

General Description

The CMSA028N03 uses advanced SGT technology to provide excellent RDS(ON). This is suitable device for DC/DC Converter and general purpose applications.

Features

- Low On-Resistance
- 100% avalanche tested
- Small Footprint (5x6 mm) for Compact Design
- RoHS Compliant

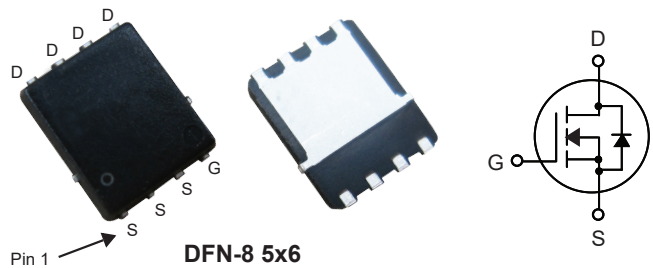
Product Summary

BVDSS	RDS(on) max.	ID
30V	2.8mΩ	100A

Applications

- DC-DC Converters
- CPU Power Delivery

DFN-8 5x6 Pin Configuration



Type	Package	Marking
CMSA028N03	DFN-8 5x6	CMSA028N03

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	30	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Continuous Drain Current	100	A
I _D @T _C =100°C	Continuous Drain Current	70	A
I _{DM}	Pulsed Drain Current	400	A
EAS	Single Pulse Avalanche Energy ¹	272	mJ
P _D @T _C =25°C	Total Power Dissipation	85	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(Steady-State)	---	50	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	1.47	°C/W

Electrical Characteristics(T =25°C, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =250uA	30	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =30A	---	2.4	2.8	mΩ
		V _{GS} =4.5V , I _D =25A	---	2.8	3.6	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1.0	---	2.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =30V , V _{GS} =0V	---	---	1	μA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =5V , I _D =30A	---	38	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	4.3	---	Ω
Q _g	Total Gate Charge	I _D =24A	---	34	---	nC
Q _{gs}	Gate-Source Charge	V _{DS} = 15V	---	5.9	---	
Q _{gd}	Gate-Drain Charge	V _{GS} = 0 to 10V	---	4.6	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} = 15V V _{GS} = 10V R _{GEN} = 6Ω , I _D =24A	---	11	---	ns
T _r	Rise Time		---	4.5	---	
T _{d(off)}	Turn-Off Delay Time		---	30	---	
T _f	Fall Time		---	4	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	2300	---	pF
C _{oss}	Output Capacitance		---	680	---	
C _{rss}	Reverse Transfer Capacitance		---	40	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	100	A
I _{SM}	Pulsed Source Current		---	---	400	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =30A , T _J =25°C	---	0.82	1.2	V

Note :

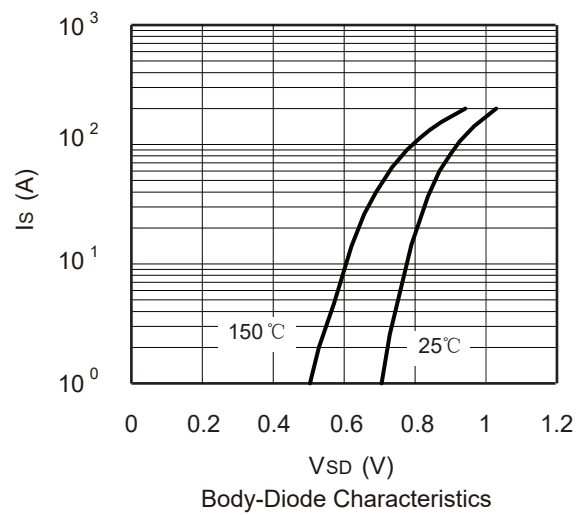
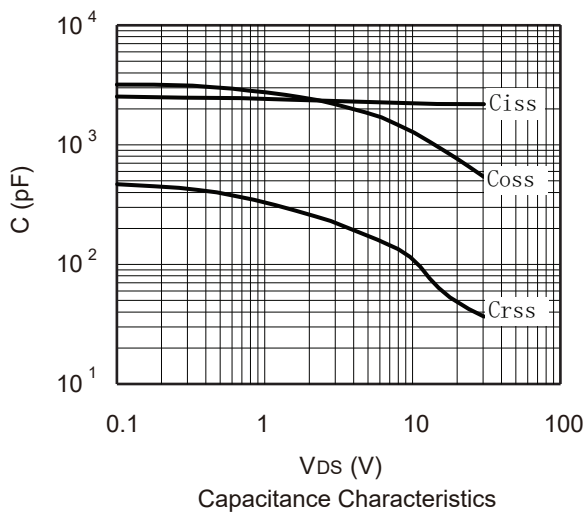
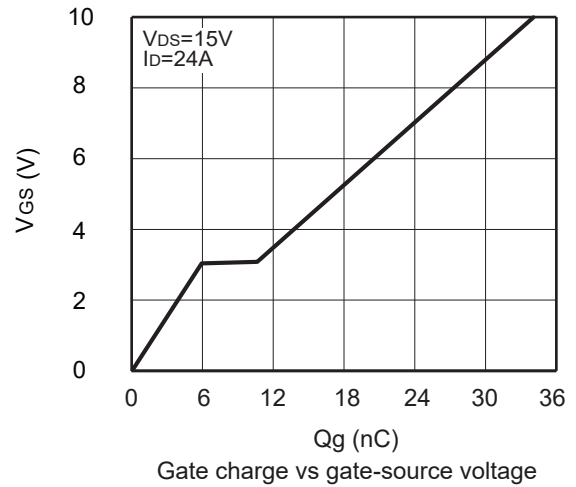
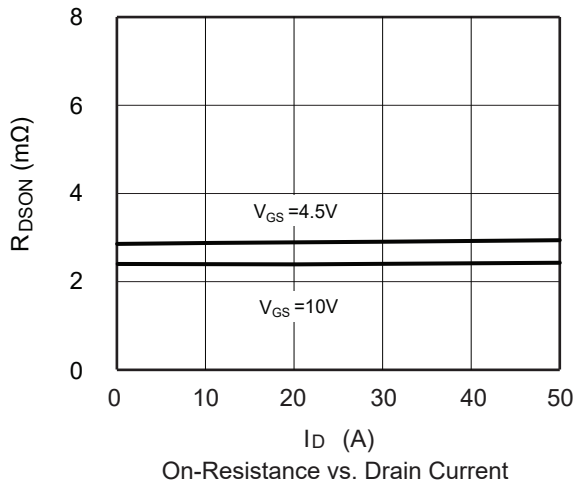
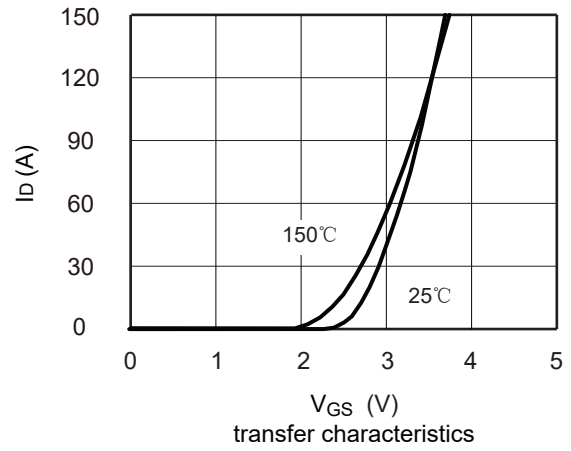
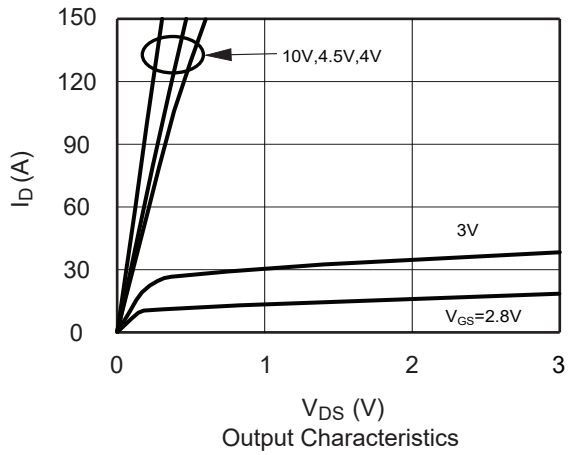
1.The EAS data shows Max. rating . The test condition is V_{DD}=25V , V_{GS}=10V , L=0.5mH , I_{AS}=33A.

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

Cmos assumes no liability for customers' product design or applications.

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

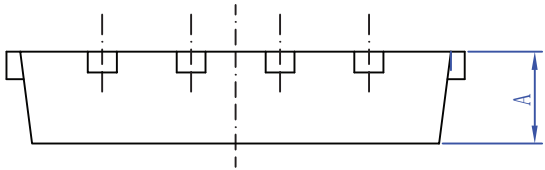
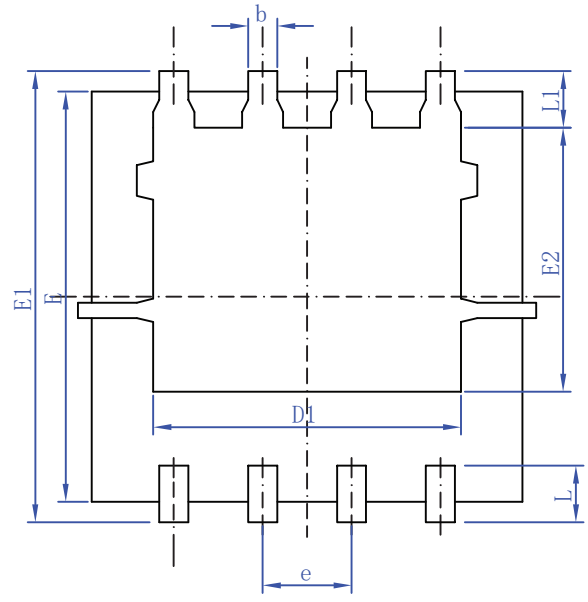
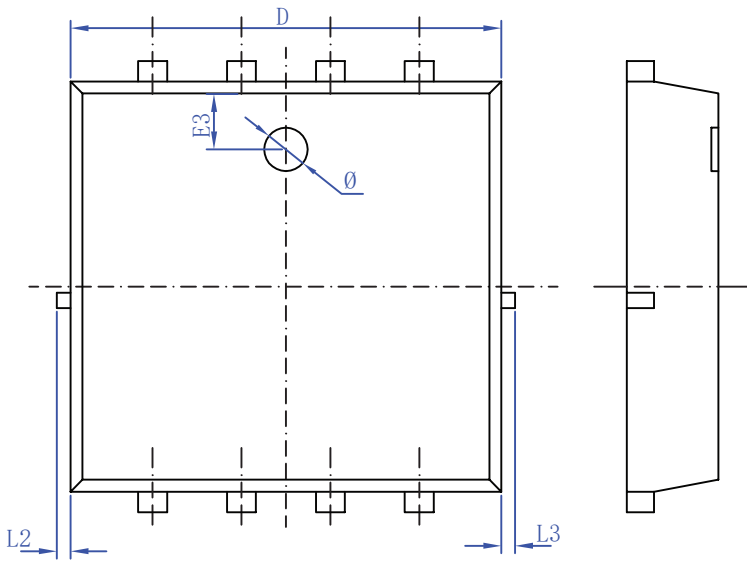
Typical Characteristics



Package Dimension

DFN-8 5x6

Unit :mm



Dimensions In Millimeters			
Symbol	Min.	Max.	Ave.
A	0.900	1.100	1.000
D	4.950	5.150	5.050
D1	3.850	4.250	4.050
E	5.750	5.950	5.850
E1	5.950	6.350	6.150
E2	3.300	3.700	3.500
E3	0.900	1.300	1.100
b	0.250	0.350	0.300
e	1.220	1.320	1.270
L	0.585	0.785	0.685
L1	0.525	0.725	0.625
Ø	1.000	1.400	1.200
L2	0~0.100		
L3	0~0.100		

注:

1. 未注公差±0.05未标注圆角R max=0.25