

General Description

The CMS4947B uses advanced trench technology to provide excellent RDS(ON). This device is suitable for use as a load switch or in PWM applications.

Features

- Low On-resistance
- Simple Drive Requirement
- 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
$I_D@T_A=25^\circ\text{C}$	Continuous Drain Current	-5	A
$I_D@T_A=70^\circ\text{C}$	Continuous Drain Current	-3.5	A
I_{DM}	Pulsed Drain Current	-20	A
EAS	Single Pulse Avalanche Energy ¹	64	mJ
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation	3.1	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Characteristics: n-channel

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	40	°C/W
$R_{\theta JL}$	Thermal Resistance Junction-Lead	---	30	°C/W

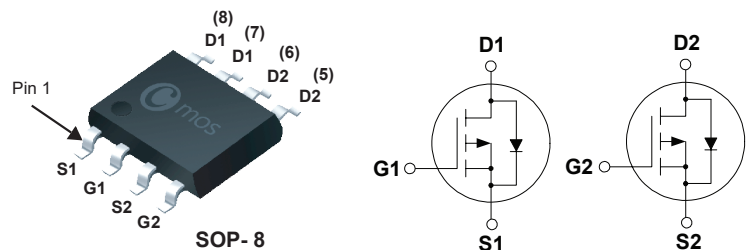
Product Summary

BVDSS	RDSON	ID
-60V	82mΩ	-5A

Applications

- Load Switch
- Power Management

SOP-8 Pin Configuration



Type	Package	Marking
CMS4947B	SOP-8	CMS4947B

Electrical Characteristics (T_A =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	---	72	82	mΩ
		V _{GS} =-4.5V, I _D =-3A	---	79	95	
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} =-55V, V _{GS} =0V	---	---	-1	uA
		V _{DS} =-55V, V _{GS} =0V, T _J =55°C	---	---	-5	
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =-5V, I _D =-5A	---	14	---	S
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	17	---	Ω
Q _g	Total Gate Charge	V _{DS} =-30V, V _{GS} =-10V, I _D =-5A	---	27	---	nC
Q _{gs}	Gate-Source Charge		---	4.5	---	
Q _{gd}	Gate-Drain Charge		---	5.0	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =-30V, V _{GS} =-10V, I _D =-5A R _G =50Ω	---	15	---	ns
T _r	Rise Time		---	37	---	
T _{d(off)}	Turn-Off Delay Time		---	131	---	
T _f	Fall Time		---	72	---	
C _{iss}	Input Capacitance	V _{DS} =-25V, V _{GS} =0V, f=1MHz	---	1600	---	pF
C _{oss}	Output Capacitance		---	60	---	
C _{rss}	Reverse Transfer Capacitance		---	40	---	

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 _F =-3A, T _J =25°C	---	-0.81	-1.2	V

Note:

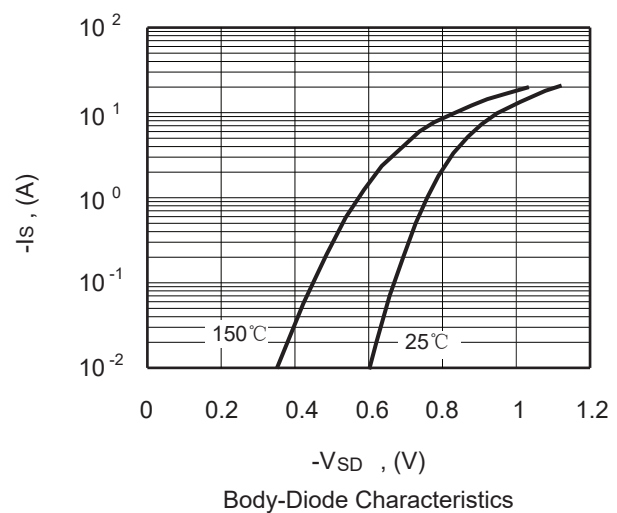
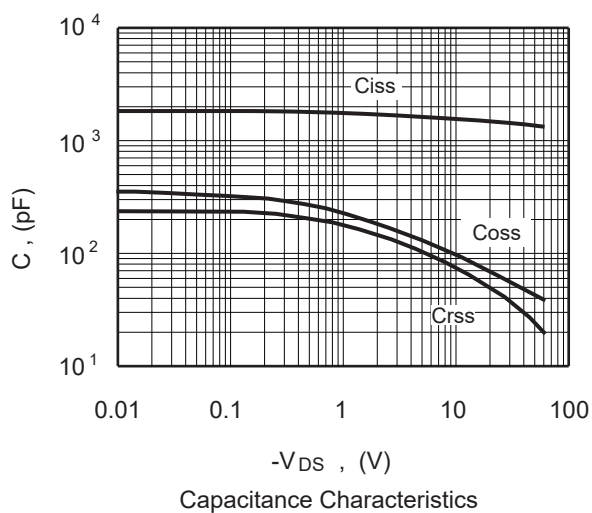
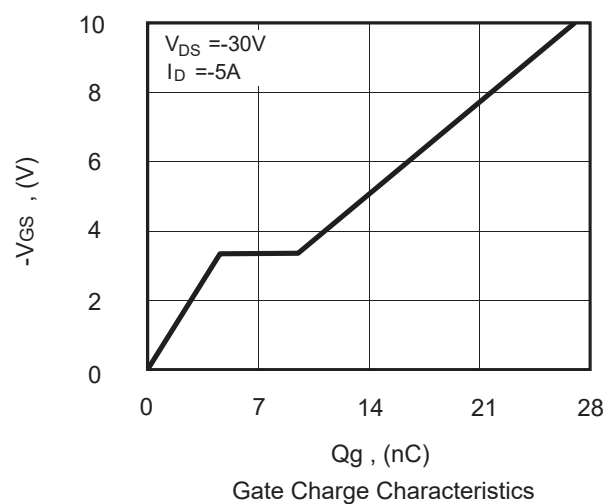
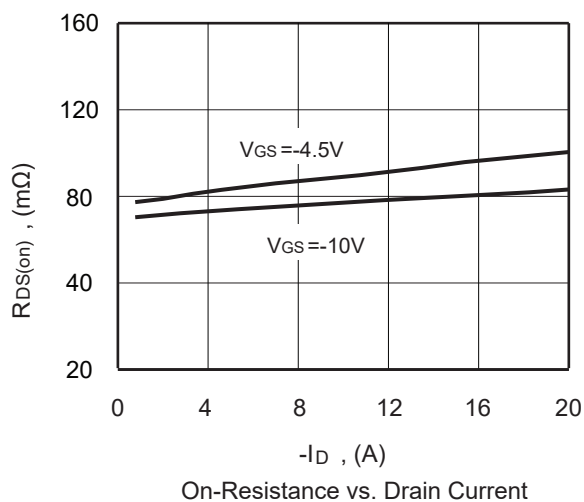
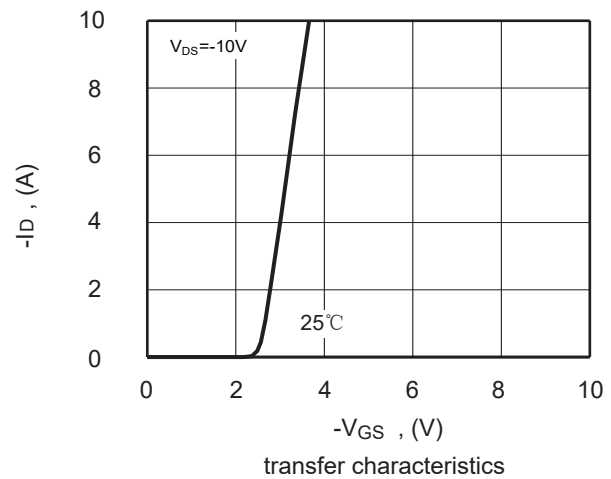
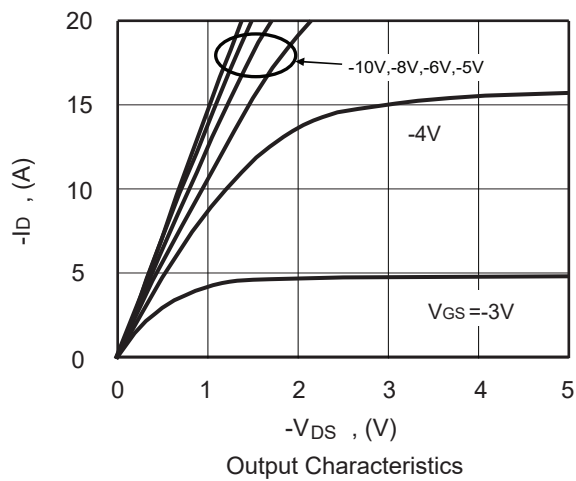
1. The EAS data shows Max. rating . The test condition is V_{DS}=-30V, V_{GS}=-10V, L=0.5mH, I_{AS}=-16A.

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

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

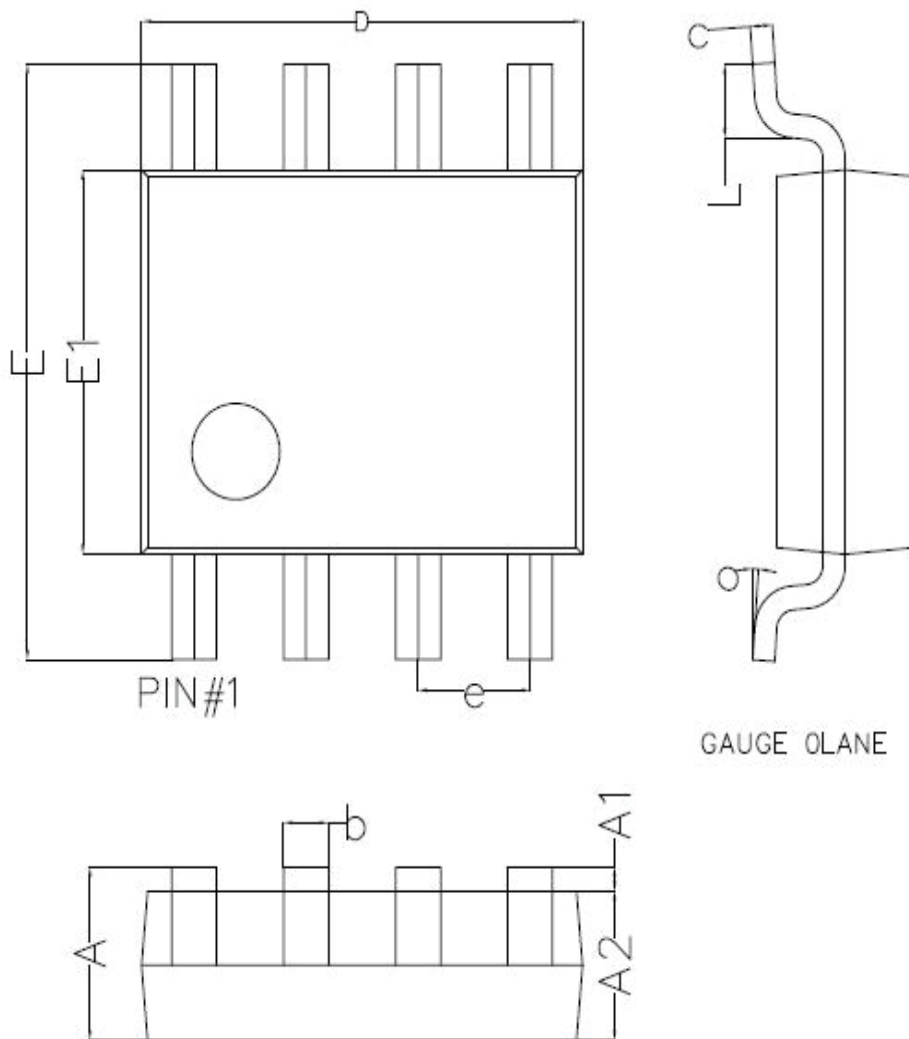
Typical Characteristics



Package Dimension

SOP-8

Unit :mm



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°