

General Description

The CMSC3006 combines advanced trench MOSFET technology with a low resistance package to provide extremely low RDS(ON). This device is ideal for load switch and battery protection applications.

Features

- Low ON-resistance
- 100% avalanche tested
- Surface Mount Package
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	90	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	58	A
I_{DM}	Pulsed Drain Current	360	A
EAS	Single Pulse Avalanche Energy ¹	196	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	45	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-to-Ambient	---	75	°C/W

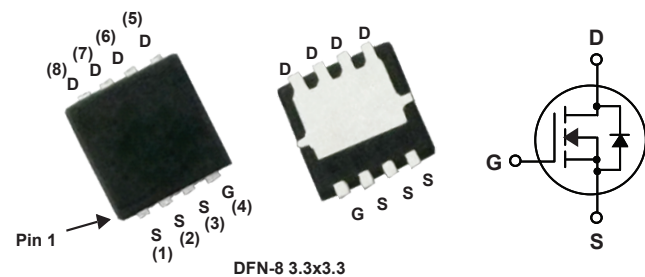
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
30V	5mΩ	90A

Applications

- High side in DC - DC Buck Converters
- Notebook battery power management
- Load switch in Notebook

DFN-8 3.3x3.3 Pin Configuration



Type	Package	Marking
CMSC3006	DFN-8 3.3x3.3	3006

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	30	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =28A	---	4.2	5	mΩ
		V _{GS} =4.5V , I _D =20A	---	6	7.5	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D = 250μA	1	---	2.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =30V , V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±20V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =5V , I _D =20A	---	29	---	S
Q _g	Total Gate Charge	V _{DS} =15V , I _D = 15A V _{GS} =4.5 V	---	20	---	nC
Q _{gs}	Gate-Source Charge		---	7.5	---	
Q _{gd}	Gate-Drain Charge		---	7	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =15V , V _{GS} =10V , R _G =3.3Ω I _D =15A	---	12	---	ns
T _r	Rise Time		---	97	---	
T _{d(off)}	Turn-Off Delay Time		---	40	---	
T _f	Fall Time		---	107	---	
C _{iss}	Input Capacitance	V _{DS} = 25V , V _{GS} =0V , f=1MHz	---	2400	---	pF
C _{oss}	Output Capacitance		---	250	---	
C _{rss}	Reverse Transfer Capacitance		---	230	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Diode continuous forward current	V _G =V _b =0V , Force Current	---	---	90	A
I _{S,pulse}	Diode pulse current		---	---	360	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _F =25A , T _J =25°C	---	---	1.2	V

Notes:

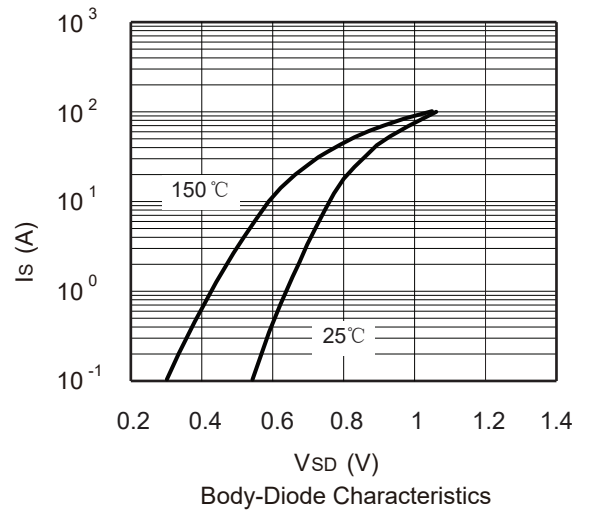
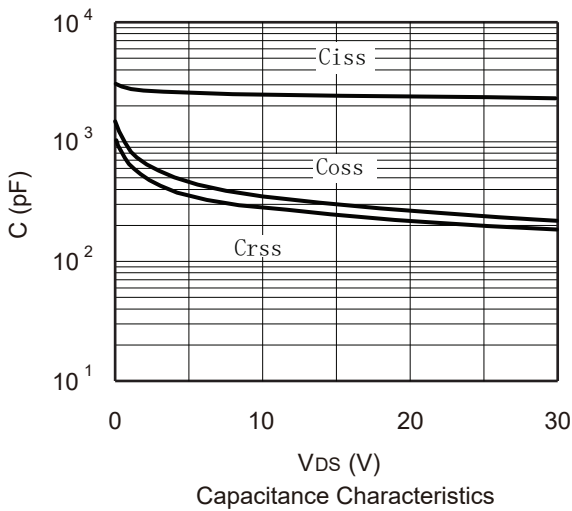
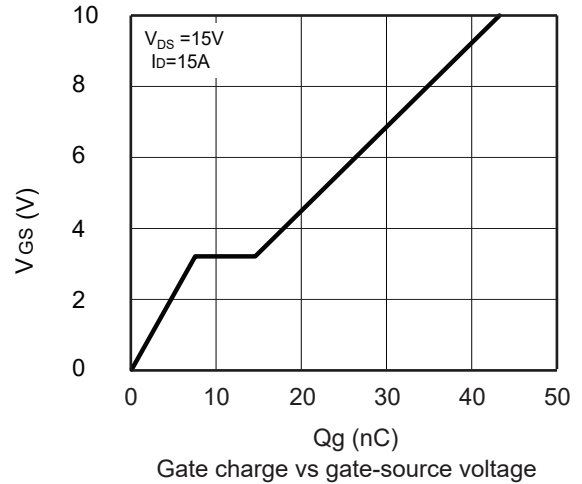
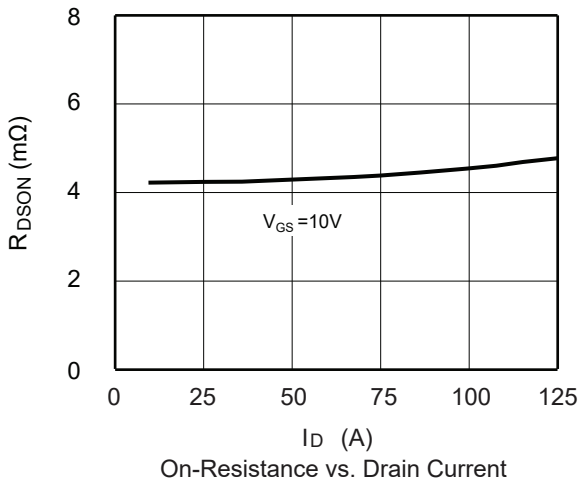
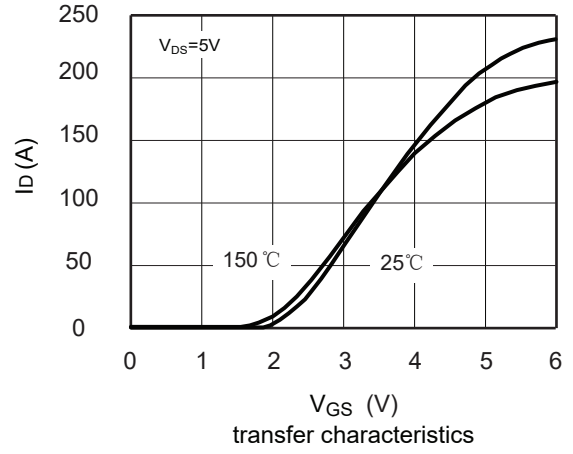
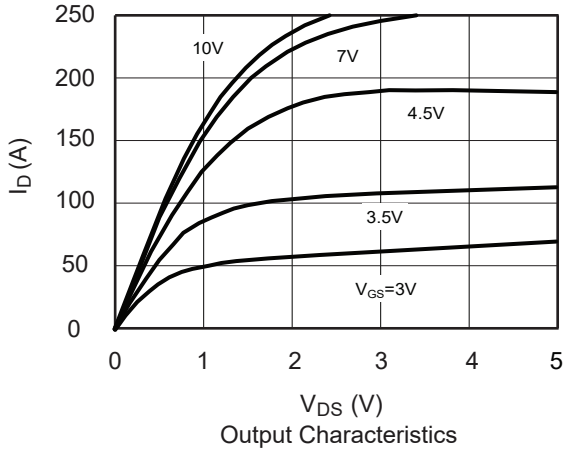
1.The EAS data shows Max. rating . The test condition is VDD=-20V,VGS=-10V,L=0.5mH,IAS=-28A.

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

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

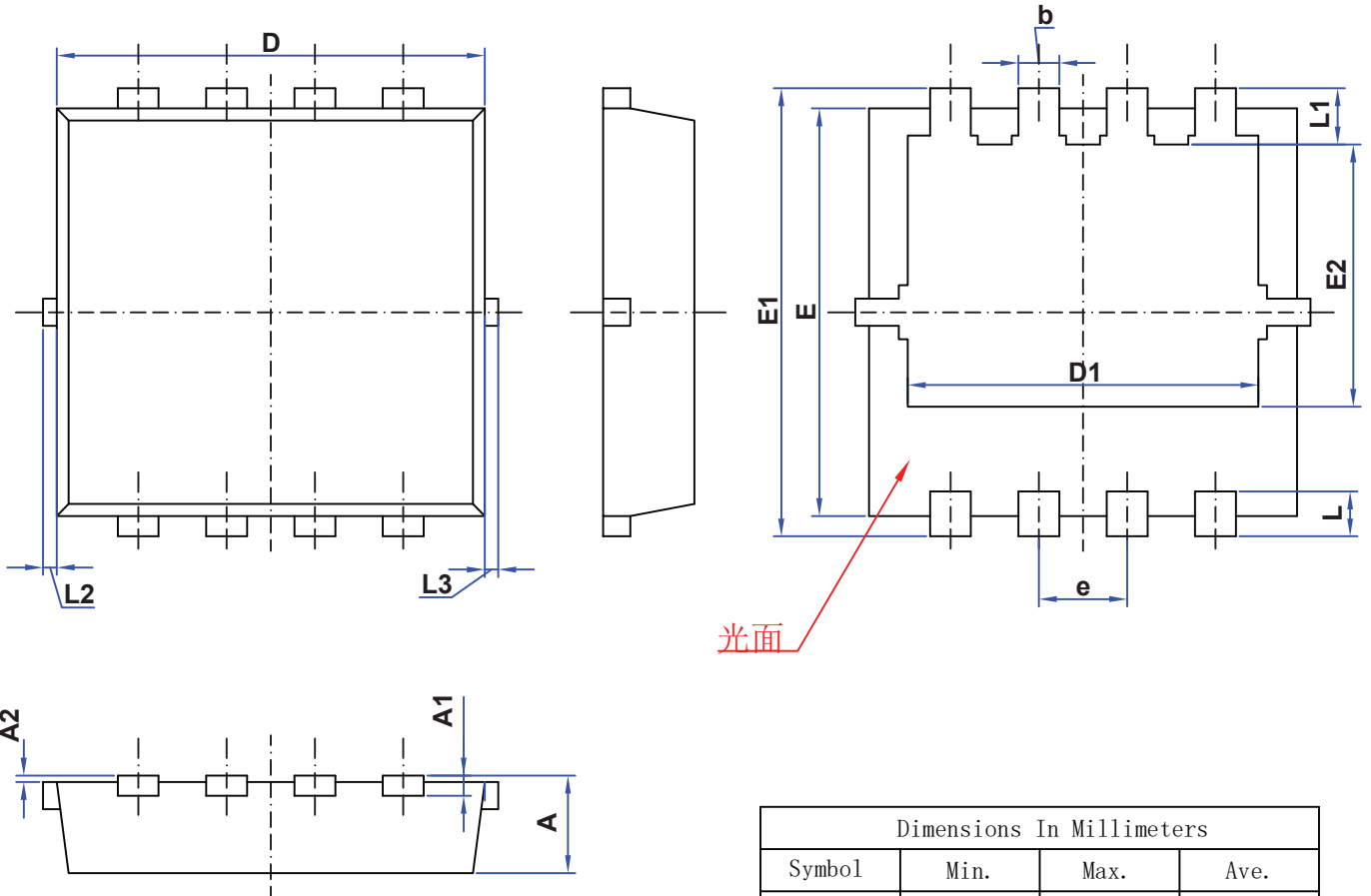
Cmos reserves the right to improve product design ,functions and reliability without notice.Please refer to the latest version of specification.

Typical Characteristics



Package Dimension

DFN-8 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		