

CMS15DN03D

30V, 8.8mΩ typ., 15A Dual N-Channel MOSFET

General Description

The CMS15DN03D uses advanced trench technology to provide excellent RDS(ON). This is suitable for DC/DC converter and general purpose applications.

Features

- Low On-Resistance
- Low Gate Charge
- High Current Capability
- ESD protected
- RoHS Compliant

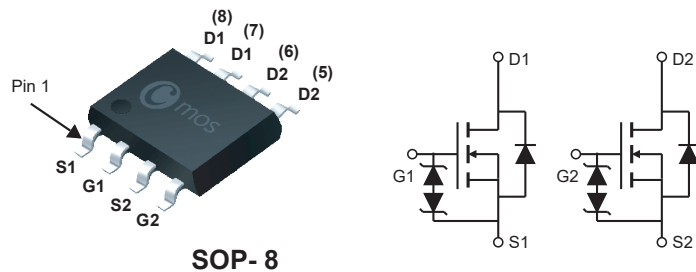
Product Summary

BVDSS	R _{DS(on)} max.	ID
30V	10.5mΩ	15A

Applications

- DC/DC Converters

SOP-8 Pin Configuration



SOP- 8

Type	Package	Marking
CMS15DN03D	SOP- 8	CMS15DN03D

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	30	V
V _{GS}	Gate-Source Voltage	±16	V
I _D @T _C =25°C	Continuous Drain Current	15	A
I _D @T _C =100°C	Continuous Drain Current	11	A
I _{DM}	Pulsed Drain Current	45	A
EAS	Single Pulse Avalanche Energy ¹	56	mJ
P _D @T _A =25°C	Total Power Dissipation	2.5	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	---	24.2	°C/W

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 =6A	---	8.8	10.5	mΩ
		V _{GS} =4.5V , I _D =4A	---	10.5	13	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1	---	3	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =30V , V _{GS} =0V	---	---	1	μA
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±16V , V _{DS} =0V	---	---	±10	μA
g _{fs}	Forward Transconductance	V _{DS} =5V , I _D =5A	---	12	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	1.8	---	Ω
Q _g	Total Gate Charge	I _D =20A	---	11	---	nC
Q _{gs}	Gate-Source Charge	V _{DS} = 15V	---	2.2	---	
Q _{gd}	Gate-Drain Charge	V _{GS} = 10V	---	1.8	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} = 15V	---	5	---	ns
T _r	Rise Time	V _{GS} = 10 V	---	2.5	---	
T _{d(off)}	Turn-Off Delay Time	R _{GEN} = 3Ω	---	20	---	
T _f	Fall Time	R _L =0.75Ω	---	2.5	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	650	---	pF
C _{oss}	Output Capacitance		---	170	---	
C _{rss}	Reverse Transfer Capacitance		---	15	---	

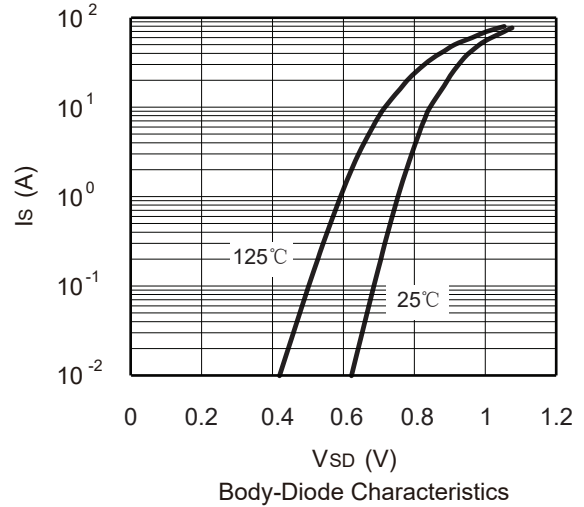
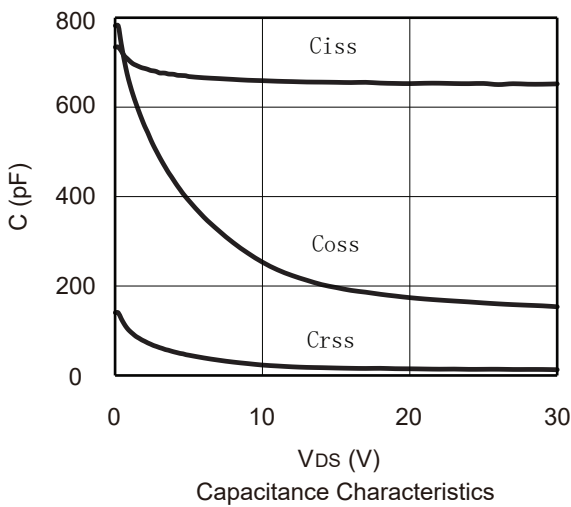
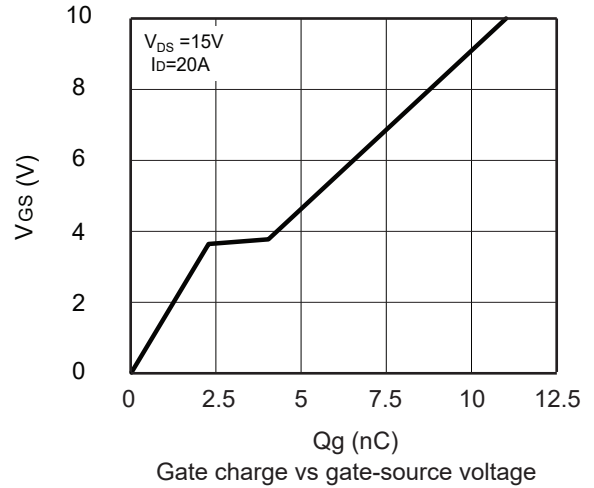
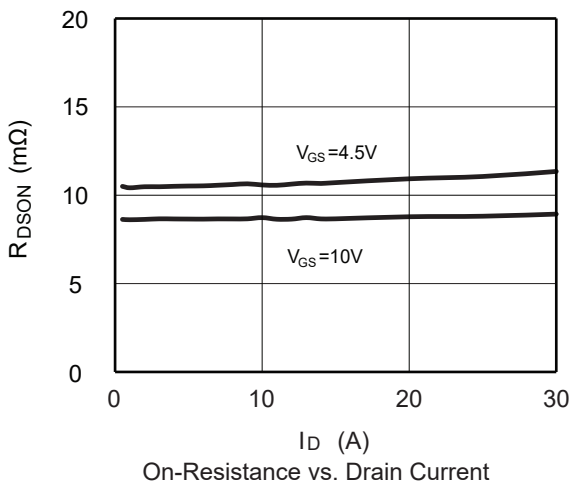
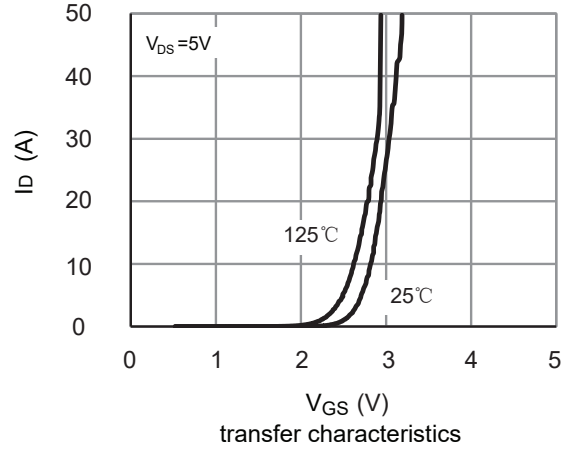
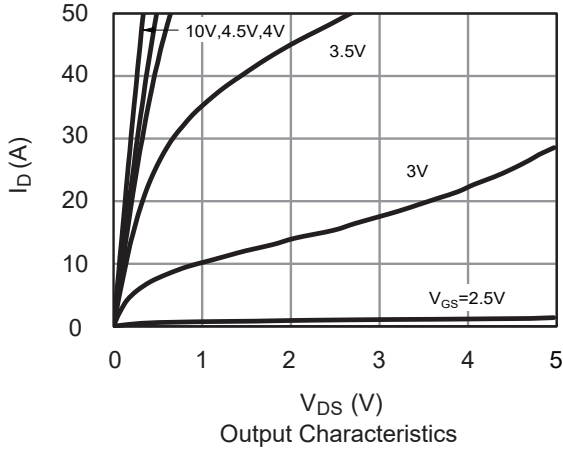
Diode Characteristics

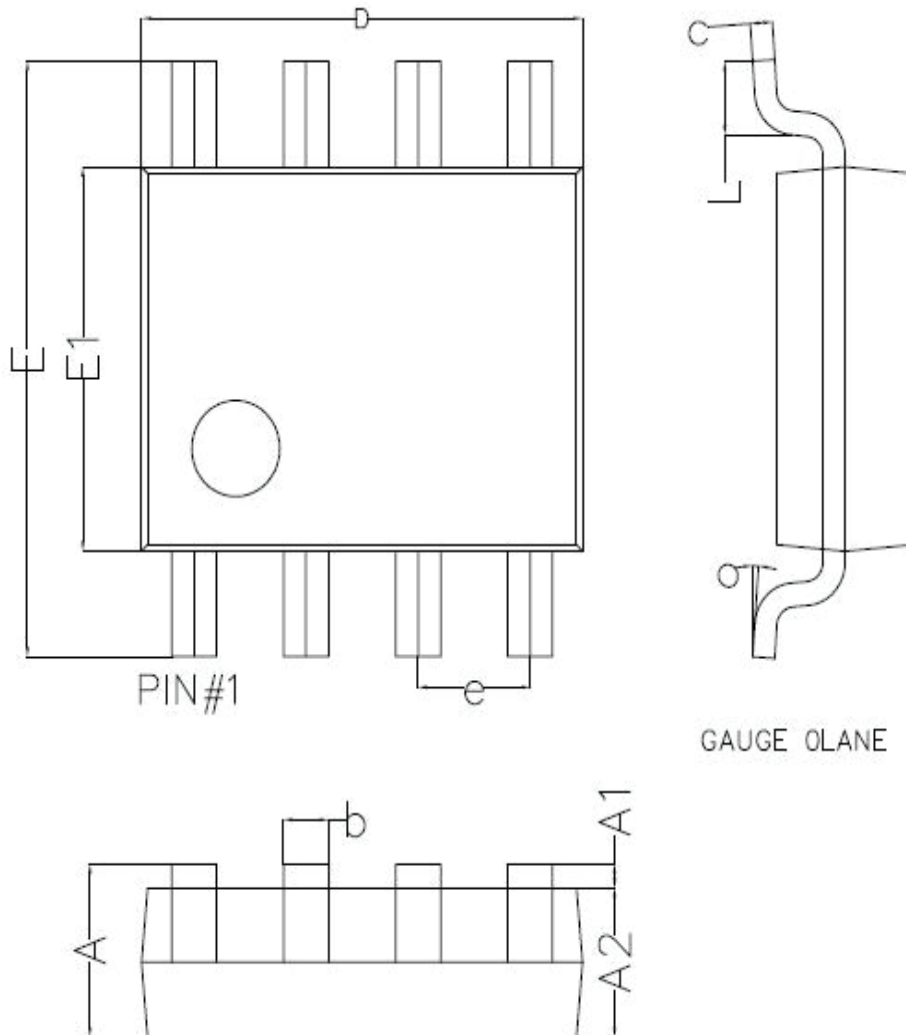
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	15	A
I _{SM}	Pulsed Source Current		---	---	45	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =1A , T _J =25°C	---	0.75	1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=25V , V_{GS}=10V , L=0.5mH , I_{AS}=15A.

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.

Typical Characteristics


Package Dimension
SOP-8
Unit :mm


Symbol	Dim in mm		
	Min	Nor	Max
A	1.35	1.55	1.75
A1	0.02	0.065	0.10
A2	1.35	1.45	1.55
b	0.33	0.42	0.51
c	0.17	0.21	0.25
D	4.80	4.90	5.00
e	1.270 (BSC)		
E	5.80	6.00	6.20
E1	3.80	3.90	4.00
L	0.4	0.835	1.27
θ	0°	4°	8°