

# 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.

## 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	$\pm 20$	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	200	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	140	A
$I_{DM}$	Pulsed Drain Current	800	A
EAS	Single Pulse Avalanche Energy <sup>1</sup>	3240	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	500	W
$T_{STG}$	Storage Temperature Range	-55 to 150	$^\circ C$
$T_J$	Operating Junction Temperature Range	-55 to 150	$^\circ C$

## Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient(min. footprint)	---	55	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-case(Steady-State)	---	0.25	$^\circ C/W$

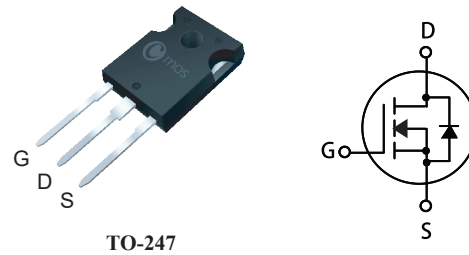
## Product Summary

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

## Applications

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

## TO-247 Pin Configuration



Type	Package	Marking
CMH029N10	TO-247	CMH029N10

**Electrical Characteristics (T<sub>J</sub>=25°C , unless otherwise noted)**

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V , I <sub>D</sub> =250uA	100	---	---	V
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance	V <sub>GS</sub> =10V , I <sub>D</sub> =28A	---	2.4	2.9	mΩ
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250uA	2	---	4	V
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =100V , V <sub>GS</sub> =0V	---	---	1	uA
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> =±20V , V <sub>DS</sub> =0V	---	---	±100	nA
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =10V , I <sub>D</sub> =25A	---	60	---	S
Q <sub>g</sub>	Total Gate Charge	I <sub>D</sub> =50A	---	150	---	nC
Q <sub>gs</sub>	Gate-Source Charge	V <sub>DS</sub> =50V	---	42	---	
Q <sub>gd</sub>	Gate-Drain Charge	V <sub>GS</sub> = 10V	---	30	---	
T <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DD</sub> =50V	---	35	---	ns
T <sub>r</sub>	Rise Time	I <sub>D</sub> =50A	---	20	---	
T <sub>d(off)</sub>	Turn-Off Delay Time	R <sub>G</sub> =3Ω	---	125	---	
T <sub>f</sub>	Fall Time	V <sub>GS</sub> = 10V	---	50	---	
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =25V , V <sub>GS</sub> =0V , f=1MHz	---	15000	---	pF
C <sub>oss</sub>	Output Capacitance		---	4000	---	
C <sub>rss</sub>	Reverse Transfer Capacitance		---	850	---	

**Diode Characteristics**

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I <sub>S</sub>	Continuous Source Current	V <sub>G</sub> =V <sub>D</sub> =0V , Force Current	---	---	200	A
I <sub>SM</sub>	Pulsed Source Current		---	---	800	A
V <sub>SD</sub>	Diode Forward Voltage	V <sub>GS</sub> =0V , I <sub>S</sub> =28A	---	0.81	1.4	V
t <sub>rr</sub>	Reverse Recovery Time	I <sub>S</sub> = 90A , V <sub>GS</sub> =0V	---	101	---	ns
Q <sub>rr</sub>	Reverse Recovery Charge	di/dt =100A/μs	---	338	---	nC

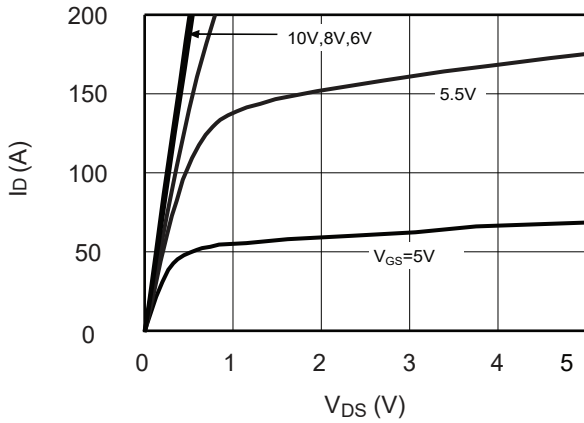
**Notes:**

1.The EAS data shows Max. rating .The test condition is V<sub>DS</sub>=80V , V<sub>GS</sub>=10V , L=20mH , I<sub>AS</sub>=18A.

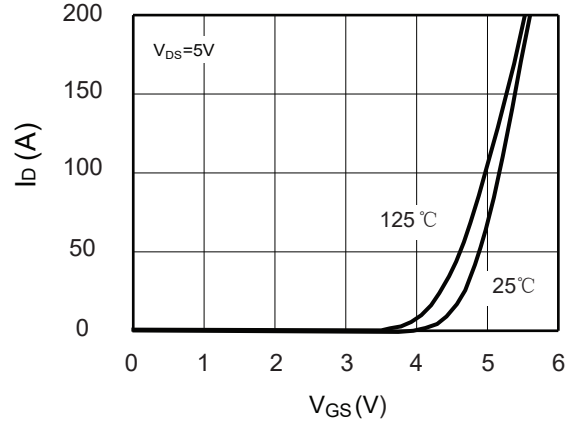
This product has been designed and qualified for the counsumer market.

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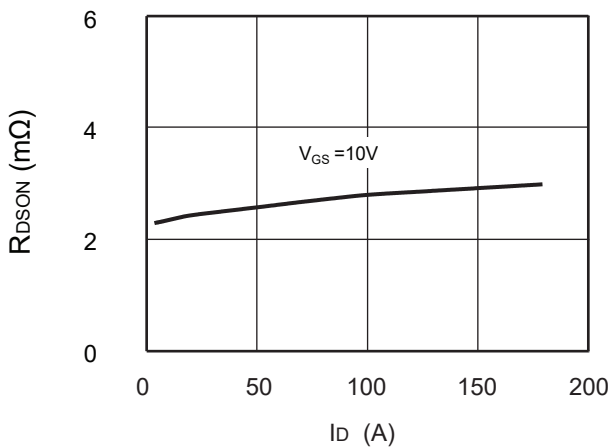
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**Typical Characteristics**


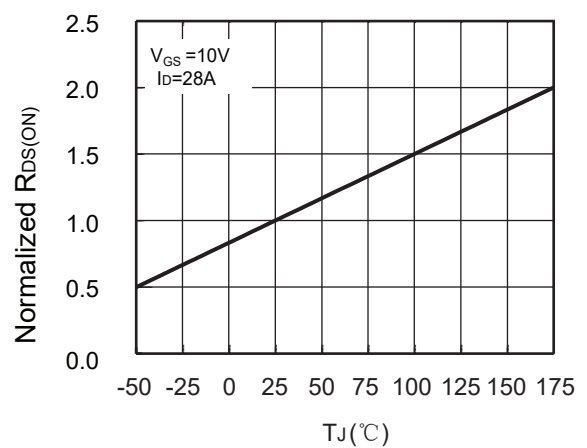
Output Characteristics



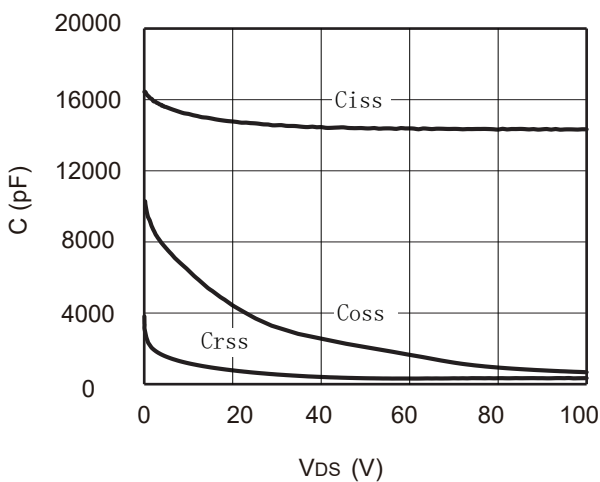
transfer characteristics



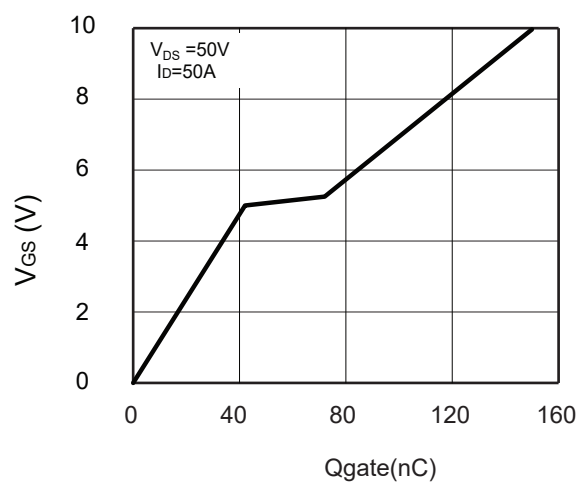
drain-source on-resistance



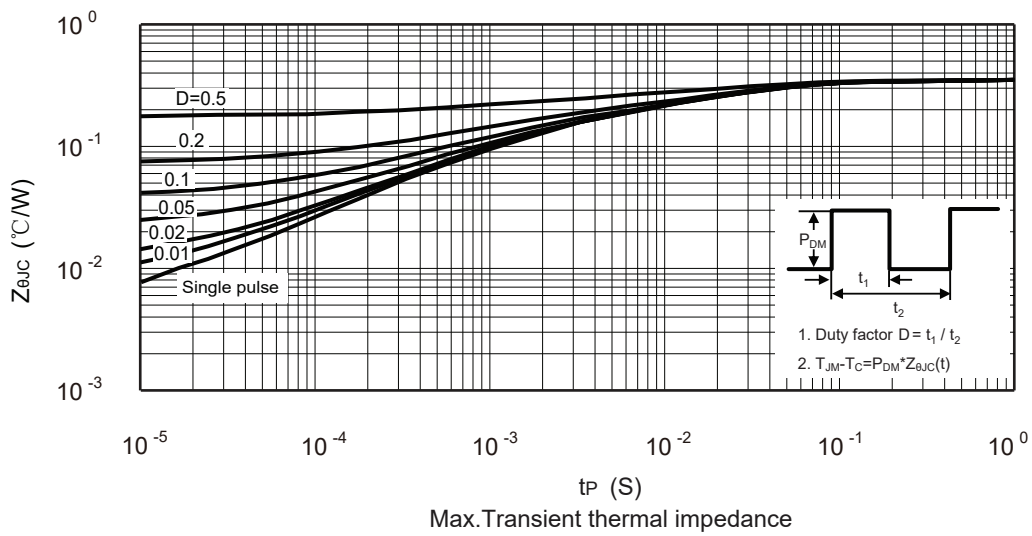
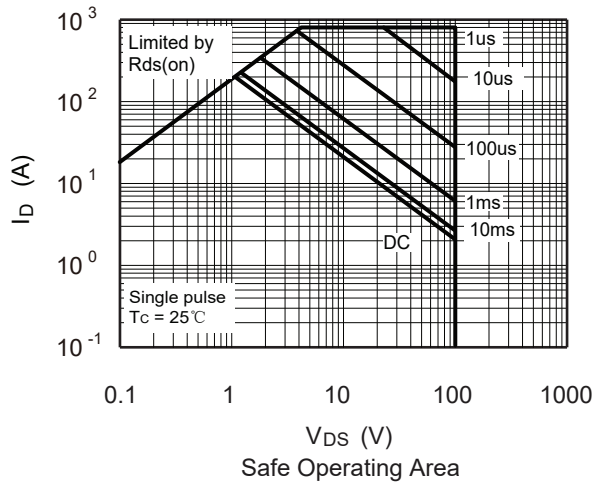
On-Resistance vs. Junction Temperature

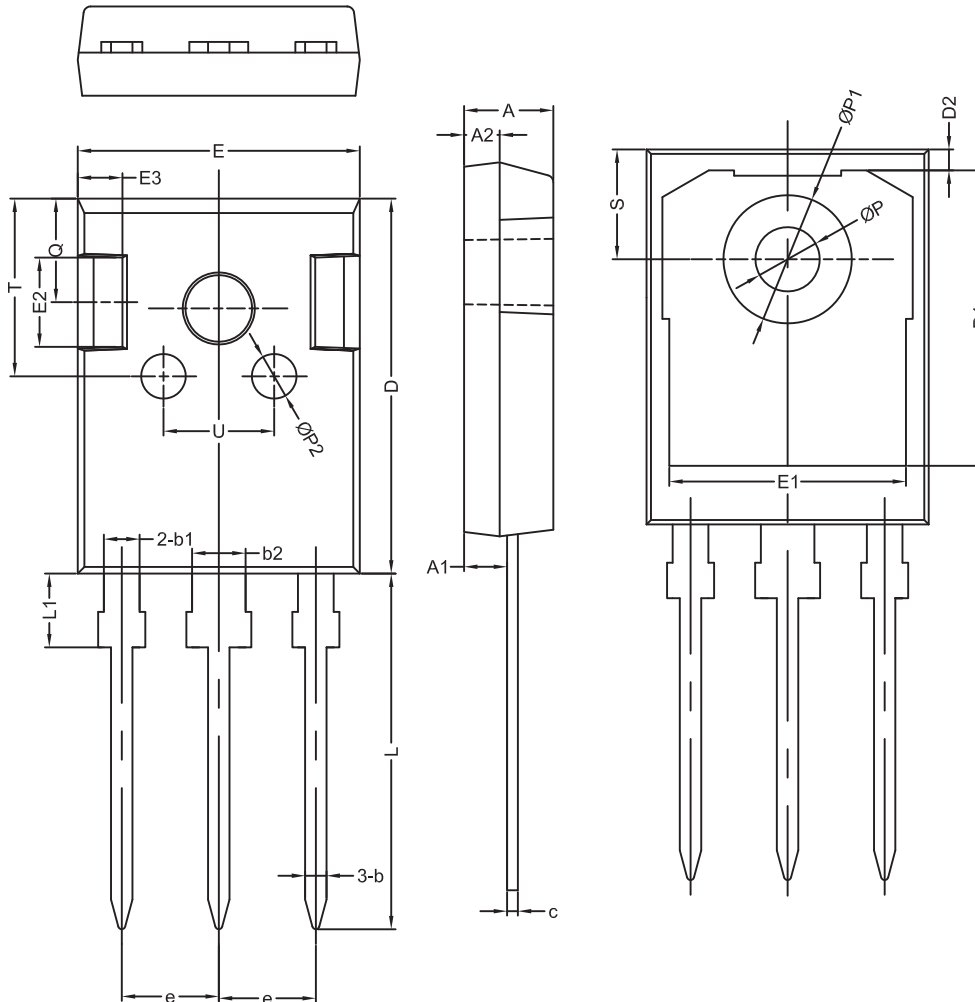


Capacitance Characteristics



Gate charge vs gate-source voltage

**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	