

General Description

The CMS65N03L uses advanced trench technology to provide excellent $R_{DS(on)}$.

This device is ideally suited for use in PWM applications.

Features

- Low On-Resistance
- Simple Drive Requirements
- RoHS Compliant

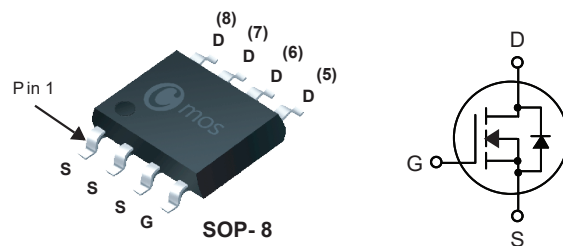
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
30V	8.3mΩ	15A

Applications

- Notebook AC-in load switch
- Battery protection charge/discharge

SOP-8 Pin Configuration



Type	Package	Marking
CMS65N03L	SOP-8	CMS65N03L

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_A=25^\circ\text{C}$	Continuous Drain Current	15	A
$I_D@T_A=70^\circ\text{C}$	Continuous Drain Current	11	A
I_{DM}	Pulsed Drain Current	60	A
EAS	Single Pulse Avalanche Energy ¹	72	mJ
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation	3	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($t \leq 10\text{s}$)	---	41	°C/W
$R_{\theta JL}$	Thermal Resistance Junction-Lead(Steady-State)	---	24	°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	$V_{GS}=0V$, $I_D=250\mu A$	30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=5A$	---	7.2	8.3	mΩ
		$V_{GS}=4.5V$, $I_D=5A$	---	10.5	13	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1.0	---	2.2	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=30V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=5V$, $I_D=5A$	---	15	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1.6	---	Ω
Q_g	Total Gate Charge	$I_D=15A$	---	22	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=15V$	---	4.7	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	4	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=15V$	---	6.5	---	ns
T_r	Rise Time	$V_{GS}=10V$	---	2.5	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_{GEN}=3\Omega$	---	22.5	---	
T_f	Fall Time	$R_L=1.05\Omega$	---	3	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1150	---	pF
C_{oss}	Output Capacitance		---	100	---	
C_{rss}	Reverse Transfer Capacitance		---	85	---	

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		---	---	60	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=1A$, $T_J=25^{\circ}\text{C}$	---	0.73	1.2	V

Note :

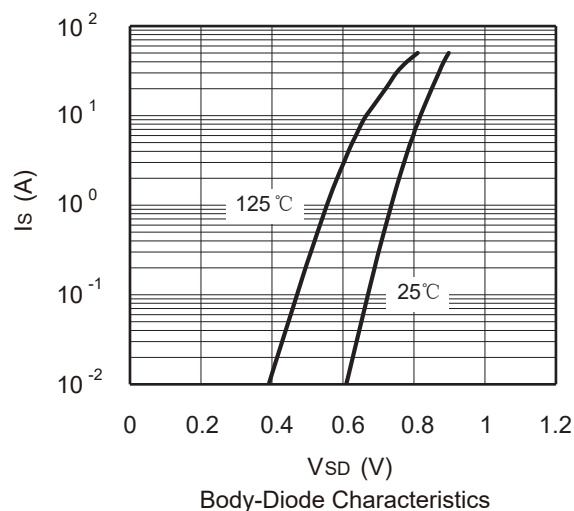
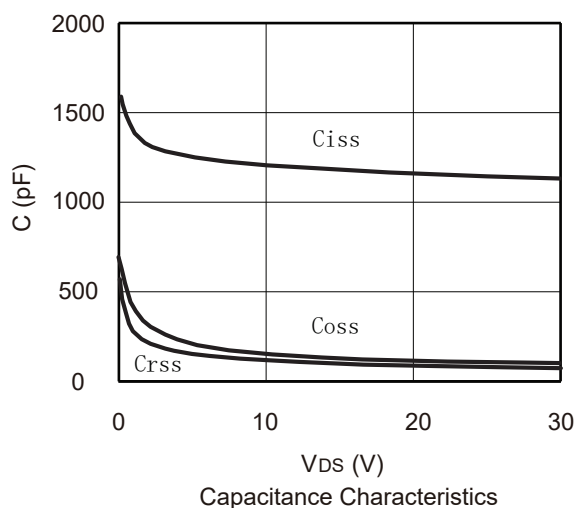
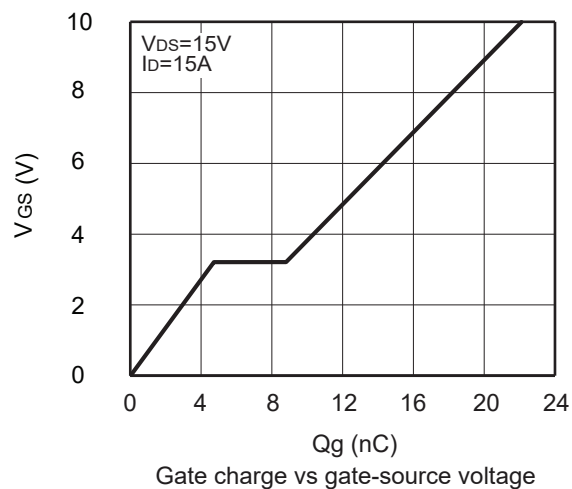
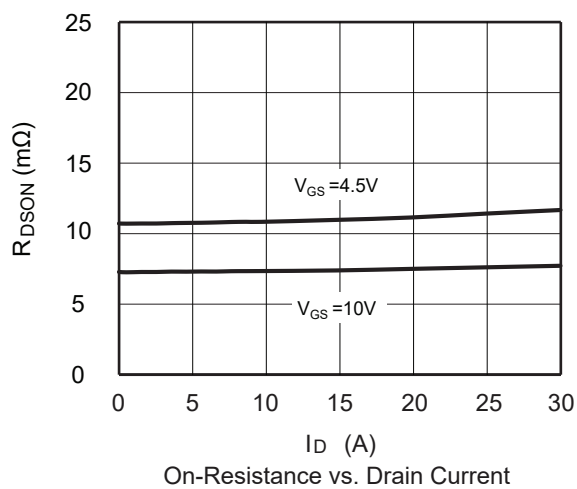
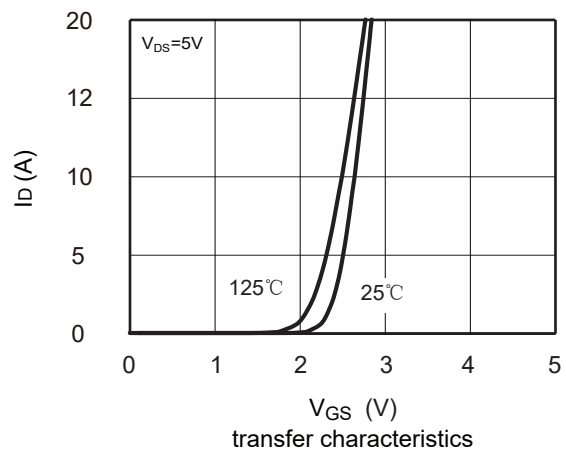
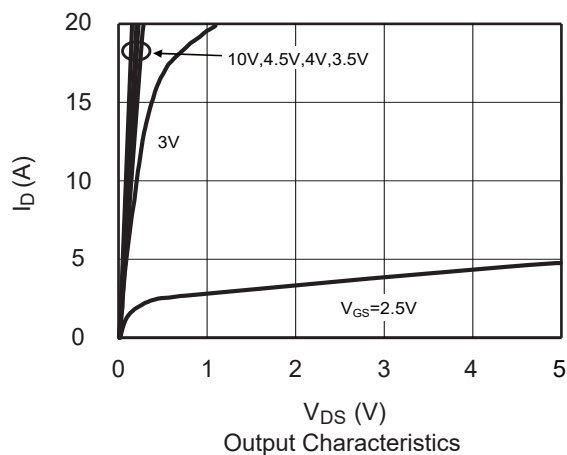
1.The EAS data shows Max. rating . The test condition is $V_{DD}=20V$, $V_{GS}=10V$, $L=0.5\text{mH}$, $I_{AS}=17A$.

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

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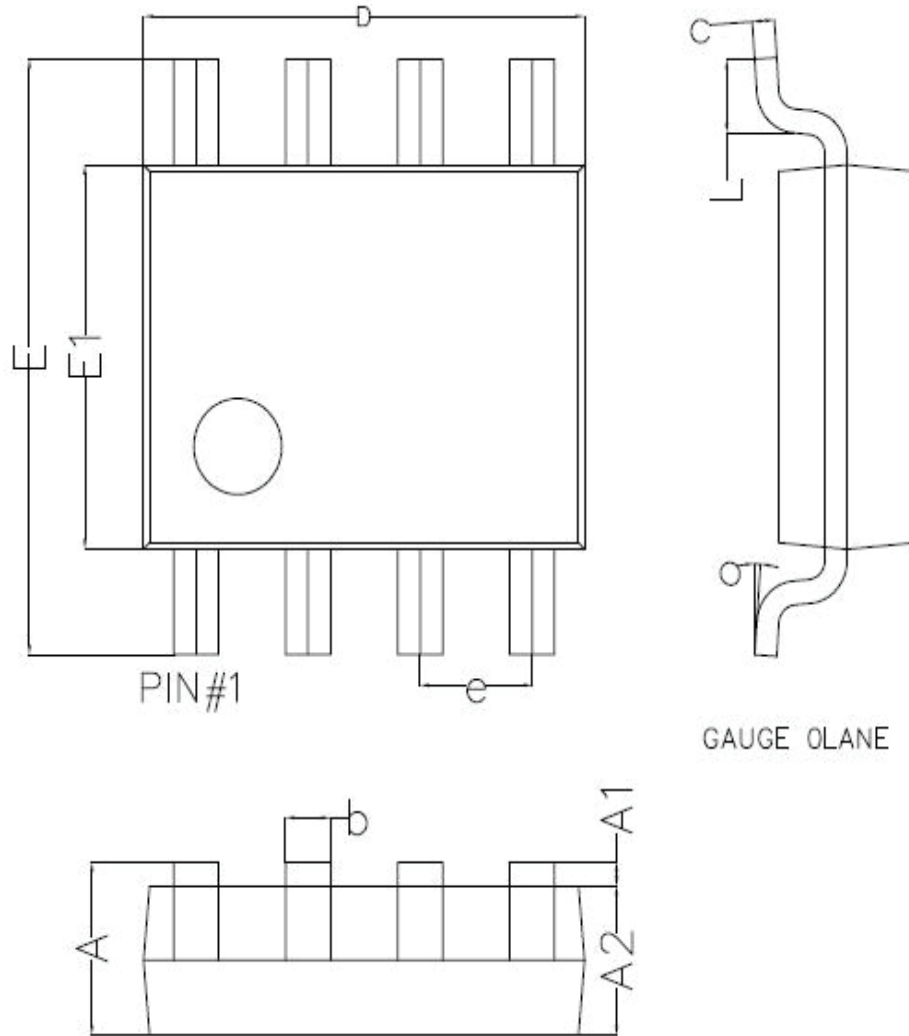
Typical Characteristics



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°