

CMH029N10

100V, 2.4mΩ typ., 150A N-Channel MOSFET

General Description

The CMH029N10 uses advanced SGT technology to provide excellent RDS(ON). This device is ideal for high-frequency switching and synchronous rectification.

Features

- Low on-resistance
- Fast Switching
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	150	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	120	A
I_{DM}	Pulsed Drain Current	600	A
EAS	Single Pulse Avalanche Energy ¹	3240	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	500	W
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 175	$^\circ C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient(Steady-State)	---	40	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-case(Steady-State)	---	0.3	$^\circ C/W$

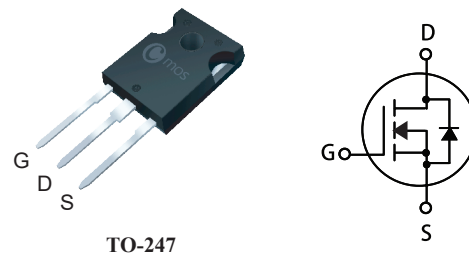
Product Summary

BVDSS	R _{DS(on)} max.	ID
100V	2.9mΩ	150A

Applications

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

TO-247 Pin Configuration



Type	Package	Marking
CMH029N10	TO-247	CMH029N10

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	100	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =28A	---	2.4	2.9	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} =100V , 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 =25A	---	60	---	S
Q _g	Total Gate Charge	I _D =50A	---	150	---	nC
Q _{gs}	Gate-Source Charge	V _{DS} =50V	---	42	---	
Q _{gd}	Gate-Drain Charge	V _{GS} = 10V	---	30	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =50V	---	35	---	ns
T _r	Rise Time	I _D =50A	---	20	---	
T _{d(off)}	Turn-Off Delay Time	R _G =3Ω	---	125	---	
T _f	Fall Time	V _{GS} = 10V	---	50	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	15000	---	pF
C _{oss}	Output Capacitance		---	4000	---	
C _{riss}	Reverse Transfer Capacitance		---	850	---	

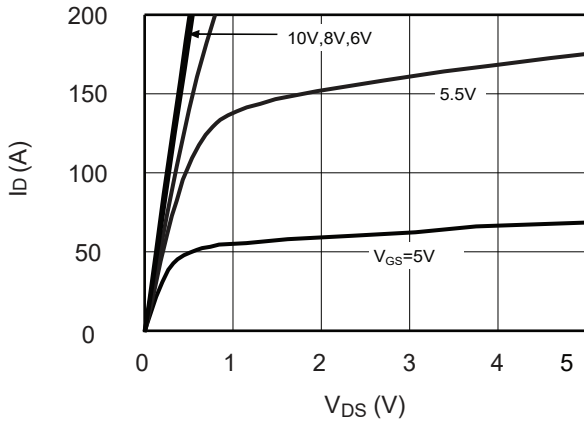
Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	150	A
I _{SM}	Pulsed Source Current		---	---	600	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =28A , T _J =25°C	---	0.81	1.2	V

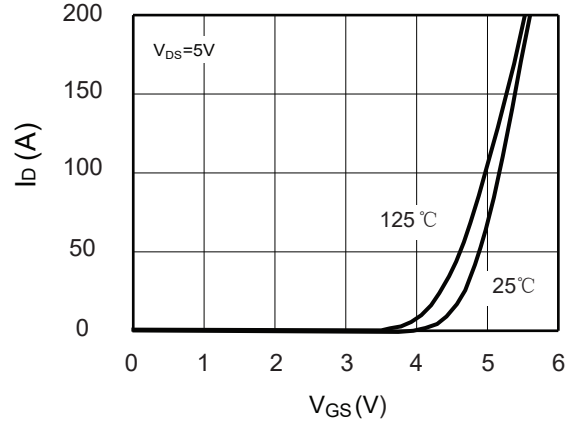
Notes:

1.The EAS data shows Max. rating .The test condition is V_{bs}=80V , V_{GS}=10V , L=20mH , I_{AS}=18A.

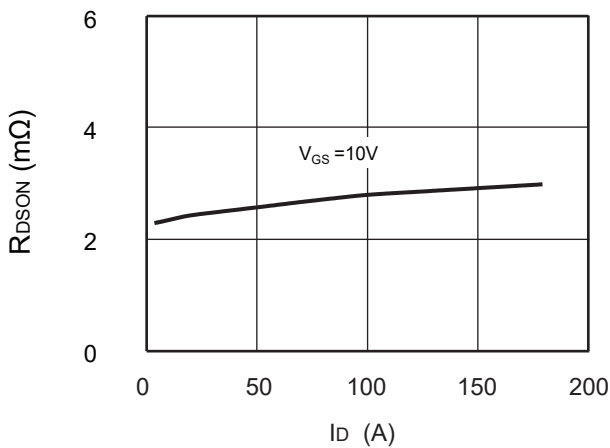
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Cmos reserves the right to improve product design ,functions and reliability without notice.

Typical Characteristics


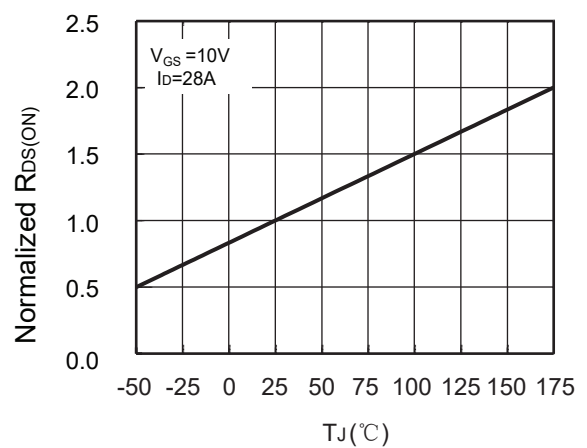
Output Characteristics



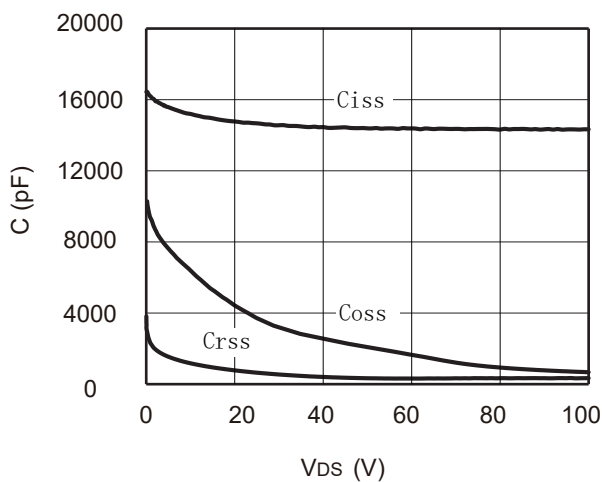
transfer characteristics



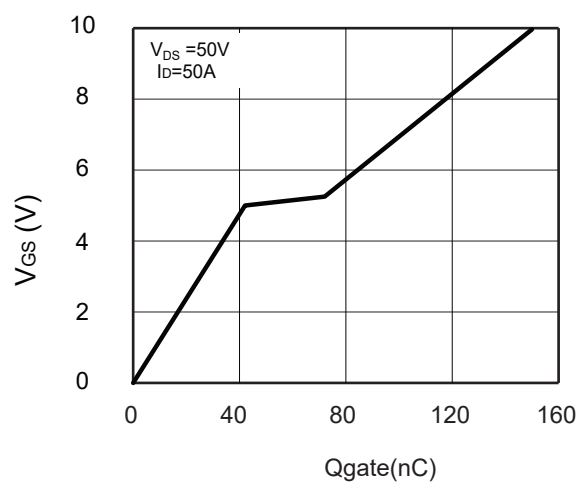
drain-source on-resistance



On-Resistance vs. Junction Temperature



Capacitance Characteristics



Gate charge vs gate-source voltage