

General Description

The 029N10 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	2.6mΩ	120A

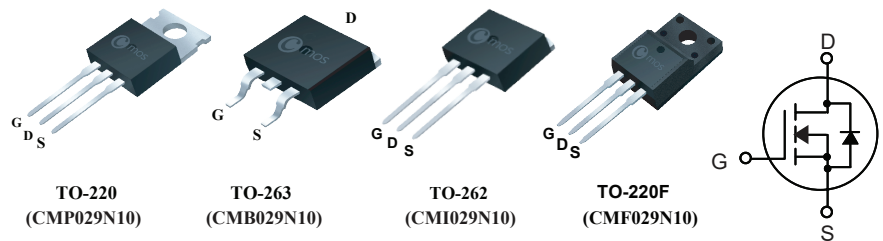
Applications

- DC/DC Converter
- Switching applications

Features

- Low on-resistance
- Fast Switching
- RoHS Compliant

TO-220/263/262/220F Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	220/263/262	220F	Units
V _{DS}	Drain-Source Voltage	100		V
V _{GS}	Gate-Source Voltage	±20		V
I _D @T _C =25°C	Continuous Drain Current	120	120*	A
I _D @T _C =100°C	Continuous Drain Current	100	100*	A
I _{DM}	Pulsed Drain Current	480	480*	A
EAS	Single Pulse Avalanche Energy (Note 1)	4305		mJ
P _D @T _C =25°C	Total Power Dissipation	400	45	W
T _{STG}	Storage Temperature Range	-55 to 175		°C
T _J	Operating Junction Temperature Range	-55 to 175		°C

* Drain current limited by maximum junction temperature.

Thermal Data

Symbol	Parameter	220/263/262	220F	Unit
R _{θJA}	Thermal Resistance Junction-ambient Max.	40	40	°C/W
R _{θJC}	Thermal Resistance Junction-case Max.	0.38	3.33	°C/W

CMP029N10/CMB029N10/CMI029N10/CMF029N10

100V, 2.3mΩ typ., 120A N-Channel MOSFET

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	---	2.3	2.6	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 =20A	---	50	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	2	---	Ω
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	---	12200	---	pF
C _{oss}	Output Capacitance		---	4150	---	
C _{rss}	Reverse Transfer Capacitance		---	650	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	120	A
I _{SM}	Pulsed Source Current		---	---	480	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =28A , T _J =25°C	---	0.78	1.2	V

Notes:

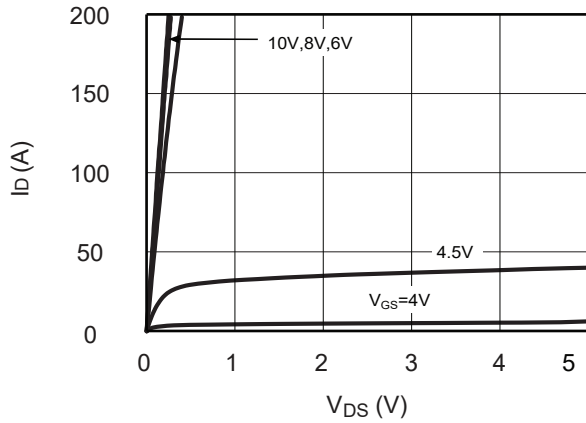
1.The EAS data shows Max. rating .The test condition is V_{DS}=80V , V_{GS}=10V , L=5mH , I_{AS}=41.5A.

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

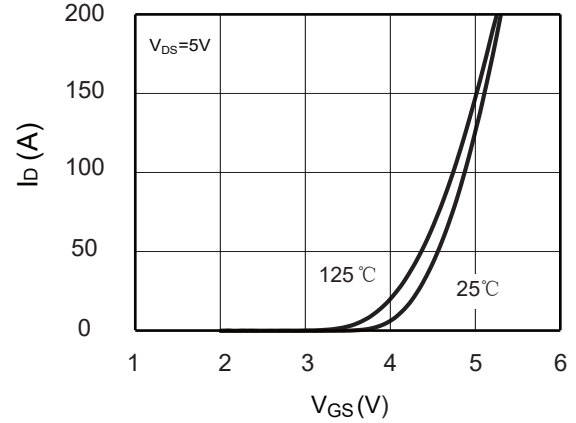
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Cmos reserves the right to improve product design ,functions and reliability without notice.

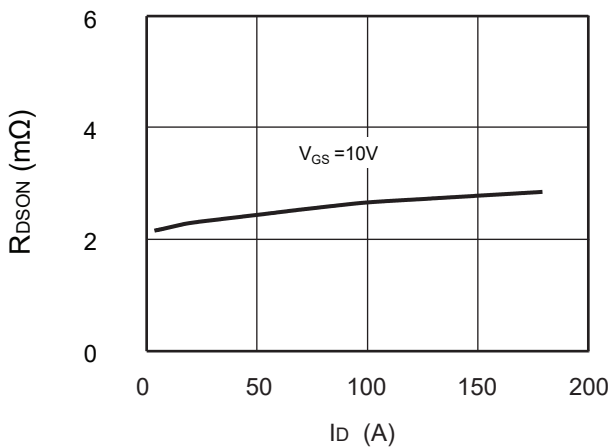
Typical Characteristics



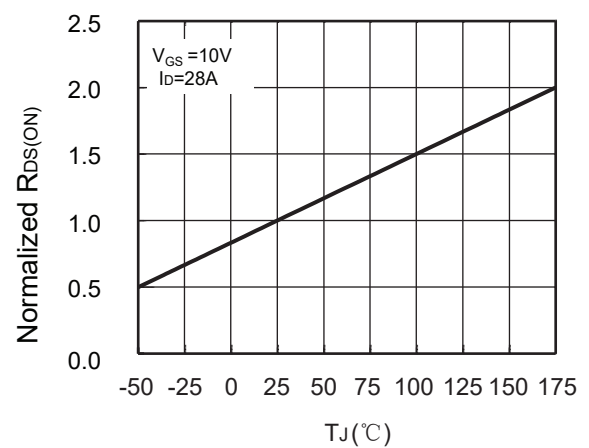
Output Characteristics



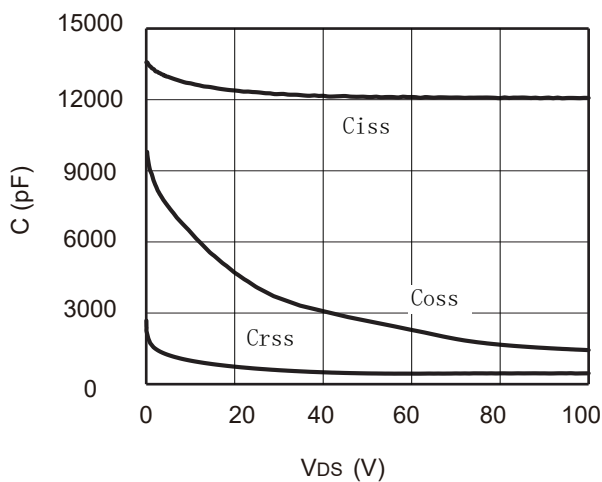
transfer characteristics



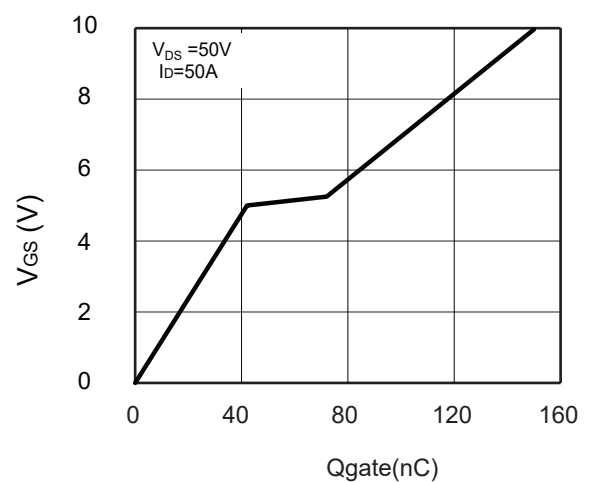
drain-source on-resistance



On-Resistance vs. Junction Temperature



Capacitance Characteristics



Gate charge vs gate-source voltage