

### General Description

The CMSA019N06L uses advanced SGT technology to provide excellent RDS(ON). This is suitable device for Synchronous Rectification For Server and general purpose applications.

### Features

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

### Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	60	V
$V_{GS}$	Gate-Source Voltage	±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>	968	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	200	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
$R_{\theta JA}$	Thermal Resistance Junction-ambient(Steady-State)	---	50	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.63	°C/W

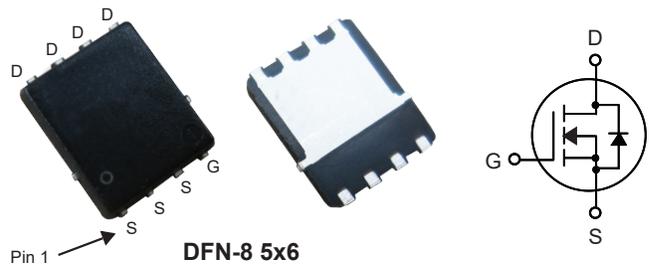
### Product Summary

BVDSS	R <sub>DS(on)</sub> max.	ID
60V	2mΩ	200A

### Applications

- Battery management
- High Frequency Switching and Synchronous Rectification

### DFN-8 5x6 Pin Configuration



Type	Package	Marking
CMSA019N06L	DFN-8 5x6	CMSA019N06L

Electrical Characteristics( $T_J=25^\circ\text{C}$ , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=30A$	---	1.7	2.0	mΩ
		$V_{GS}=4.5V, I_D=20A$	---	2.3	3.5	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	0.8	---	2.0	V
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS}=60V, V_{GS}=0V$	---	---	1	μA
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	±100	nA
$g_{fs}$	Forward Transconductance	$V_{DS}=10V, I_D=20A$	---	83	---	S
$R_g$	Gate Resistance	$V_{DS}=0V, V_{GS}=0V, f=1\text{MHz}$	---	2.0	---	Ω
$Q_g$	Total Gate Charge	$I_D=25A$	---	117	---	nC
$Q_{gs}$	Gate-Source Charge	$V_{DS}=30V$	---	27	---	
$Q_{gd}$	Gate-Drain Charge	$V_{GS}=0V \text{ to } 10V$ (Note 2)	---	12	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=30V$	---	27	---	ns
$T_r$	Rise Time	$V_{GS}=10V$	---	16	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_{GEN}=6\Omega$	---	63	---	
$T_f$	Fall Time	$I_D=25A$ (Note 2)	---	8	---	
$C_{iss}$	Input Capacitance	$V_{DS}=25V, V_{GS}=0V, f=1\text{MHz}$	---	9000	---	pF
$C_{oss}$	Output Capacitance		---	1200	---	
$C_{rss}$	Reverse Transfer Capacitance		---	200	---	

## Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$I_S$	Continuous Source Current	$V_G=V_D=0V, \text{ Force Current}$	---	---	200	A
$I_{SM}$	Pulsed Source Current		---	---	800	A
$V_{SD}$	Diode Forward Voltage	$V_{GS}=0V, I_S=30A, T_J=25^\circ\text{C}$	---	0.74	1.4	V

Note :

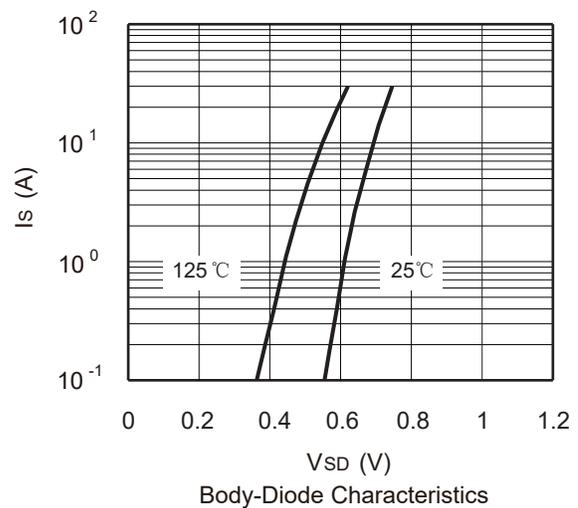
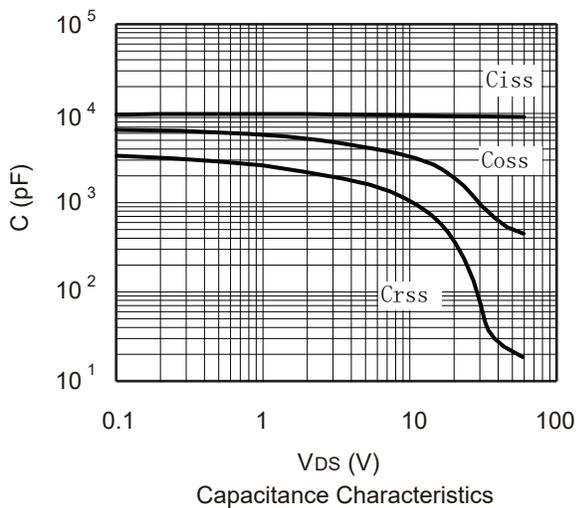
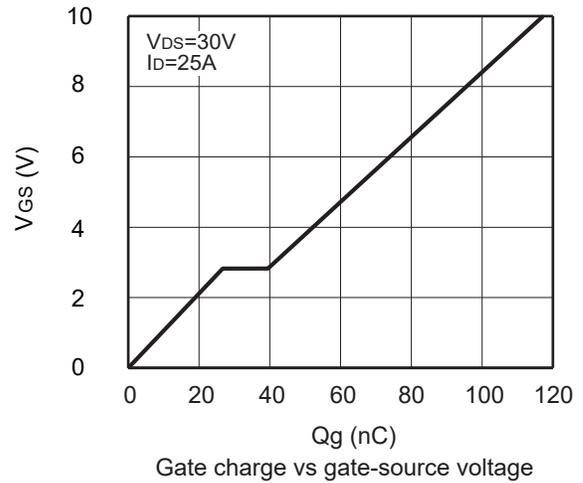
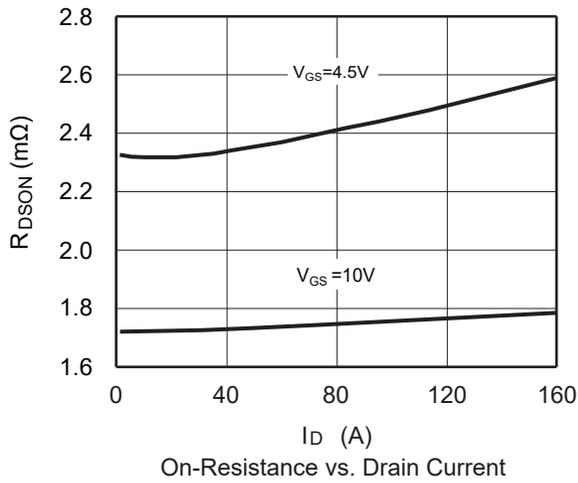
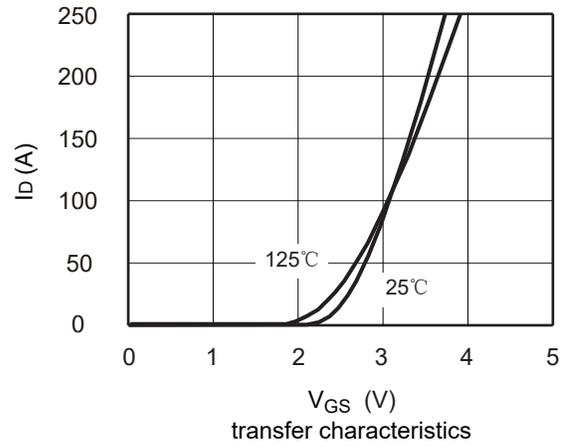
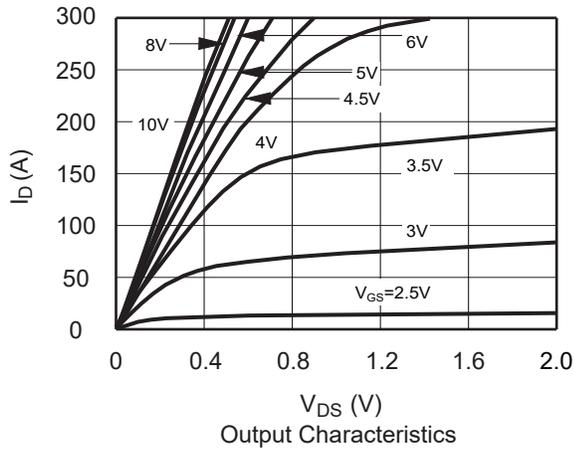
- 1.The EAS data shows Max. rating . The test condition is  $V_{DD}=40V, V_{GS}=10V, L=1\text{mH}, I_{AS}=44A$ .
- 2.Guaranteed by design, not subject to production testing.

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.

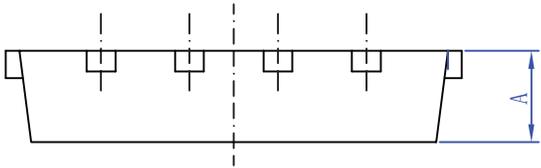
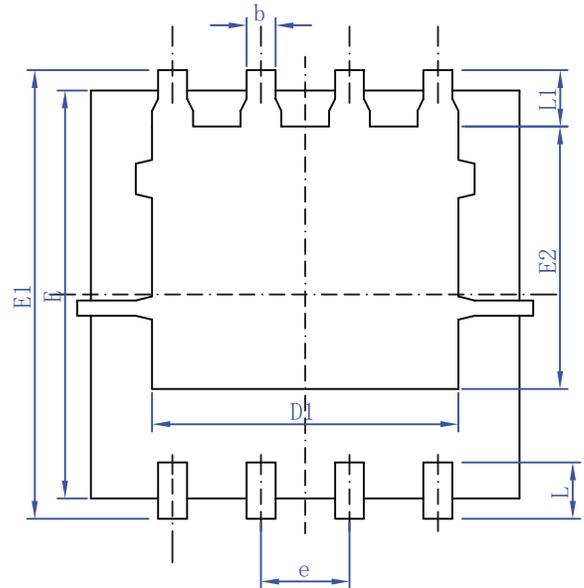
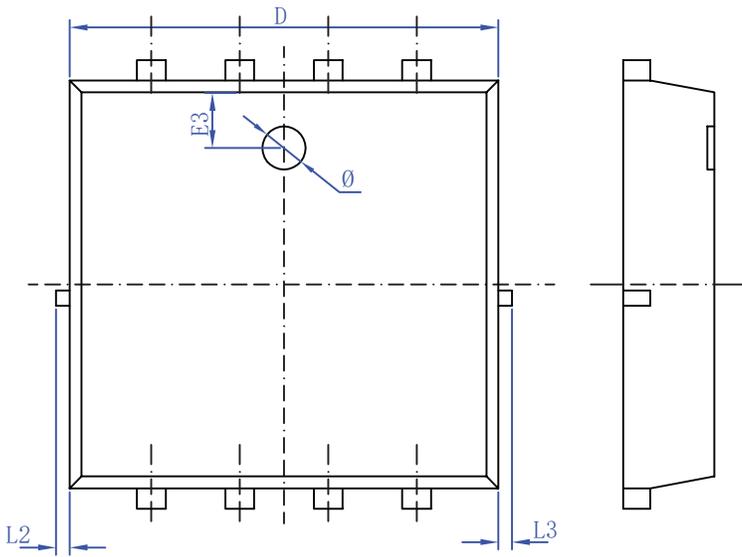
Typical Characteristics



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