

GSMDS4910

40V N-Channel MOSFETs

Product Description

These N-Channel enhancement mode power field effect transistors are using trench DMOS technology. This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode.

These devices are well suited for high efficiency fast switching applications.

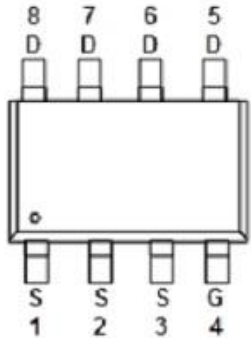
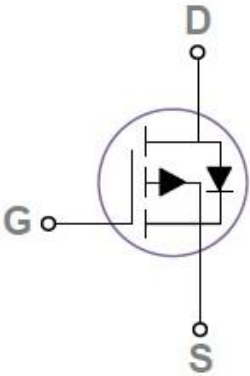
Features

- 40V, 6.7A, $R_{DS(ON)}=19m\Omega@V_{GS}=-10V$
- Improved dv/dt capability
- Fast switching
- Green Device Available
- SOP-8 package design

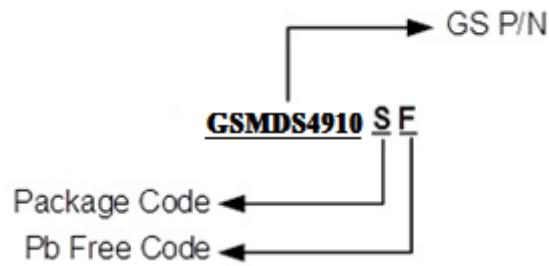
Applications

- Notebook
- Load Switch
- LED applications
- Hand-Held Device

Packages & Pin Assignments

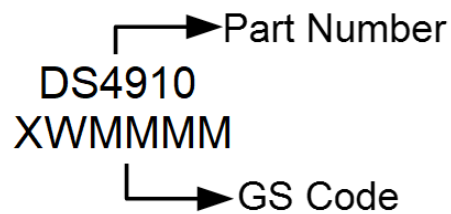
GSMDS4910SF(SOP-8)			
			
			
Pin	Description	Pin	Description
1	Source	5	Drain
2	Source	6	Drain
3	Source	7	Drain
4	Gate	8	Drain

Ordering Information



Part Number	Package	Quantity/Reel
GSMDS4910SF	SOP-8	4000 PCS

Marking Information



Absolute Maximum Ratings

T_A=25°C Unless otherwise noted

Symbol	Parameter	Typical	Unit
V _{DS}	Drain-Source Voltage	40	V
V _{GS}	Gate-Source Voltage	±20	V
I _D	Continuous Drain Current	T _A =25°C	6.7
		T _A =100°C	5.4
I _{DM}	Pulsed Drain Current	26.8	A
P _D	Power Dissipation (T _A =25°C)	1.47	W
	Power Dissipation (Derate above 25°C)	0.12	W/°C
T _J	Operating Junction Temperature Range	-55 to +150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient	85	°C/W

Electrical Characteristics

T_A=25°C Unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	40			V
ΔBV _{DSS} /ΔT _J	BV _{DSS} Temperature Coefficient	Reference to 25°C, I _D =1mA		0.034		V/°C
V _{GS(th)}	Gate Threshold Voltage		1.2	1.5	2.5	V
ΔV _{GS(th)}	V _{GS(th)} Temperature Coefficient	V _{DS} =V _{GS} , I _D =-250uA		-4.3		mV/°C
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±20V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =40V, V _{GS} =0V			1	uA
		V _{DS} =32V, V _{GS} =0V, T _J =85°C			10	
I _S	Continuous Source Current	V _G =V _D =0V, Force Current			6.7	A
I _{SM}	Pulsed Source Current				13.4	
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =10V, I _D =6A		16	19	mΩ
		V _{GS} =4.5V, I _D =4A		20	125	
g _{FS}	Forward Transconductance	V _{DS} =10V, I _D =3A		6		S
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =1A			1	V
Dynamic						
Q _g	Total Gate Charge	V _{DS} =32V, V _{GS} =10V, I _D =6A		11.8	23	nC
Q _{gs}	Gate-Source Charge			1.7	3.4	
Q _{gd}	Gate-Drain Charge			4	8	
C _{iss}	Input Capacitance	V _{DS} =20V, V _{GS} =0V, F=1MHz		722	1440	pF
C _{oss}	Output Capacitance			83	166	
C _{rss}	Reverse Transfer Capacitance			61	122	
t _{d(on)}	Turn-On Time	V _{DD} =20V, I _D =1A, V _{GS} =10V, R _G =3.3Ω		5	10	ns
t _r				8	16	
t _{d(off)}	Turn-Off Time			17	34	
t _f				5	10	

Typical Performance Characteristics

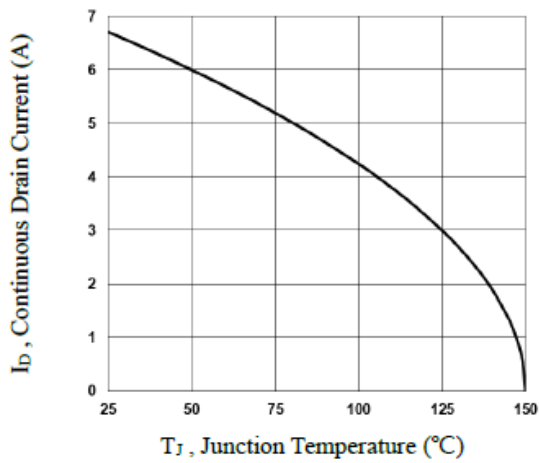


Fig.1 Continuous Drain Current vs. T_J

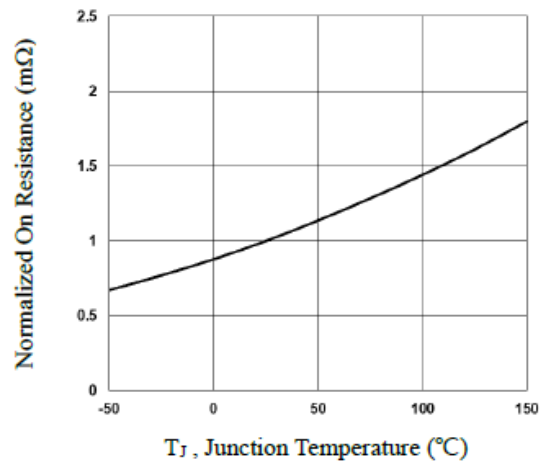


Fig.2 Normalized $R_{DS(on)}$ vs. T_J

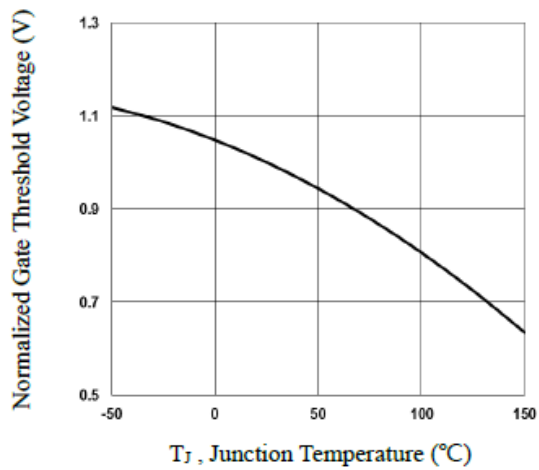


Fig.3 Normalized V_{th} vs. T_J

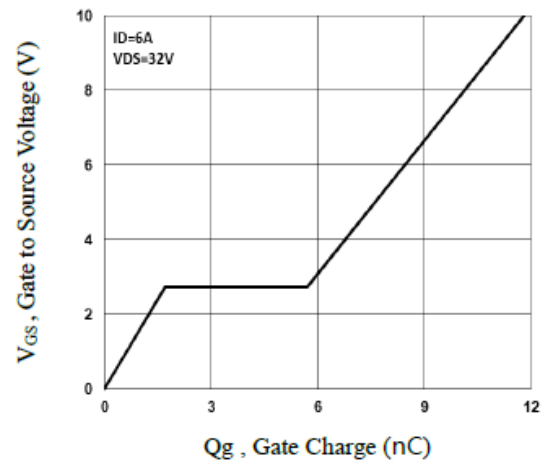


Fig.4 Gate Charge Waveform

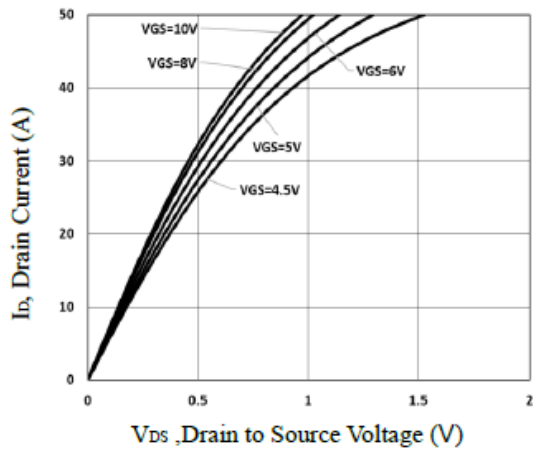


Fig.5 Typical Output Characteristics

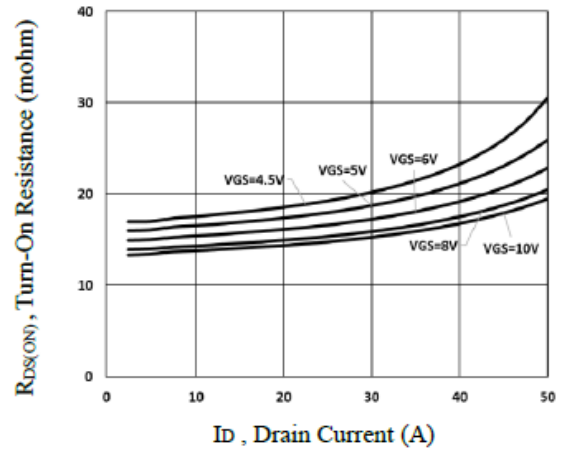


Fig.6 Turn-On Resistance vs. I_D

Typical Performance Characteristics (Continue)

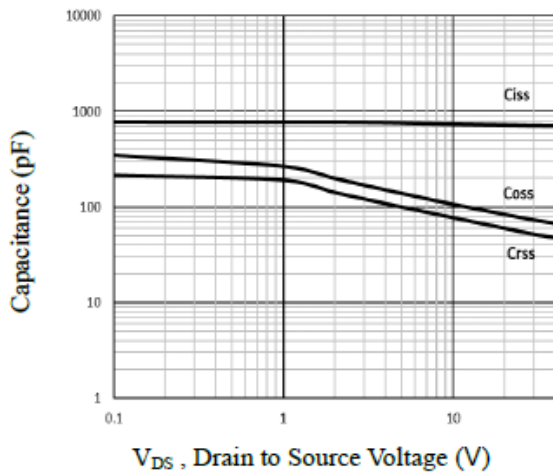


Fig.7 Capacitance Characteristics

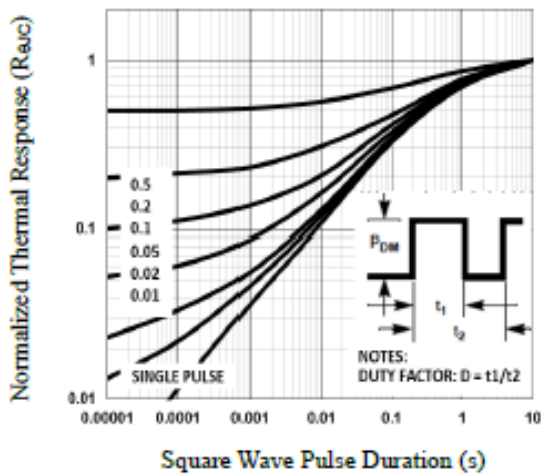


Fig.8 Normalized Transient Impedance

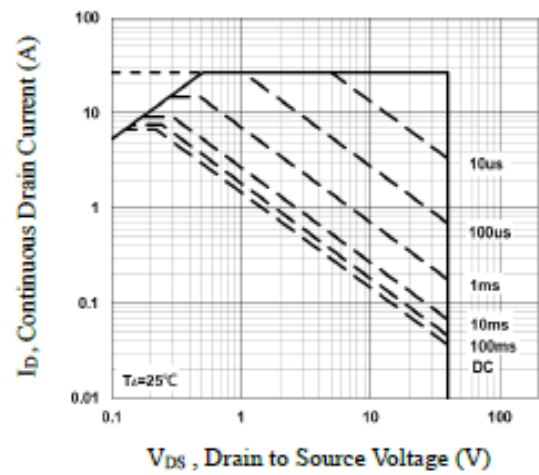


Fig.9 Maximum Safe Operation Area

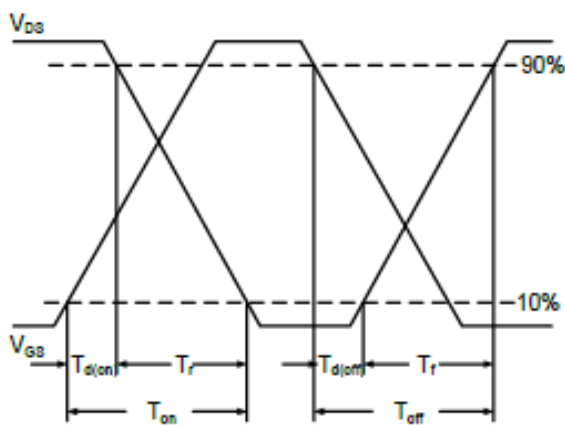


Fig.10 Switching Time Waveform

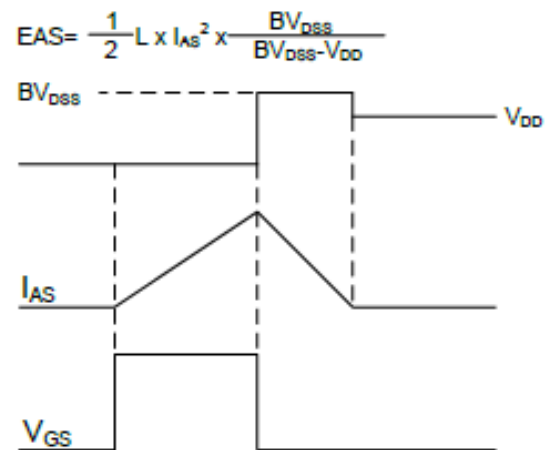
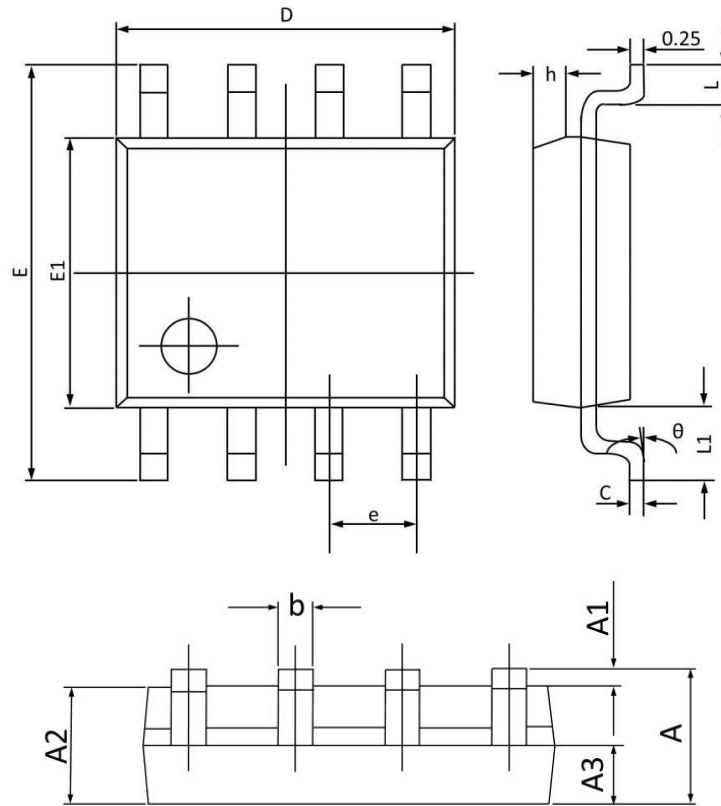


Fig.11 EAS Waveform

Package Dimension

SOP-8 PACKAGE









Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.068
A1	0.100	0.250	0.004	0.009
A2	1.300	1.500	0.052	0.059
A3	0.600	0.700	0.024	0.027
b	0.390	0.480	0.016	0.018
c	0.210	0.260	0.009	0.010
D	4.700	5.100	0.186	0.200
E	5.800	6.200	0.229	0.244
E1	3.700	4.100	0.146	0.161
e	1.270(BSC)		0.050(BSC)	
h	0.250	0.500	0.010	0.019
L	0.500	0.800	0.019	0.031
L1	1.050(BSC)		0.041(BSC)	
θ	0°	8°	0°	8°

NOTICE

Information furnished is believed to be accurate and reliable. However Globaltech Semiconductor assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties, which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Globaltech Semiconductor. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information without express written approval of Globaltech Semiconductor.

CONTACT US

GS Headquarter	
	4F.,No.43-1,Lane11,Sec.6,MinquanE.RdNeihuDistrictTaipeiCity 114, Taiwan (R.O.C)
	886-2-2657-9980
	886-2-2657-3630
	sales_twn@gs-power.com

RD Division	
	824 Bolton DriveMilpitas. CA. 95035
	1-408-457-0587