

CMSC35N06B

60V, 35mΩ typ., 12A N-Channel MOSFET

General Description

The CMSC35N06B uses advanced SGT technology to provide excellent RDS(ON). This is suitable for DC/DC converter and general purpose applications.

Features

- Low On-Resistance
- Simple Drive Requirements
- Surface Mount Package
- RoHS Compliant

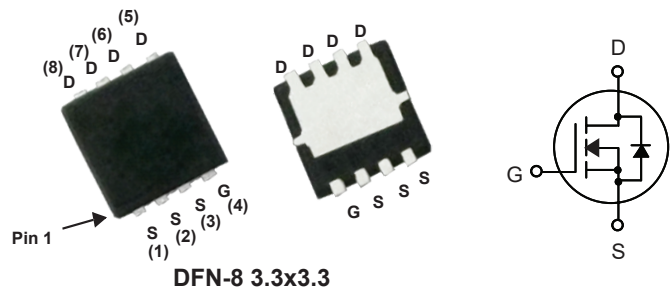
Product Summary

BVDSS	R _{DS(on)} max.	ID
60V	40mΩ	12A

Applications

- DC-DC converters

DFN-8 3.3x3.3 Pin Configuration



Type	Package	Marking
CMSC35N06B	DFN-8 3.3x3.3	35N06B

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°C	Continuous Drain Current	12	A
I _D @T _C =100°C	Continuous Drain Current	8.4	A
I _{DM}	Pulsed Drain Current	48	A
EAS	Single Pulse Avalanche Energy ¹	32	mJ
P _D @T _C =25°C	Total Power Dissipation	35	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	---	50	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	3.57	°C/W

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	$V_{GS}=10V$, $I_D=10A$	---	35	40	mΩ
		$V_{GS}=4.5V$, $I_D=5A$	---	39	45	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1.0	---	3.0	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	$V_{DS}=5V$, $I_D=10A$	---	11	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1.3	---	Ω
Q_g	Total Gate Charge	$I_D=12A$	---	15	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=48V$	---	2.2	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	4.3	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=48V$	---	7	---	ns
T_r	Rise Time	$V_{GS}=10V$	---	13	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=2.5\Omega$	---	18	---	
T_f	Fall Time	$I_D=12A$	---	2.5	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	680	---	pF
C_{oss}	Output Capacitance		---	40	---	
C_{rss}	Reverse Transfer Capacitance		---	30	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	12	A
I_{SM}	Pulsed Source Current		---	---	48	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=10A$, $T_J=25^{\circ}\text{C}$	---	0.87	1.2	V

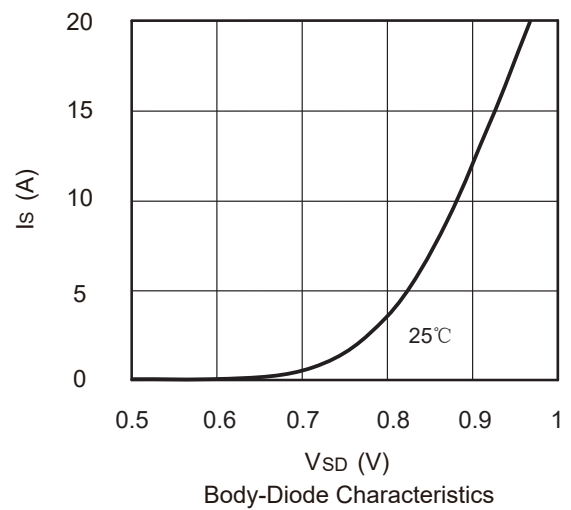
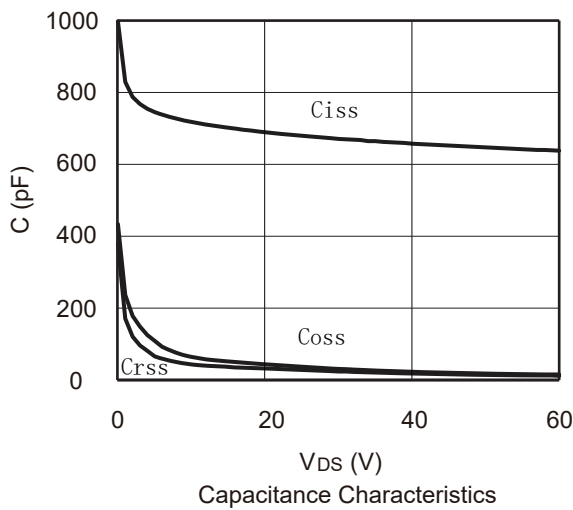
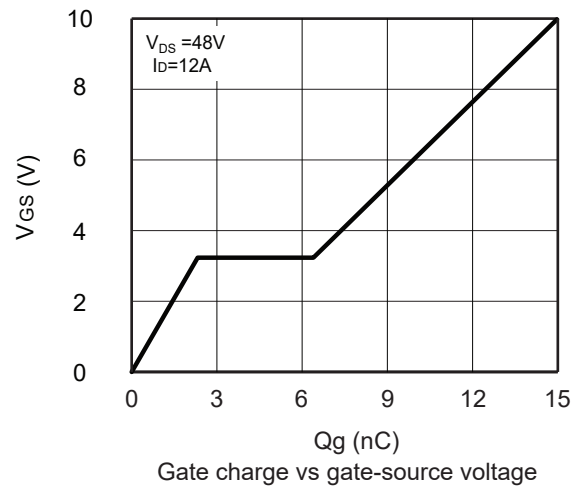
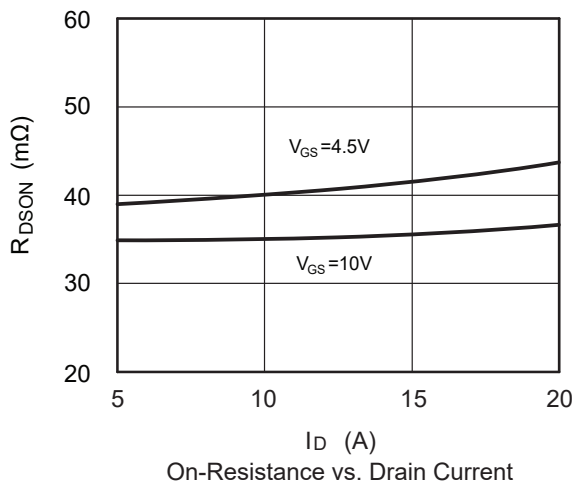
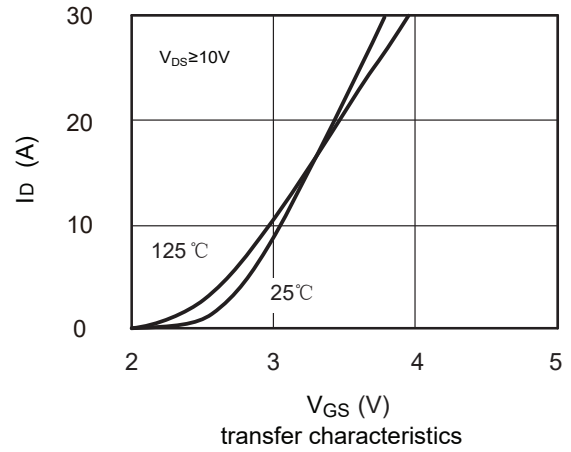
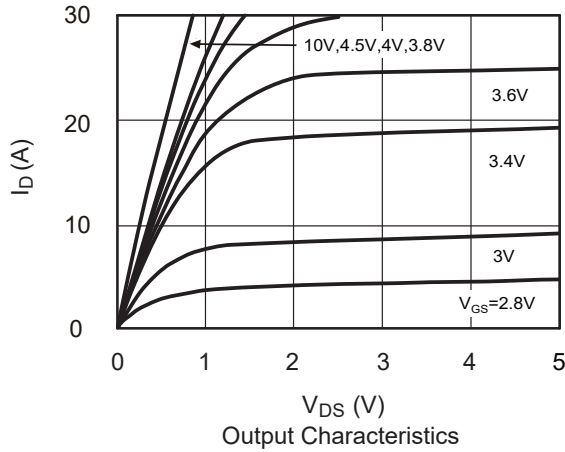
Note :

1.The EAS data shows Max. rating . The test condition is $V_{DD}=30V$, $V_{GS}=10V$, $L=1\text{mH}$, $I_{AS}=8A$.

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

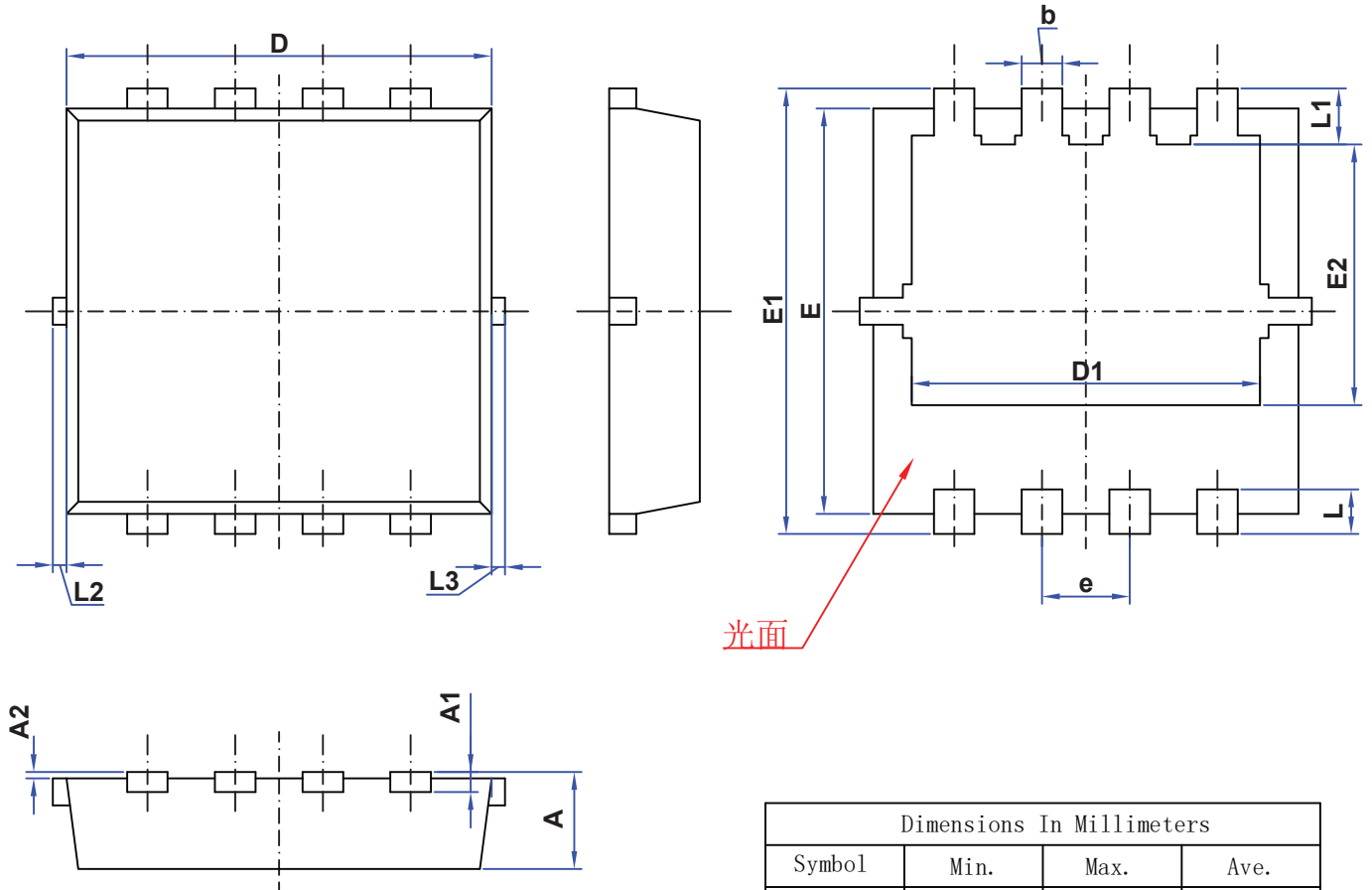
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Cmos reserves the right to improve product design ,functions and reliability without notice.

Typical Characteristics


Package Dimension

DFN-8 3.3x3.3 Unit :mm



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		