

# CMSC110N06

60V, 9mΩ typ., 20A N-Channel MOSFET

## General Description

The CMSC110N06 uses advanced SGT technology to provide excellent RDS(ON). This device is well suited for applications where ultra low RDS(on) is required in small spaces such as High performance VRM, POL and orring functions.

## Features

- Low On-Resistance
- Surface Mount Package
- 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	20	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	14	A
$I_{DM}$	Pulsed Drain Current	80	A
EAS	Single Pulse Avalanche Energy <sup>1</sup>	30	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	50	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)	---	60	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case(Steady-State)	---	2.5	°C/W

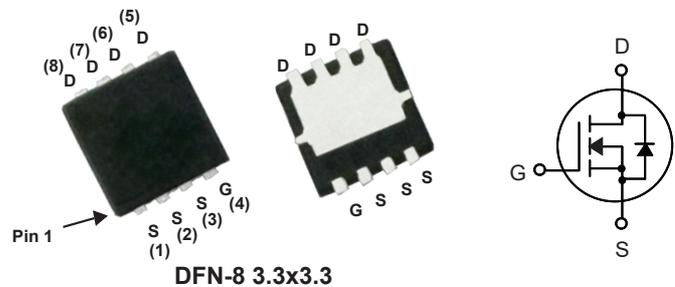
## Product Summary

BVDSS	RDS(on) max.	ID
60V	11mΩ	20A

## Applications

- High Frequency Switching and Synchronous Rectification

## DFN-8 3.3x3.3 Pin Configuration



DFN-8 3.3x3.3

Type	Package	Marking
CMSC110N06	DFN-8 3.3x3.3	110N06

**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	$V_{GS}=10V, I_D=20A$	---	9	11	mΩ
		$V_{GS}=4.5V, I_D=15A$	---	13	19	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	1.0	---	2.5	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	$V_{DS}=10V, I_D=20A$	---	6.8	---	S
$R_g$	Gate Resistance	$V_{DS}=0V, V_{GS}=0V, f=1\text{MHz}$	---	3.6	---	Ω
$Q_g$	Total Gate Charge	$I_D=13A$	---	13.5	---	nC
$Q_{gs}$	Gate-Source Charge	$V_{DS}=30V$	---	2.5	---	
$Q_{gd}$	Gate-Drain Charge	$V_{GS}=10V$	---	3	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=30V$ $V_{GS}=10V$ $R_{GEN}=3\Omega, R_L=2.3\Omega$	---	5	---	ns
$T_r$	Rise Time		---	3	---	
$T_{d(off)}$	Turn-Off Delay Time		---	19	---	
$T_f$	Fall Time		---	3	---	
$C_{iss}$	Input Capacitance	$V_{DS}=25V, V_{GS}=0V, f=1\text{MHz}$	---	680	---	pF
$C_{oss}$	Output Capacitance		---	400	---	
$C_{rss}$	Reverse Transfer Capacitance		---	21	---	

**Diode Characteristics**

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$I_S$	Continuous Source Current	$V_G=V_D=0V$ , Force Current	---	---	20	A
$I_{SM}$	Pulsed Source Current		---	---	80	A
$V_{SD}$	Diode Forward Voltage	$V_{GS}=0V, I_S=20A, T_J=25^{\circ}\text{C}$	---	0.90	1.2	V

Note :

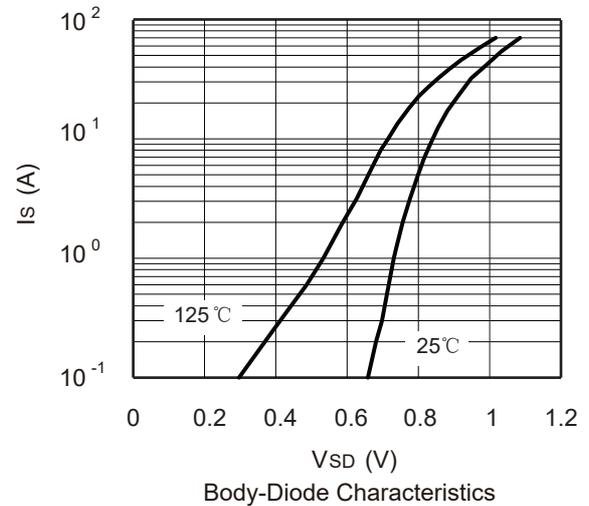
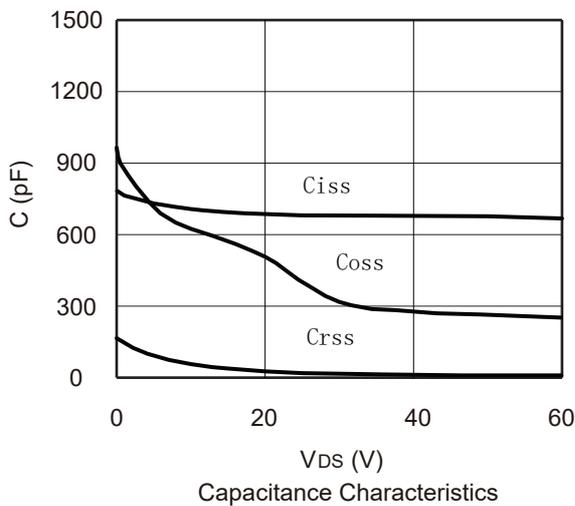
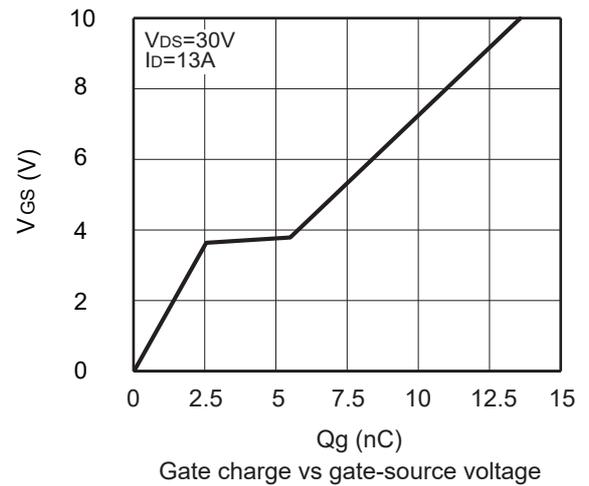
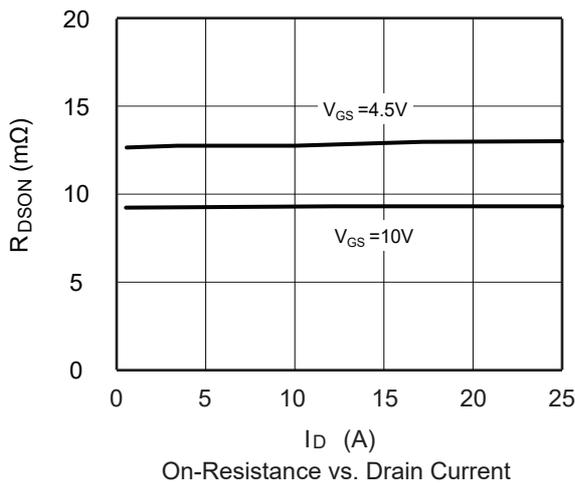
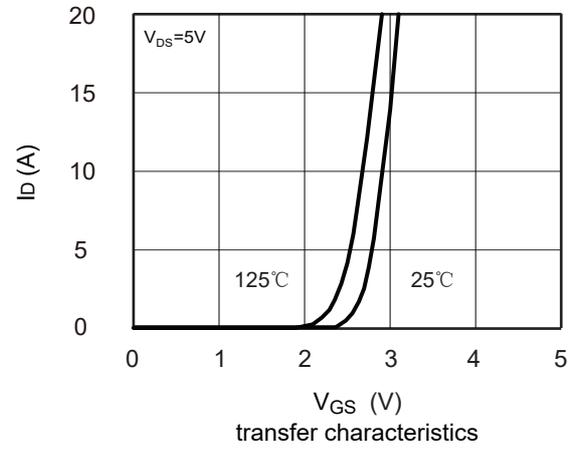
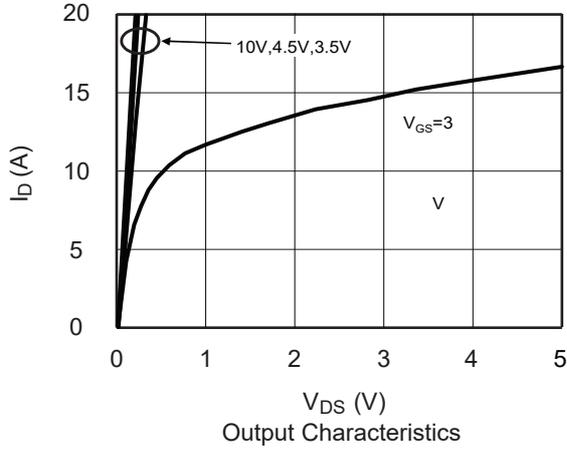
1. The EAS data shows Max. rating . The test condition is  $V_{DD}=30V, V_{GS}=10V, L=0.5\text{mH}, I_{AS}=11A$ .

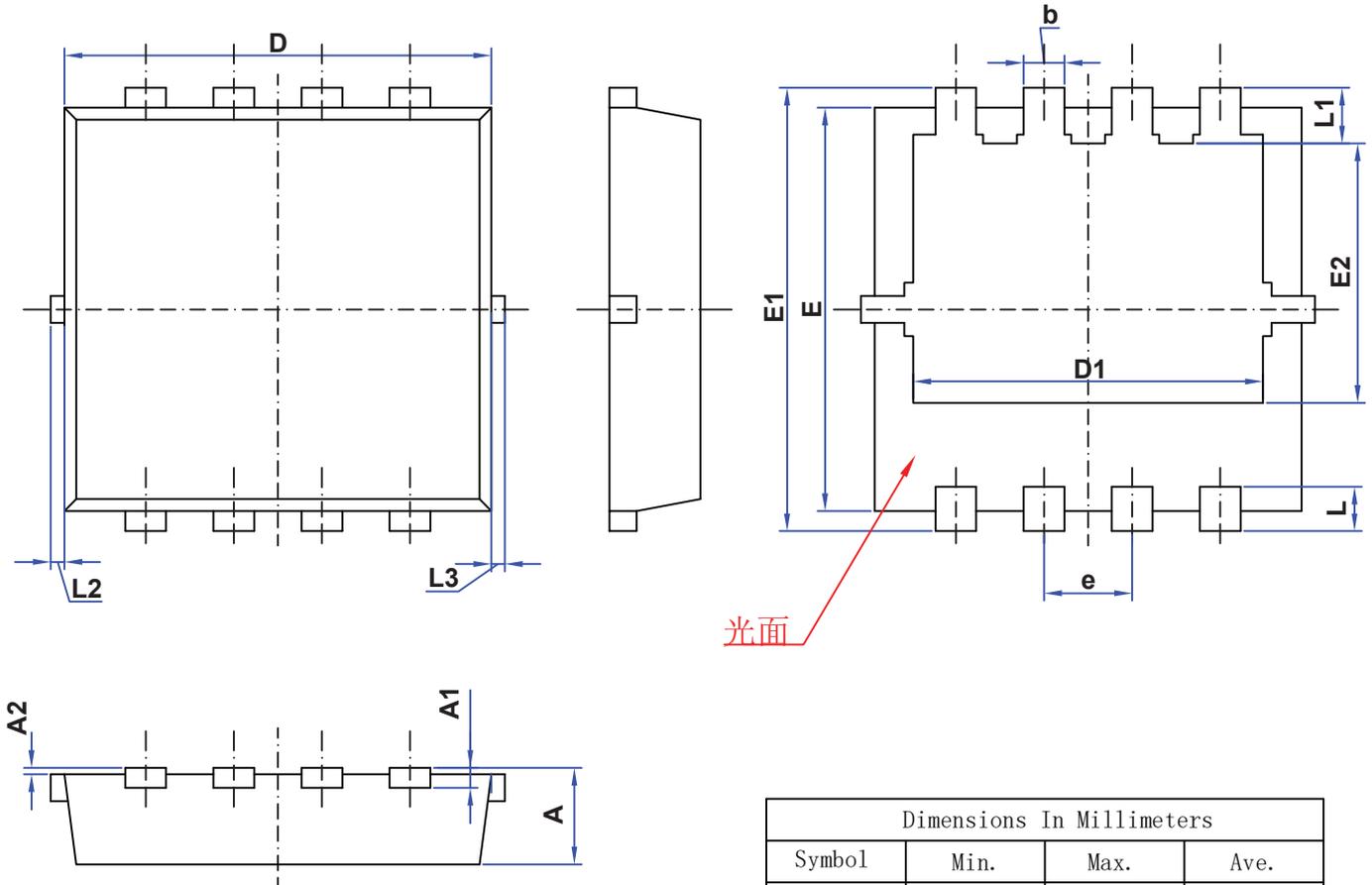
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Cmos reserves the right to improve product design ,functions and reliability without notice. Please refer to the latest version of specification.

Typical Characteristics



**Package Dimension**
**DFN-8 3.3x3.3 Unit :mm**


光面

注:

1. 未注公差±0.10,
2. 塑封体无缺损、缩孔、裂纹、气泡等不良缺陷
3. 标注单位mm

Dimensions In Millimeters			
Symbol	Min.	Max.	Ave.
A	0.700	0.900	0.800
A1	0.100	0.200	0.150
A2	-	0.050	-
D	3.000	3.200	3.100
D1	2.350	2.550	2.450
E	3.000	3.200	3.100
E1	3.200	3.600	3.400
E2	1.635	1.835	1.735
b	0.200	0.400	0.300
e	0.550	0.750	0.650
L	0.250	0.650	0.450
L1	0.345	0.745	0.545
L2	0~0.100		
L3	0~0.100		