

GSM9910

100V N-Channel Enhancement Mode MOSFET

Product Description

GSM9910, N-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

These devices are particularly suited for low voltage power management, and low in-line power loss are needed in commercial industrial surface mount applications.

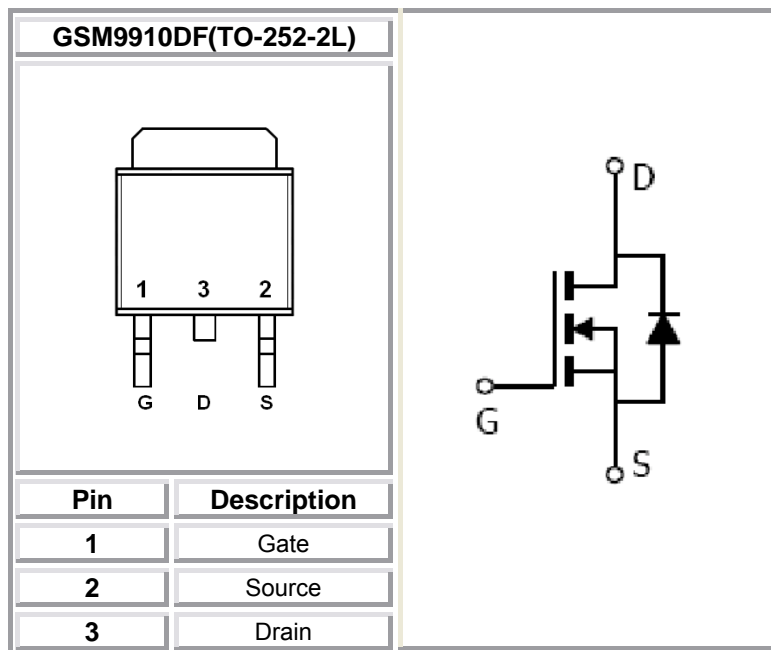
Features

- 100V/4A, $R_{DS(ON)}=320m\Omega@V_{GS}=10V$
- 100V/4A, $R_{DS(ON)}=340m\Omega@V_{GS}=4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- TO-252-2L package design

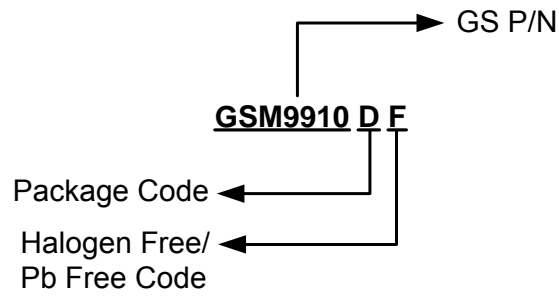
Applications

- High Frequency Boost Converter
- LED Backlight for LCD TV

Packages & Pin Assignments

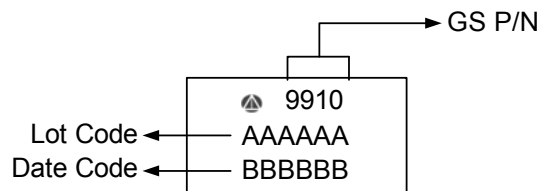


Ordering Information



Part Number	Package	Quantity Reel
GSM9910DF	TO-252-2L	2500 PCS

Marking Information



Absolute Maximum Ratings

T_A=25°C unless otherwise noted

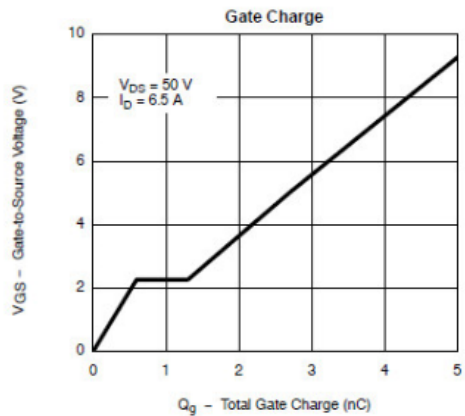
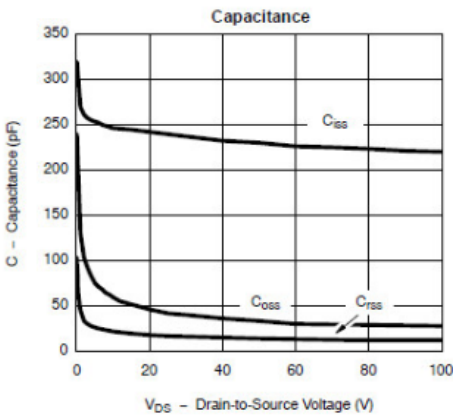
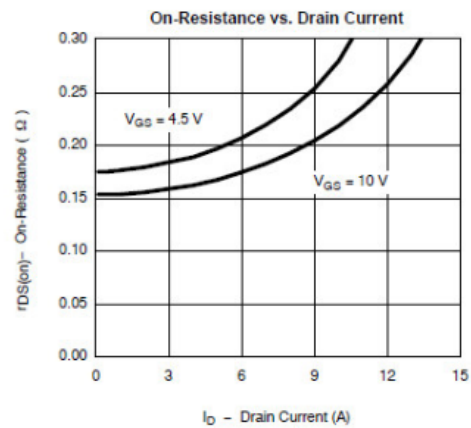
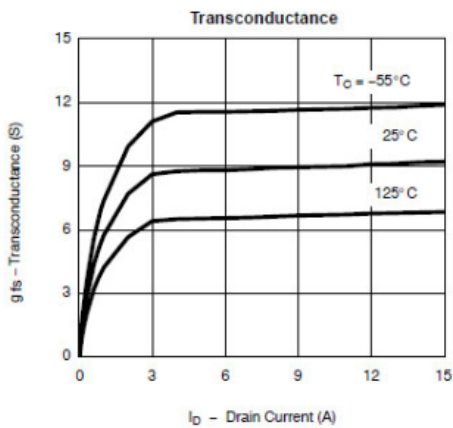
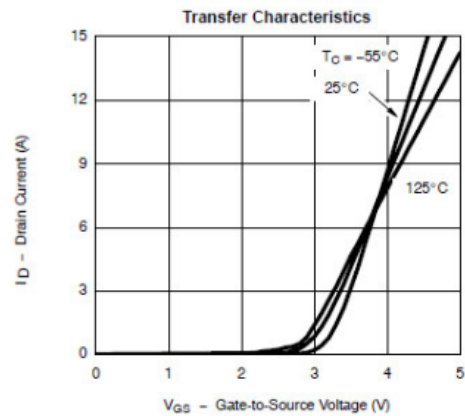
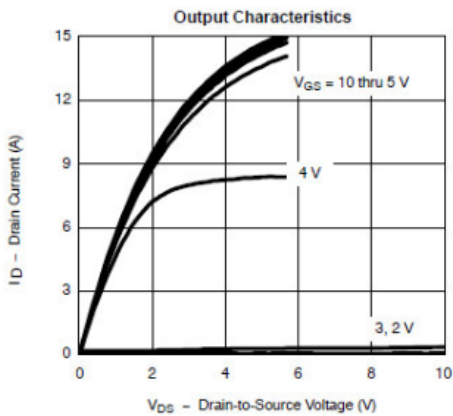
Symbol	Parameter	Typical	Unit
V _{DSS}	Drain-Source Voltage	100	V
V _{GSS}	Gate –Source Voltage	±20	V
I _D	Continuous Drain Current(T _J =150°C)	T _A =25°C	6.5
		T _A =70°C	3.8
I _{DM}	Pulsed Drain Current	8	A
I _S	Continuous Source Current(Diode Conduction)	6.5	
I _{AS}	Continuous Source Current(Diode Conduction)	7.0	
P _D	Power Dissipation	T _A =25°C	40
		T _A =70°C	15
T _J	Operating Junction Temperature	150	°C
T _{STG}	Storage Temperature Range	-55/150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient	62.5	°C/ W

Electrical Characteristics

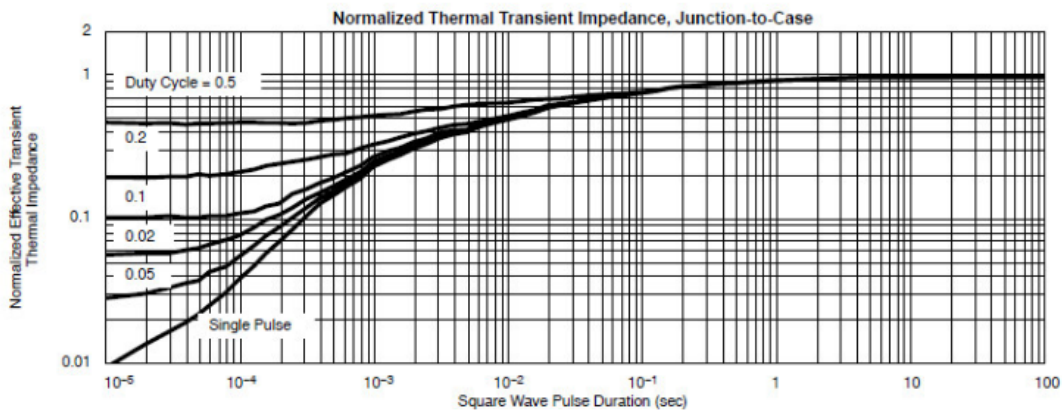
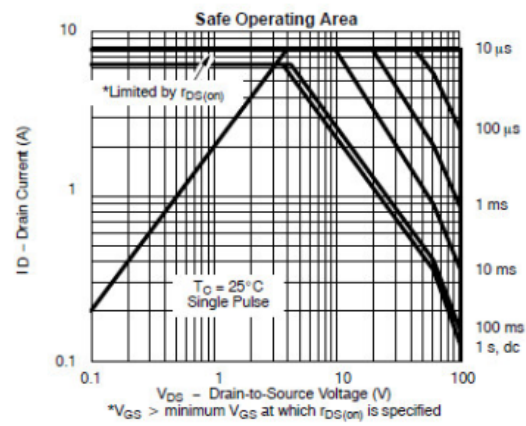
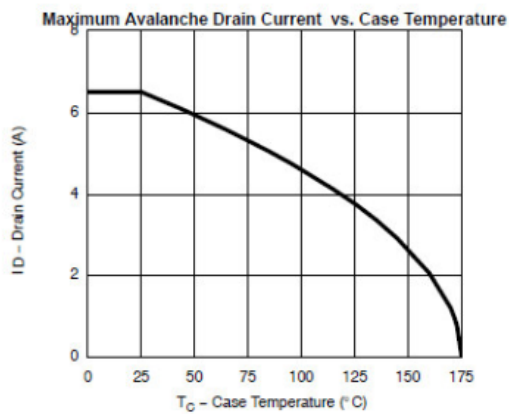
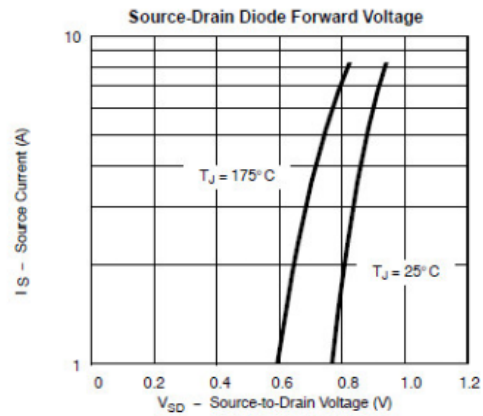
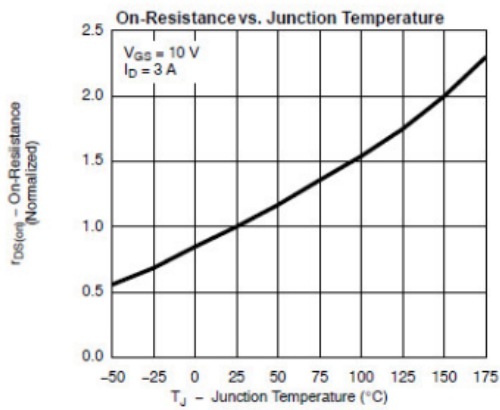
T_A=25°C unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	100			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	1.0		2.0	V
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±20V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =80V, V _{GS} =0V			1	uA
		V _{DS} =80V, V _{GS} =0V, T _J =85°C			5	
I _{D(on)}	On-State Drain Current	V _{DS} ≥5V, V _{GS} =4.5V	8			A
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =10V, I _D =4A		285	320	mΩ
		V _{GS} =4.5V, I _D =4A		298	340	
g _{FS}	Forward Transconductance	V _{DS} =15V, I _D =3A		8.5		S
V _{SD}	Diode Forward Voltage	I _S =6A, V _{GS} =0V		0.8	1.3	V
Dynamic						
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz		250		pF
C _{oss}	Output Capacitance			40		
C _{rss}	Reverse Transfer Capacitance			20		
Q _g	Total Gate Charge	V _{DS} =50V, V _{GS} =5V, I _D =6.5A		2.7	5	nC
Q _{gs}	Gate-Source Charge			0.7		
Q _{gd}	Gate-Drain Charge			0.7		
t _{d(on)}	Turn-On Time	V _{DD} =50V, R _L =7.5Ω, I _D =6.5A, V _{GEN} =10V, R _G =2.5Ω		7	12	ns
t _r				8	15	
t _{d(off)}	Turn-Off Time			8	15	
t _f				10	18	

Typical Performance Characteristics

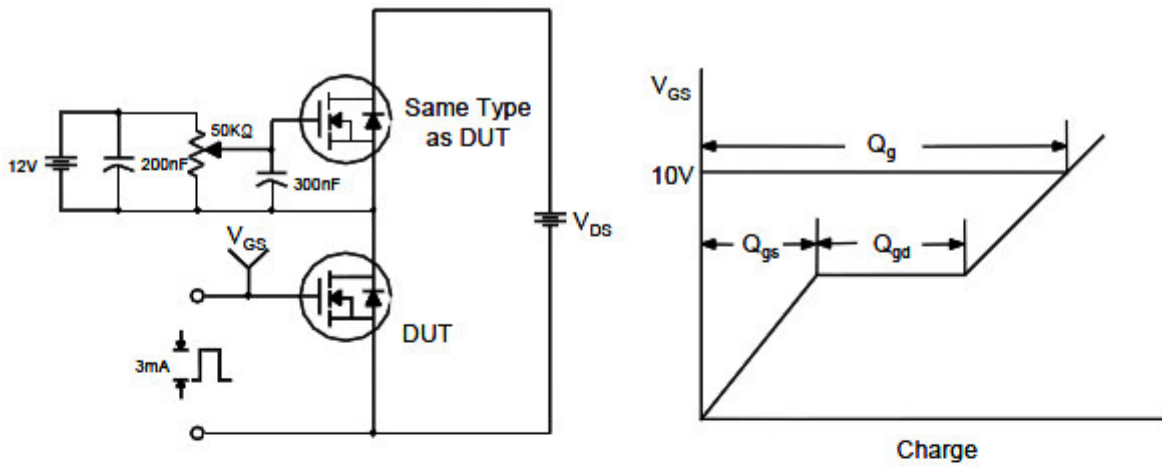


Typical Performance Characteristics (continue)

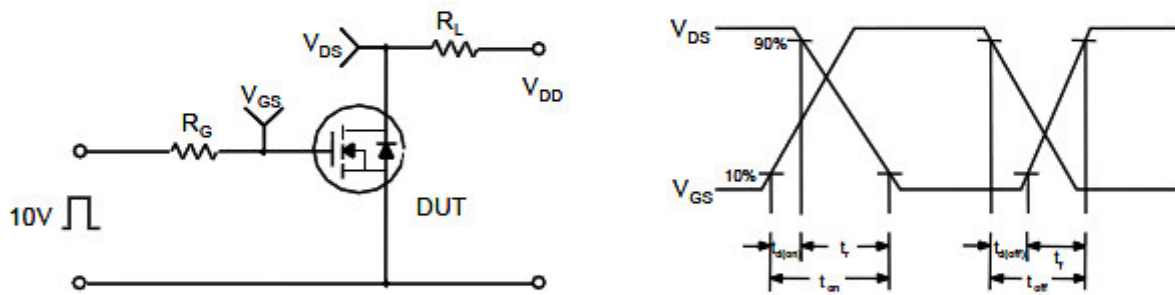


Typical Performance Characteristics (continue)

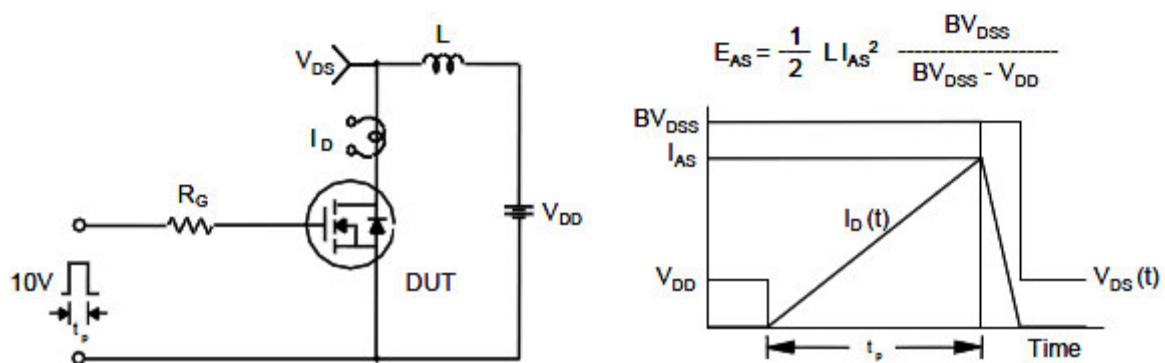
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

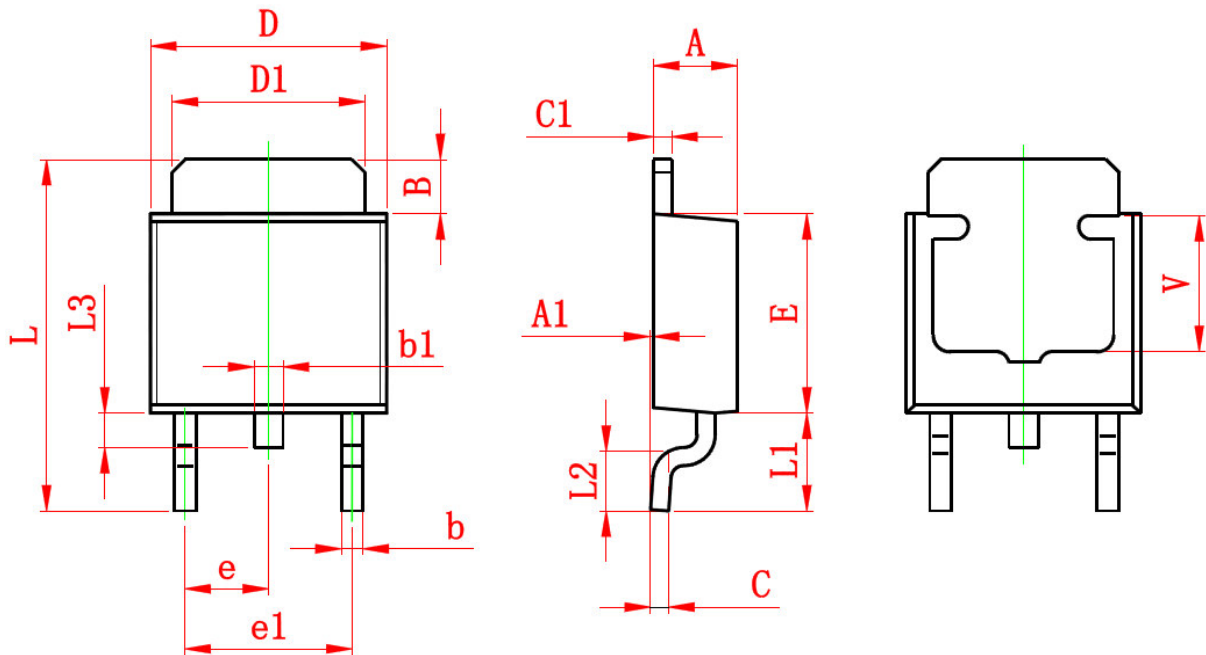


Unclamped Inductive Switching Test Circuit & Waveforms



Package Dimension

TO-252-2L PLASTIC PACKAGE





Dimensions


SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	5.700	0.213	0.224
e	2.300 TYP		0.091 TYP	
e1	4.500	4.700	0.177	0.185
L	9.500	9.900	0.374	0.390
L1	2.550	2.900	0.100	0.114
L2	1.400	1.780	0.055	0.070
L3	0.600	0.900	0.024	0.035
V	3.800 REF		0.150 REF	


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CONTACT US

GS Headquarter	
	4F.,No.43-1,Lane11,Sec.6,Minquan E.Rd Neihu District Taipei City 114, Taiwan (R.O.C)
	886-2-2657-9980
	886-2-2657-3630
	sales_twn@gs-power.com

Wu-Xi Branch	
	No.21 Changjiang Rd., WND, Wuxi, Jiangsu, China (INFO. &. TECH. Science Park Building A 210 Room)
	86-510-85217051
	86-510-85211238
	sales_cn@gs-power.com

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