

GSM3911W

30V P-Channel Enhancement Mode MOSFET

Product Description

GSM3911W, P-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, such as smart phone and notebook computer and other battery powered circuits, and low in-line power loss are needed in commercial industrial surface mount applications.

Features

- -30V/-3.0A, $R_{DS(ON)}=68m\Omega@V_{GS}=-10V$
- -30V/-2.0A, $R_{DS(ON)}=95m\Omega@V_{GS}=-4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- DFN2X2-6L package design

Applications

- Portable Equipment
- Battery Powered System
- Load Switch

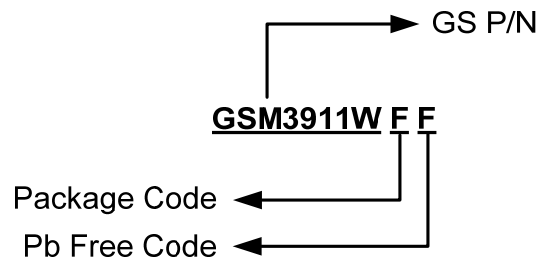
Packages & Pin Assignments

GSM3911WFF (DFN2X2-6L)

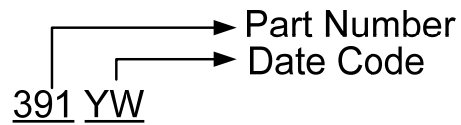
Bottom View

Pin	Symbol	Description
1	S1	Source 1
2	G1	Gate 1
3	D2	Drain 2
4	S2	Source 2
5	G2	Gate 2
6	D1	Drain1

Ordering Information



Marking Information



Part Number	Package	Part Marking	Quantity Reel
GSM3911WFF	DFN2X2-6L	391YW	2500 PCS

Absolute Maximum Ratings

T_A=25°C Unless otherwise noted

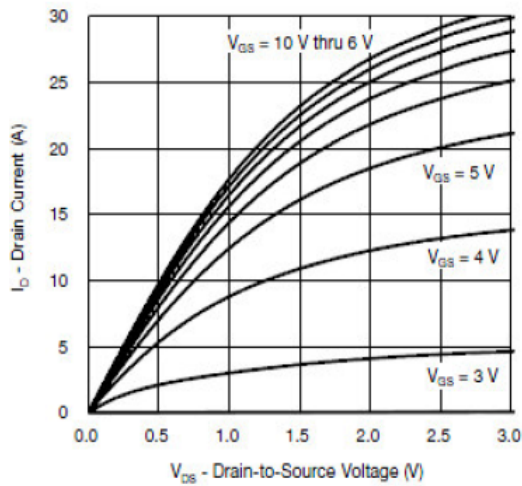
Symbol	Parameter	Typical	Unit
V _{DSS}	Drain-Source Voltage	-30	V
V _{GSS}	Gate –Source Voltage	±20	V
I _D	Continuous Drain Current (T _J =150°C)	T _A =25°C	-4.3
		T _A =70°C	-3.4
I _{DM}	Pulsed Drain Current	-28	A
I _S	Continuous Source Current (Diode Conduction)	-1.6	A
P _D	Power Dissipation	T _A =25°C	7.8
		T _A =70°C	5.0
T _J	Operating Junction Temperature	150	°C
T _{STG}	Storage Temperature Range	-55/150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient	120	°C/W

Electrical Characteristics

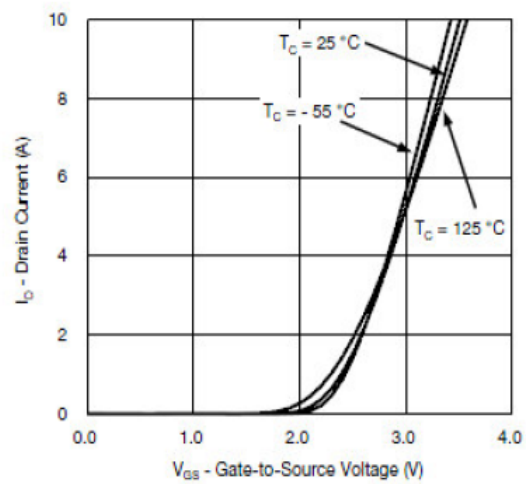
T_A=25°C Unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250uA	-1.0		-2.0	
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±12V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-24V, V _{GS} =0V			-1	uA
		V _{DS} =-24V, V _{GS} =0V, T _J =85°C			-30	
I _{D(on)}	On-State Drain Current	V _{DS} ≤ -5V, V _{GS} =-10V	-10			A
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =-10V, I _D =-3.0A		55	68	mΩ
		V _{GS} =-4.5V, I _D =-2.0A		70	95	
g _{FS}	Forward Transconductance	V _{DS} =-15V, I _D =-3A		8		S
V _{SD}	Diode Forward Voltage	I _S =-3A, V _{GS} =0V		-0.75	-1.3	V
Dynamic						
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, f=1MHz		450		pF
C _{oss}	Output Capacitance			56		
C _{rss}	Reverse Transfer Capacitance			46		
Q _g	Total Gate Charge	V _{DS} =-10V, V _{GS} =-4.5V, I _D =-4A		4.2	7.2	nC
Q _{gs}	Gate-Source Charge			1.3		
Q _{gd}	Gate-Drain Charge			1.6		
t _{d(on)}	Turn-On Time	V _{DD} =-15V, R _L =5Ω, I _D =-3A, V _{GEN} =-10V, R _G =1Ω		10	20	ns
t _r				5	10	
t _{d(off)}	Turn-Off Time			20	40	
t _f				5	10	

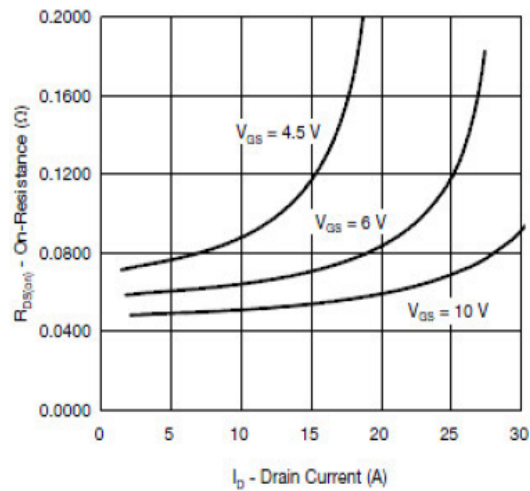
Typical Performance Characteristics



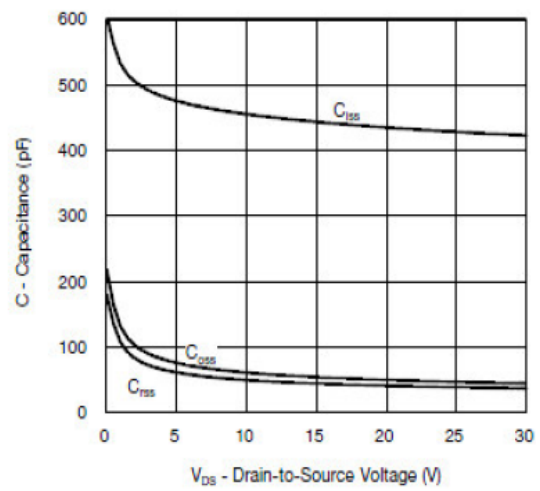
Output Characteristics



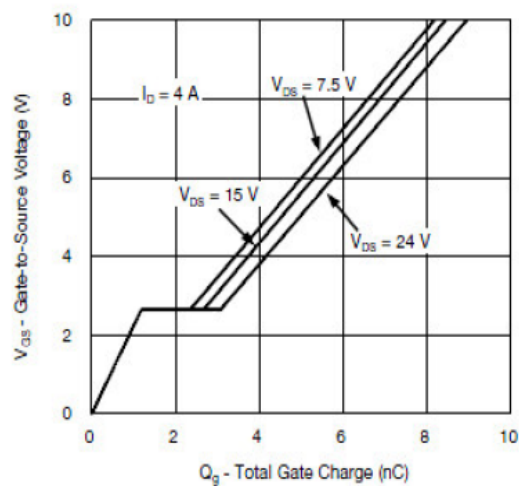
Transfer Characteristics



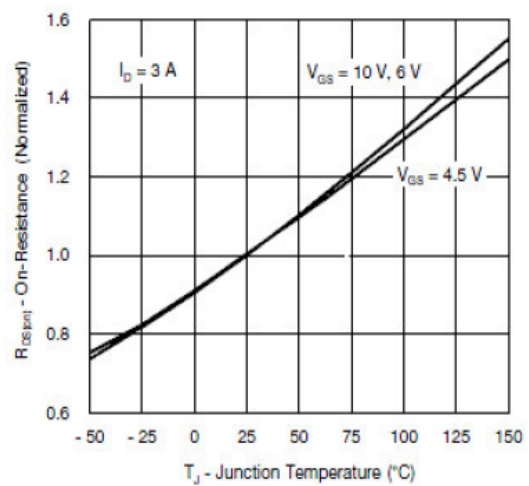
On-Resistance vs. Drain Current and Gate Voltage



Capacitance

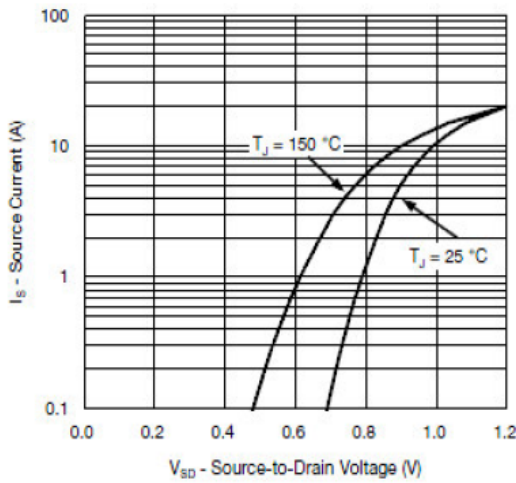


Gate Charge

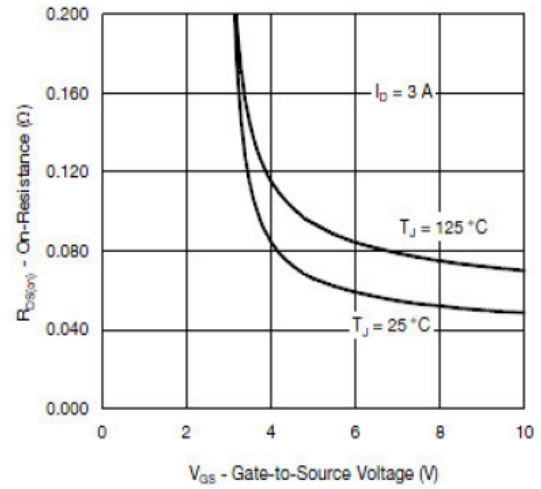


On-Resistance vs. Junction Temperature

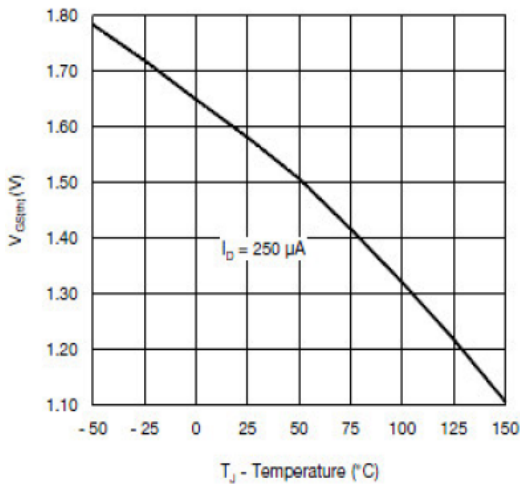
Typical Performance Characteristics (continue)



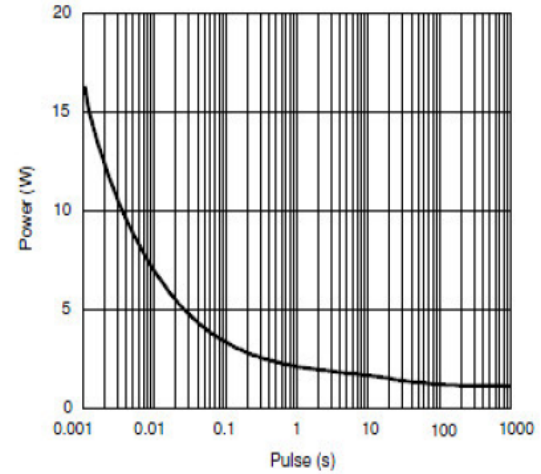
Source-Drain Diode Forward Voltage



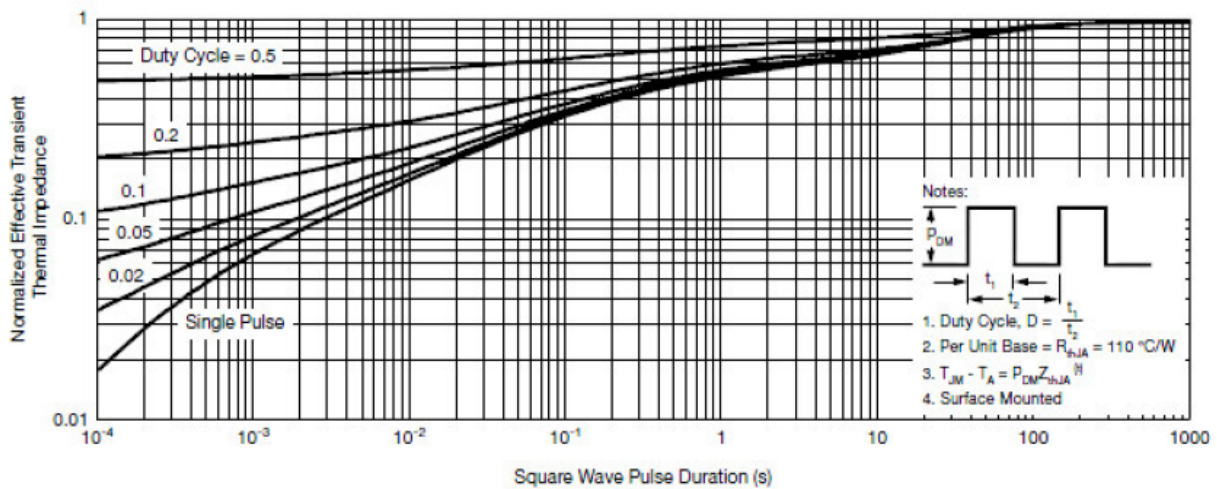
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



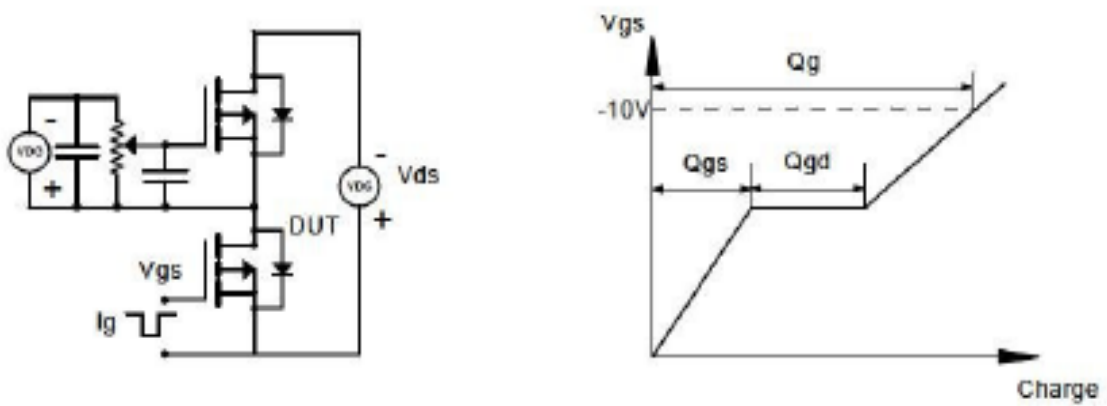
Single Pulse Power, Junction-to-Ambient



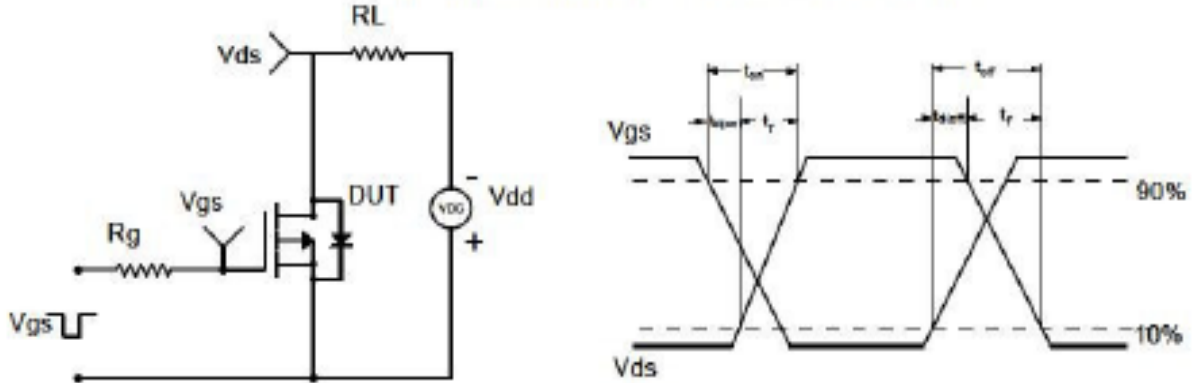
Normalized Thermal Transient Impedance, Junction-to-Ambient

Typical Performance Characteristics (continue)

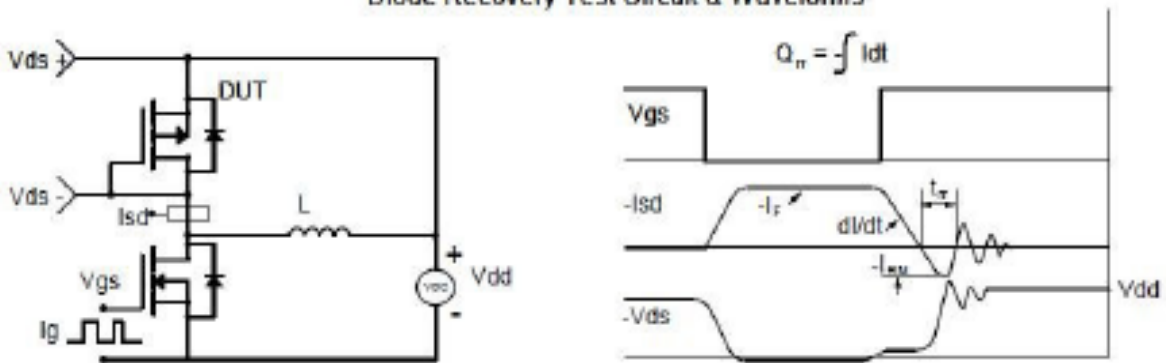
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

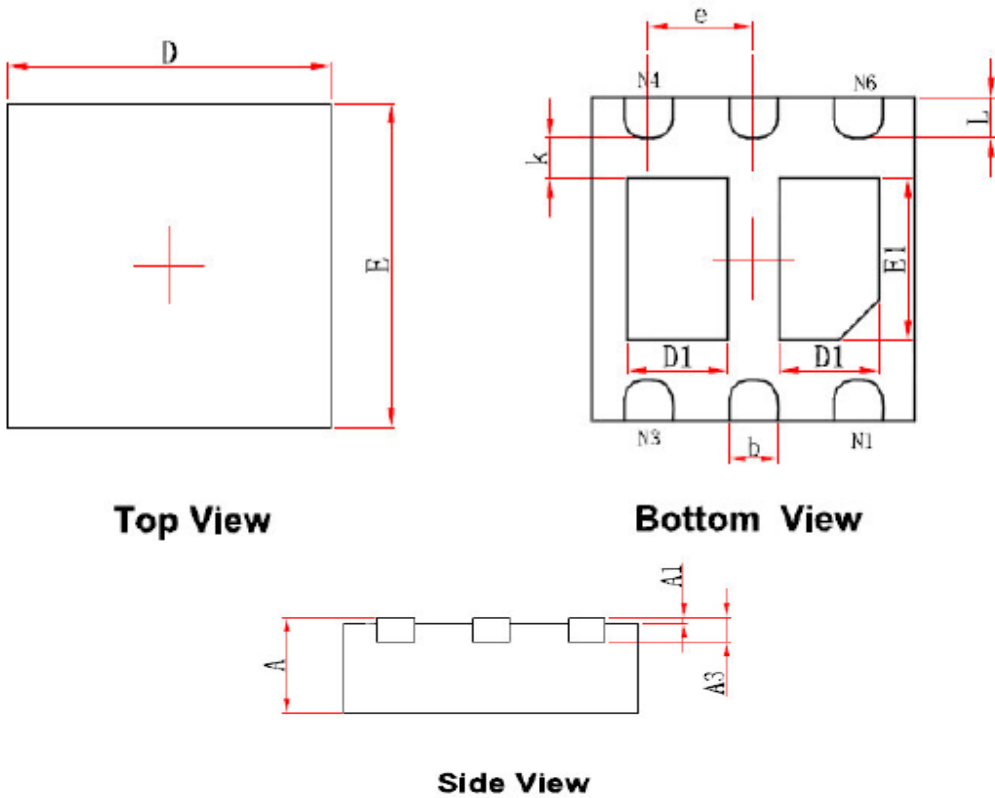


Diode Recovery Test Circuit & Waveforms



Package Dimension

DFN2X2-6L







Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.700/0.800	0.800/0.900	0.028/0.031	0.031/0.035
A1	0.000	0.050	0.000	0.002
A3	0.203 (REF)		0.008 (REF)	
D	1.924	2.076	0.076	0.082
E	1.924	2.076	0.076	0.082
D1	0.520	0.720	0.020	0.028
E1	0.900	1.100	0.035	0.043
k	0.200 (MIN)		0.008 (MIN)	
b	0.250	0.350	0.010	0.014
e	0.650 (TYP)		0.026 (TYP)	
L	0.174	0.326	0.007	0.013



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