

General Description

The CMS15N06T uses advanced technology to provide excellent $R_{DS(ON)}$. This device is suitable for use as a synchronous switch in PWM applications.

Features

- Low On-Resistance
- Simple Drive Requirements
- Surface mount package
- RoHS Compliant

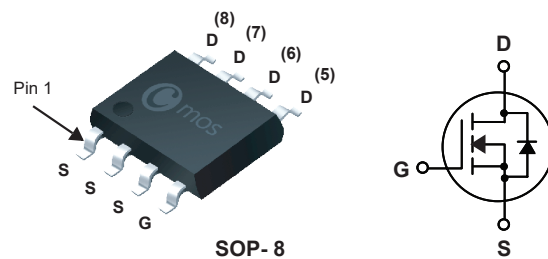
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
60V	16mΩ	15A

Applications

- DC/DC Converter
- Synchronous Rectifier
- Load Switch
- Battery protection

SOP-8 Pin Configuration



Type	Package	Marking
CMS15N06T	SOP- 8	CMS15N06T

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ Unless Otherwise Noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	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	8	A
I_{DM}	Pulsed Drain Current	60	A
EAS	Single Pulse Avalanche Energy ¹	144	mJ
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation	3.1	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	40	$^\circ\text{C}/\text{W}$

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	$V_{GS}=10V, I_D=5A$	---	13	16	mΩ
		$V_{GS}=4.5V, I_D=3A$	---	14	20	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=60V, V_{GS}=0V$	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	±100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V, I_D=5A$	---	15	---	S
Q_g	Total Gate Charge	$V_{DD}=48V, I_D=6A$ $V_{GS}=4.5V$	---	18.9	---	nC
Q_{gs}	Gate-Source Charge		---	7.8	---	
Q_{gd}	Gate-Drain Charge		---	6.3	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=30V, V_{GS}=10V, I_D=6A$ $R_G=3.3\Omega$	---	7.7	---	ns
T_r	Rise Time		---	52	---	
$T_{d(off)}$	Turn-Off Delay Time		---	37	---	
T_f	Fall Time		---	10	---	
C_{iss}	Input Capacitance	$V_{DS}=15V, V_{GS}=0V, f=1\text{MHz}$	---	3000	---	pF
C_{oss}	Output Capacitance		---	146	---	
C_{rss}	Reverse Transfer Capacitance		---	120	---	

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	$V_{GS}=0V, I_S=6A, T_J=25^{\circ}\text{C}$	---	---	1.2	V

Note :

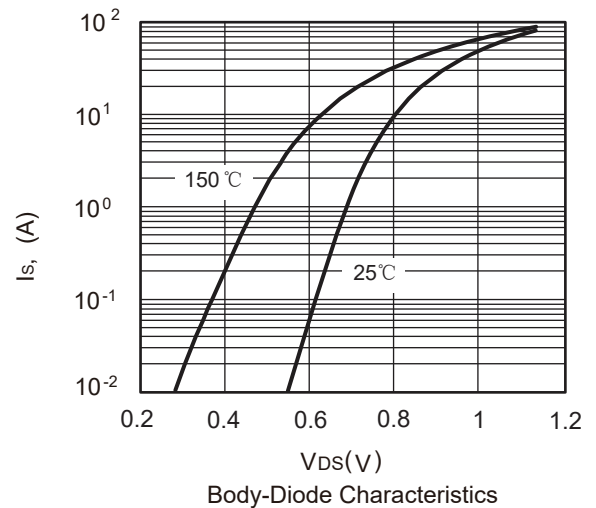
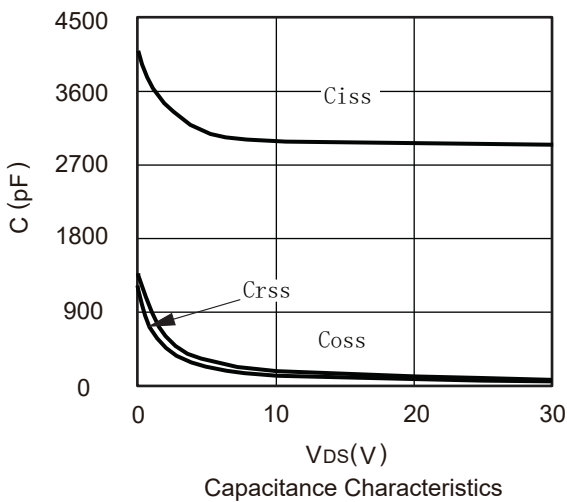
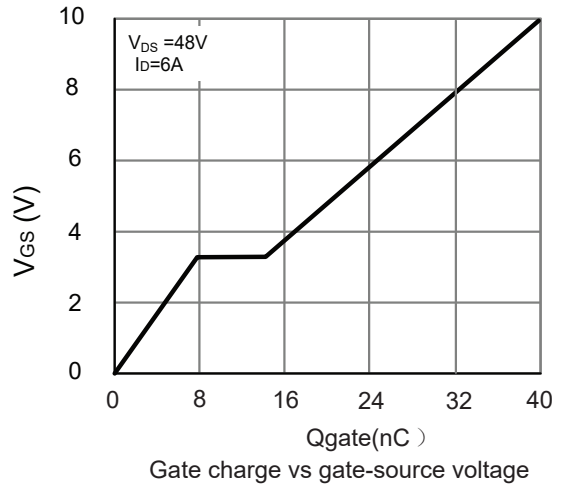
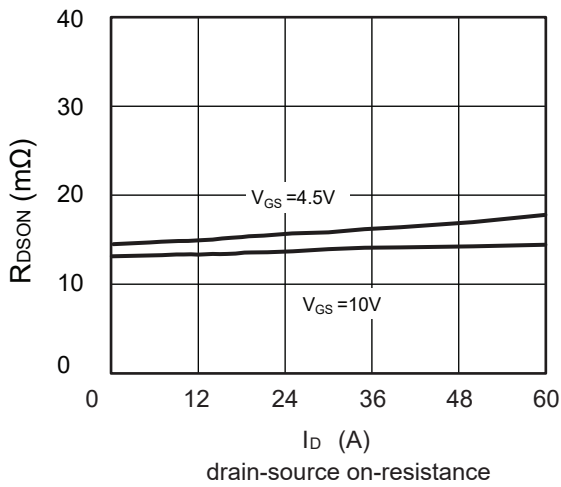
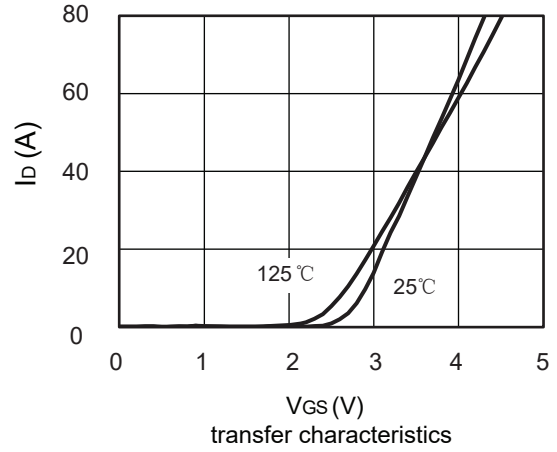
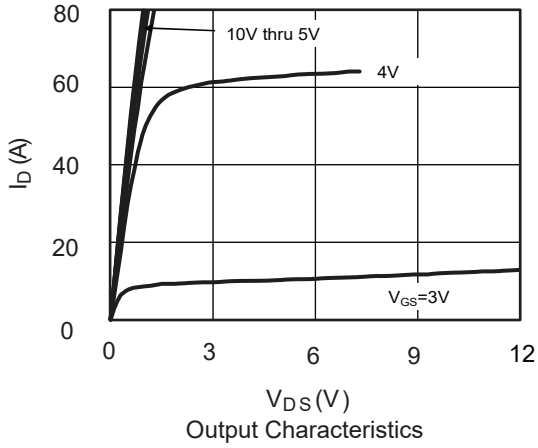
1.The EAS data shows Max. rating . The test condition is $V_{DD}=30V, V_{GS}=10V, L=1\text{mH}, I_{AS}=17A$.

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.

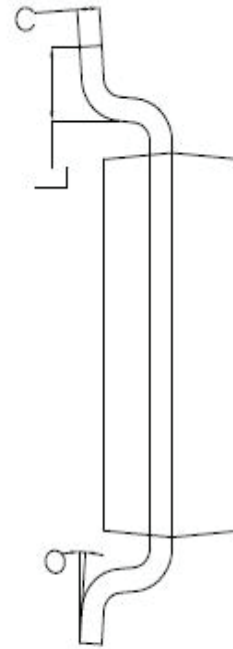
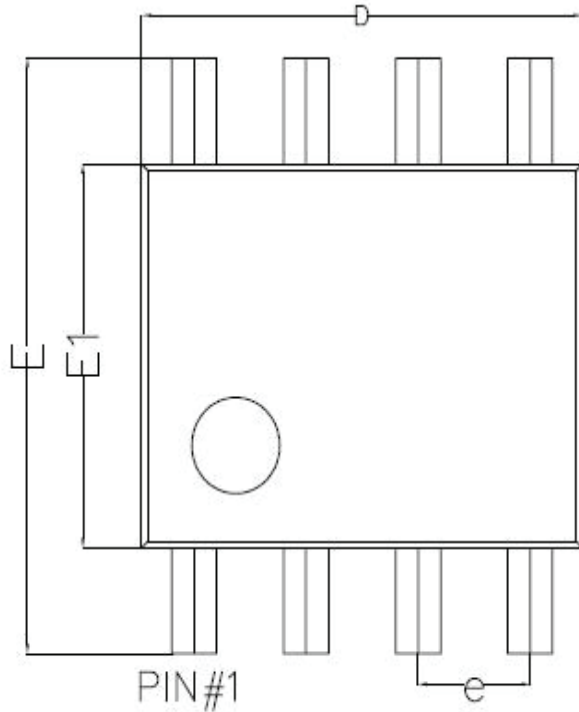
Typical Characteristics



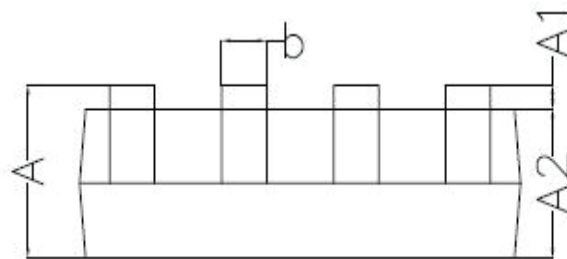
Package Dimension

SOP-8

Unit :mm



GAUGE 0LANE



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°