

General Description

The CMS4946A uses advanced trench technology and design to provide excellent RDS(ON).

It can be used in a wide variety of applications.

Features

- Low On-Resistance
- Simple Drive Requirements
- Dual MOSFET in surface mount package
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	5	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	3.5	A
I_{DM}	Pulsed Drain Current	20	A
EAS	Single Pulse Avalanche Energy ¹	18	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	2	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	---	62.5	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	34	$^\circ C/W$

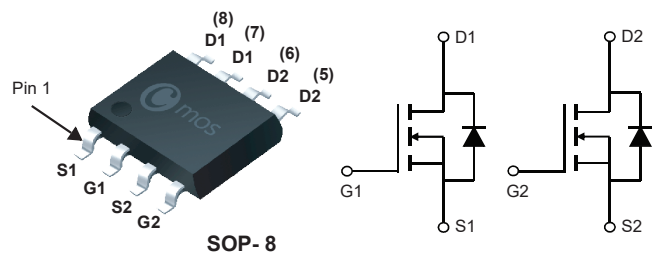
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
60V	44mΩ	5A

Applications

- Power switching application
- Hard Switched and High Frequency Circuits
- Uninterruptible Power Supply

SOP-8 Pin Configuration



Type	Package	Marking
CMS4946A	SOP- 8	CMS4946A

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 =250μA	60	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =5A	---	36	44	mΩ
		V _{GS} =4.5V , I _D =2.5A	---	41	50	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250μA	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} = ±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =5V , I _D =2.5A	---	6.6	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	1.1	---	Ω
Q _g	Total Gate Charge	V _{DS} =30V , V _{GS} =10V , I _D =5A	---	12	---	nC
Q _{gs}	Gate-Source Charge		---	1.8	---	
Q _{gd}	Gate-Drain Charge		---	2.8	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =30V , V _{GEN} =10V , R _L =6.8Ω R _G =1Ω , I _D ≥4.4A	---	7	---	ns
T _r	Rise Time		---	3.3	---	
T _{d(off)}	Turn-Off Delay Time		---	23	---	
T _f	Fall Time		---	2	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	680	---	pF
C _{oss}	Output Capacitance		---	50	---	
C _{rss}	Reverse Transfer Capacitance		---	30	---	

Diode Characteristics

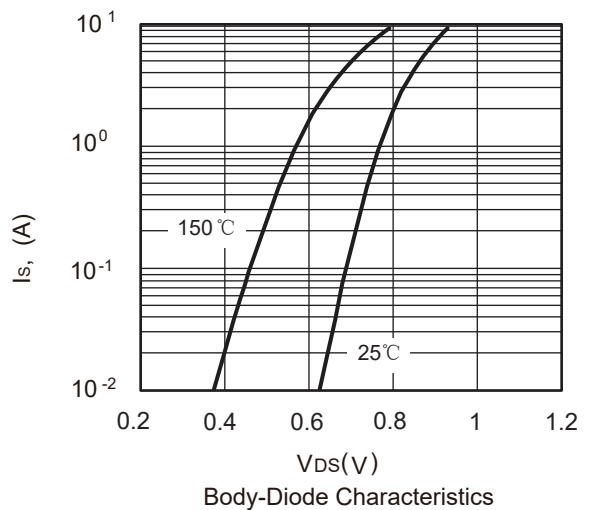
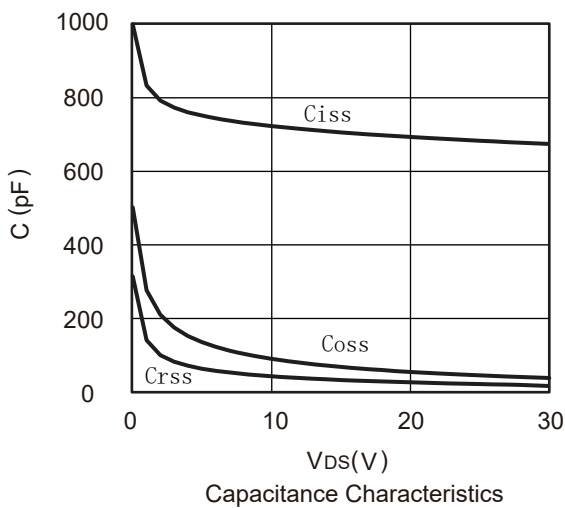
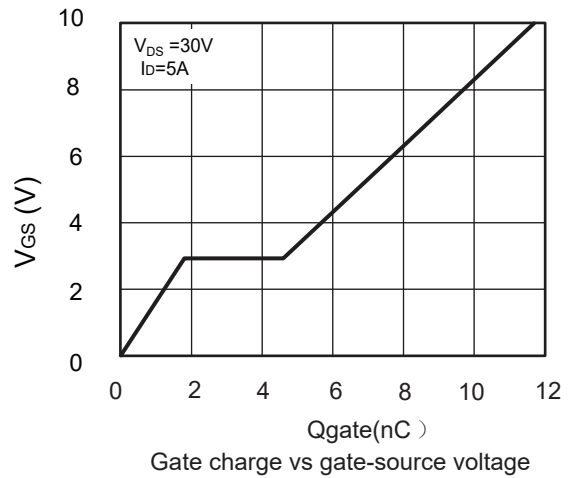
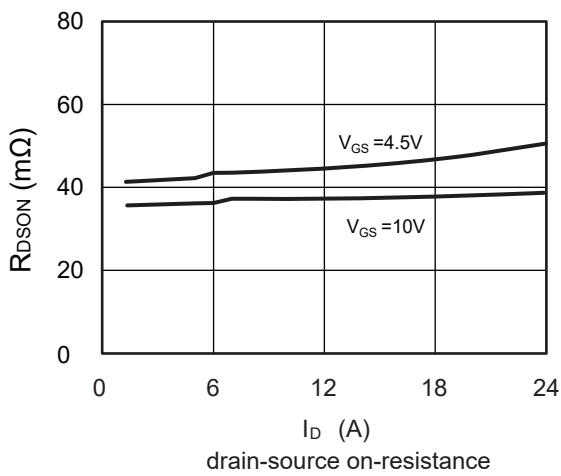
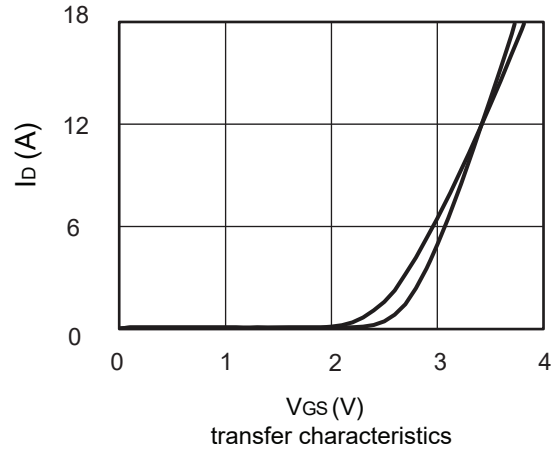
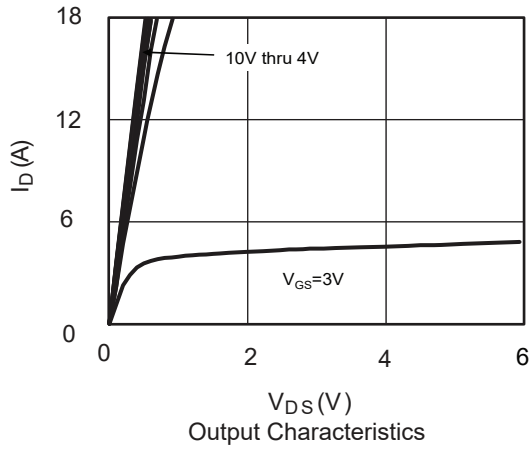
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	5	A
I _{SM}	Pulsed Source Current		---	---	20	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =1A , T _J =25°C	---	0.76	1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=30V , V_{GS}=10V , L=0.5mH , I_{AS}=8.5A.

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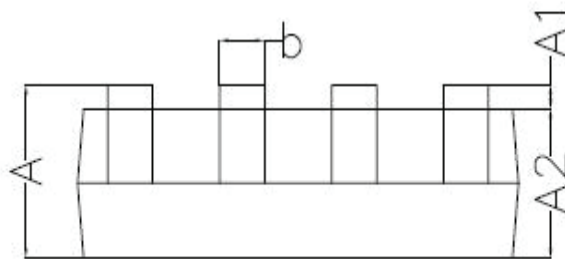
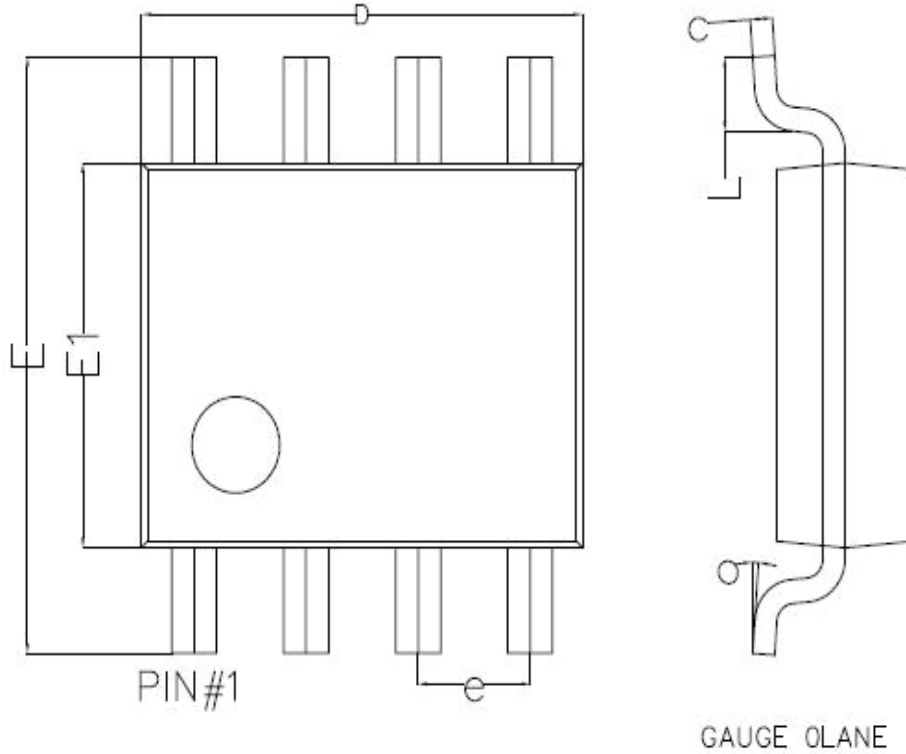
Typical Characteristics



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°