CMH029N10

100V, 2.4mΩ typ., 200A 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.

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
100V	2.9mΩ	200A

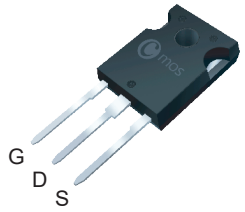
Applications

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

Features

- Low on-resistance
- Fast Switching
- RoHS Compliant

TO-247 Pin Configuration



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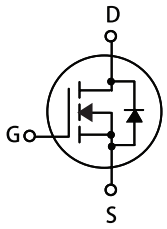

Type	Package	Marking
CMH029N10	TO-247	CMH029N10

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℃	Continuous Drain Current	200	A
I_D@T_C=100℃	Continuous Drain Current	140	A
I_{DM}	Pulsed Drain Current	800	A
EAS	Single Pulse Avalanche Energy [1]	3240	mJ
P_D@T_C=25℃	Total Power Dissipation	500	W
T_{STG}	Storage Temperature Range	-55 to 175	℃
T_J	Operating Junction Temperature Range	-55 to 175	℃

Thermal Data

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

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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	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
gfs	Forward Transconductance	V_{DS}=10V , I_D=25A	---	60	---	S
Q_g	Total Gate Charge	I_D =50A V_{DS}=50V V_{GS}=10V	---	150	---	nC
Q_{gs}	Gate-Source Charge		---	42	---	
Q_{gd}	Gate-Drain Charge		---	30	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=50V I_D =50A R_G=3Ω V_{GS}=10V	---	35	---	ns
T_r	Rise Time		---	20	---	
$T_{d(off)}$	Turn-Off Delay Time		---	125	---	
T_f	Fall Time		---	50	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	15000	---	pF
C_{oss}	Output Capacitance		---	4000	---	
C_{rss}	Reverse Transfer Capacitance		---	850	---	

Diode Characteristics

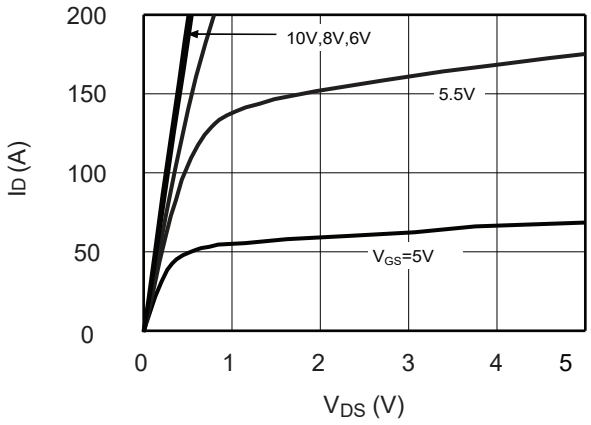
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	200	A
I_{SM}	Pulsed Source Current		---	---	800	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=28A, T_J=25℃	---	0.81	1.2	V

Notes:

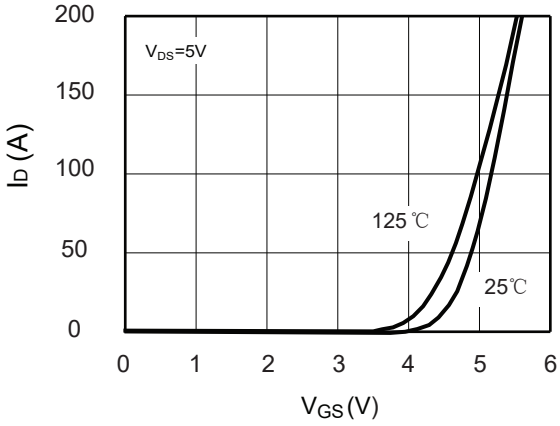
1.The EAS data shows Max. rating .The test condition is V_{DS}=80V , V_{GS}=10V , L=20mH , I_{AS}=18A.

This product has been designed and qualified for the counsumer market.
Cmos assumes no liability for customers' product design or applications.
Cmos reserver the right to improve product design ,functions and reliability wihtout notice.

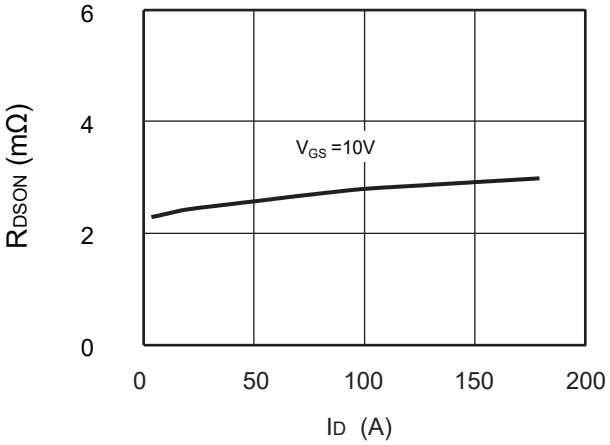
Typical Characteristics



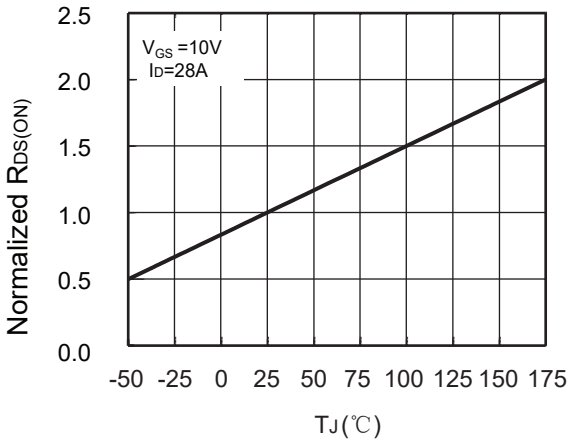
Output Characteristics



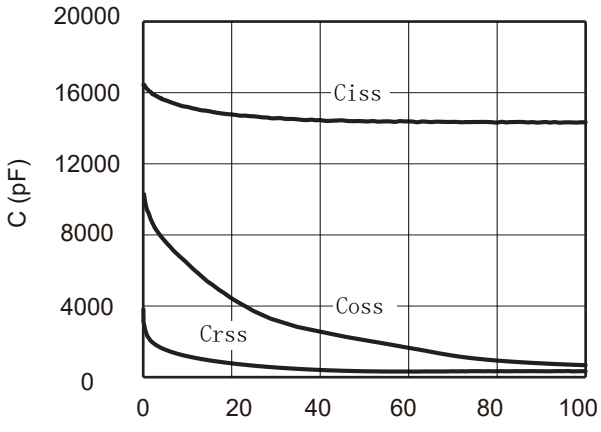
transfer characteristics



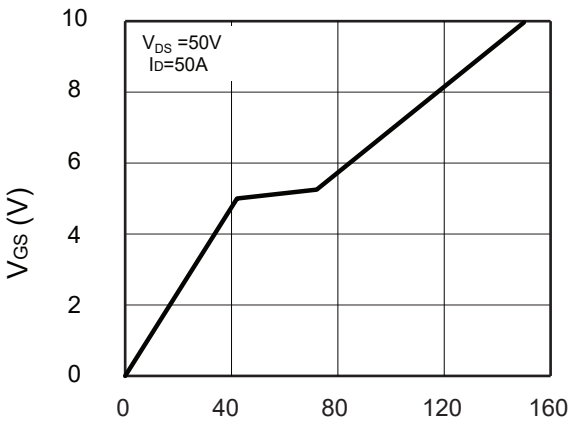
drain-source on-resistance



On-Resistance vs. Junction Temperature



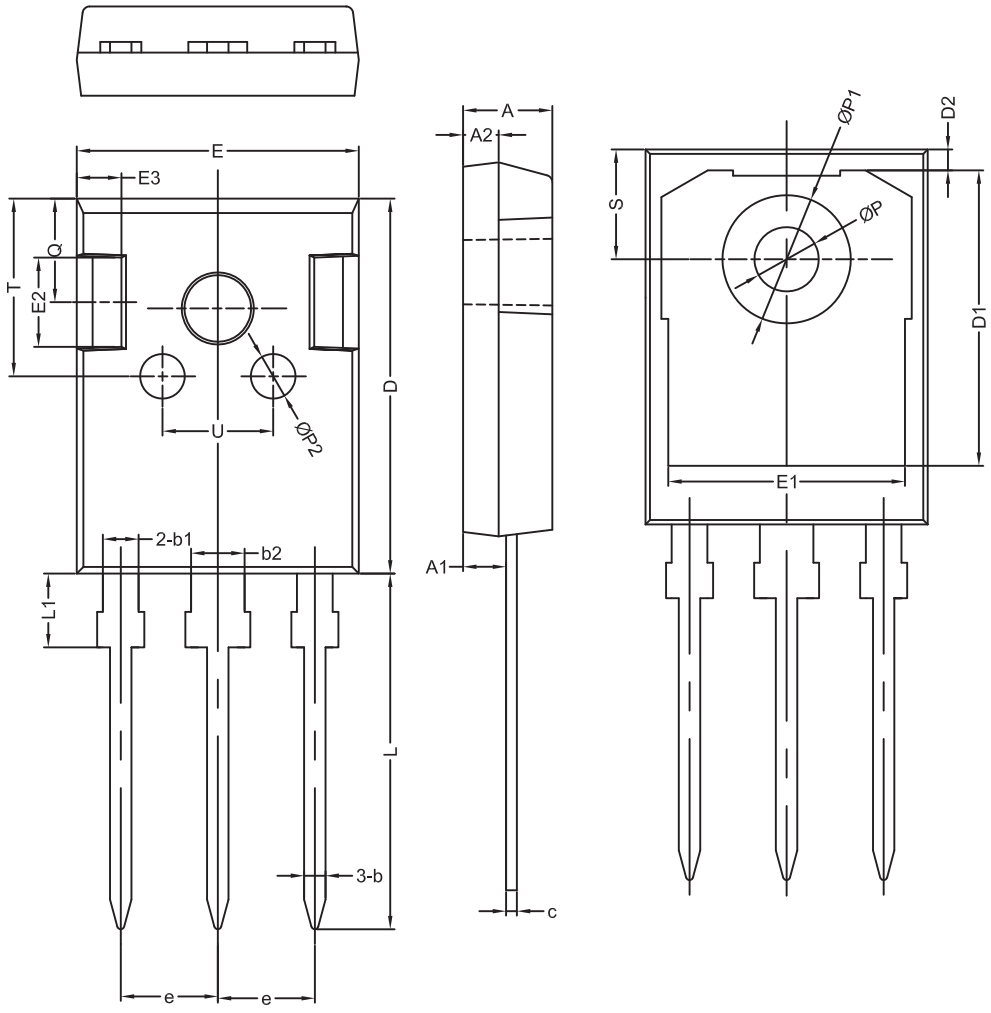
Capacitance Characteristics



Gate charge vs gate-source voltage

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	