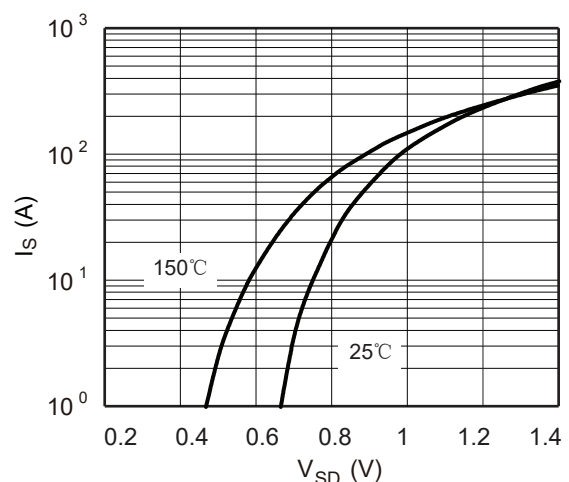
On-Resistance vs. Drain Current and Gate Voltage



Typical Total gate Charge Characteristics

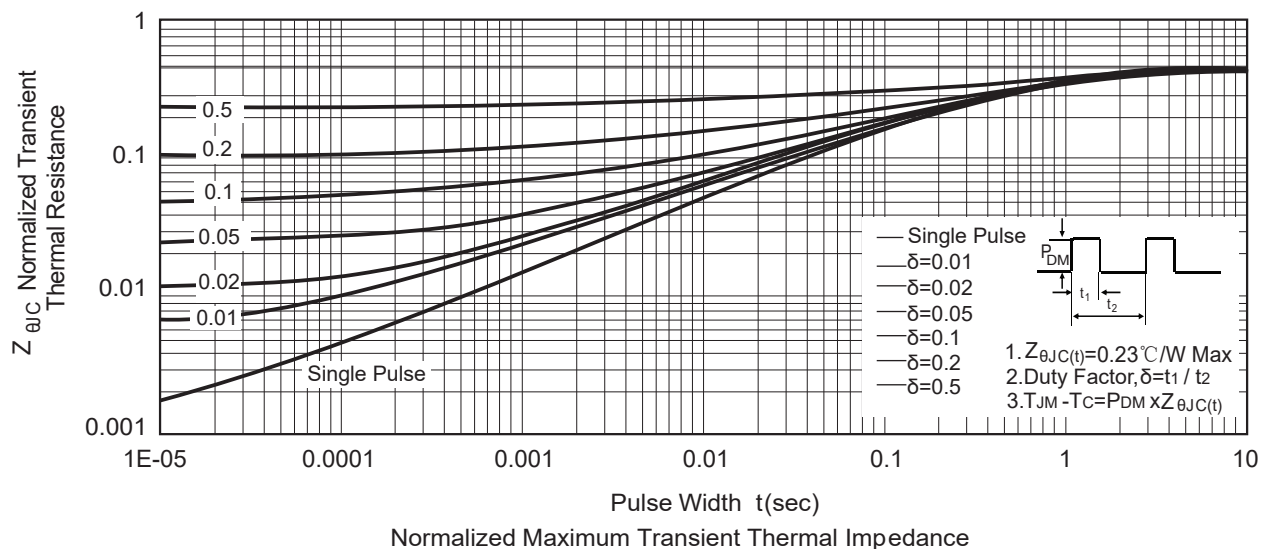
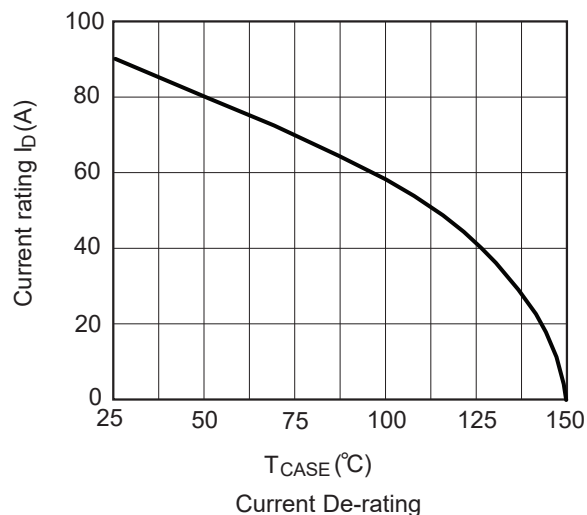
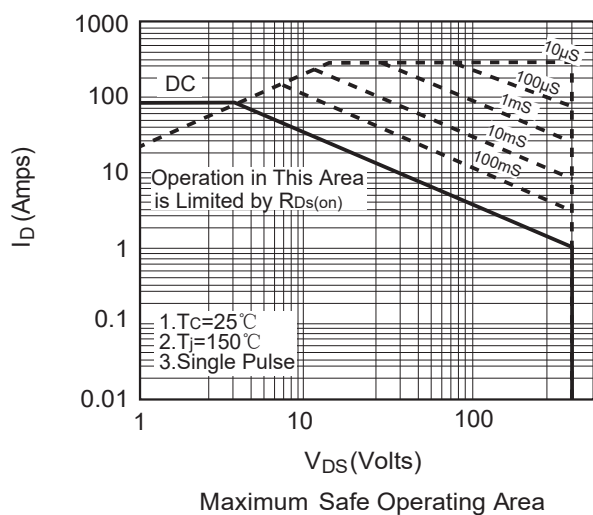
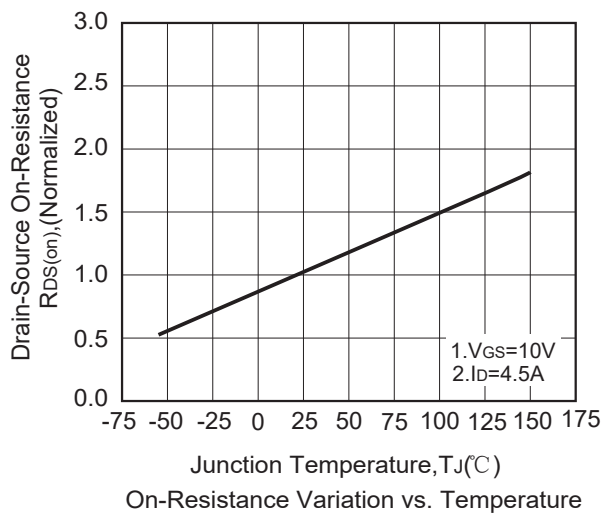
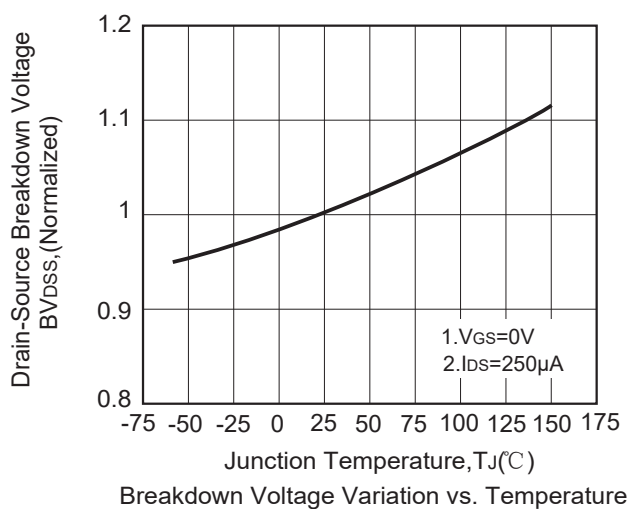


Capacitance Characteristics



Body-Diode Characteristics

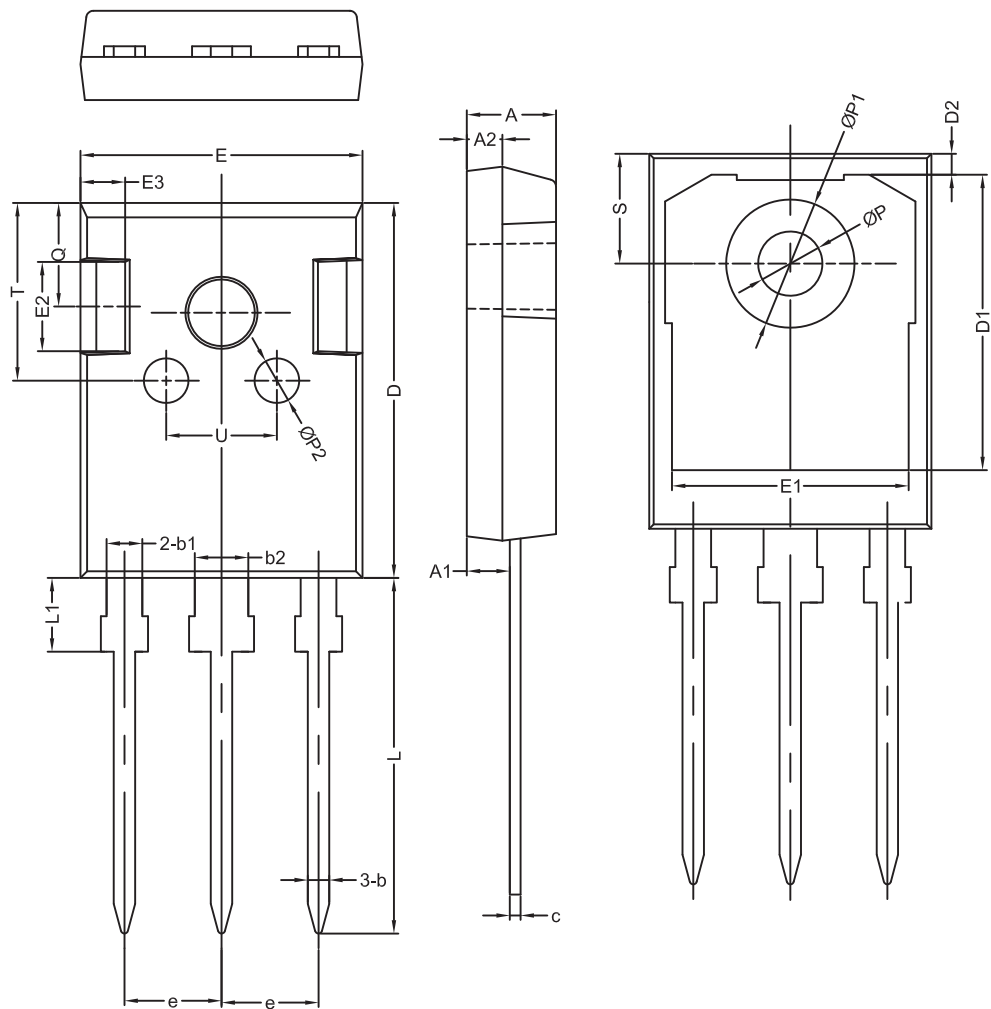
Typical Characteristics



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	