



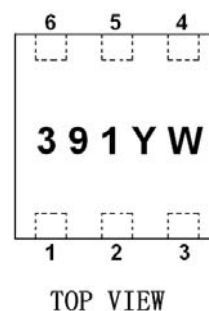
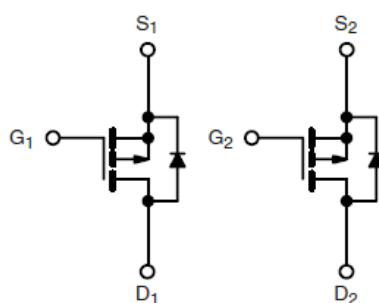
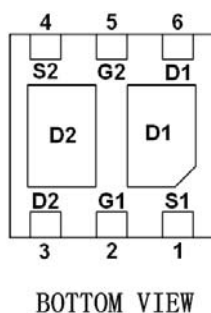
General Description

AFP3911W, 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/-3A, $R_{DS(ON)}=68m\Omega@V_{GS}=-10V$
- -30V/-2A, $R_{DS(ON)}=88m\Omega@V_{GS}=-4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- DFN2X2-6L package design

Pin Description (DFN2X2-6L)



Application

- Smart Phones, Tablet PCs, Mobile Computing :
 - Battery Switches
 - Load Switches
 - Power Management

Pin Define

Pin	Symbol	Description
1	S1	Source1
2	G1	Gate1
3	D2	Drain2
4	S2	Source2
5	G2	Gate2
6	D1	Drain1

Ordering Information

Part Ordering No.	Part Marking	Package	Unit	Quantity
AFP3911WFN226RG	391YW	DFN2X2-6L	Tape & Reel	4000 EA

- ※ 391 parts code
- ※ Y year code
- ※ W week code (A ~ Z = 1 ~ 26 / a ~ z = 27 ~ 52)
- ※ AFP3911WFN226RG : 7" Tape & Reel ; Pb- Free ; Halogen- Free



Absolute Maximum Ratings

(T_A=25°C Unless otherwise noted)

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

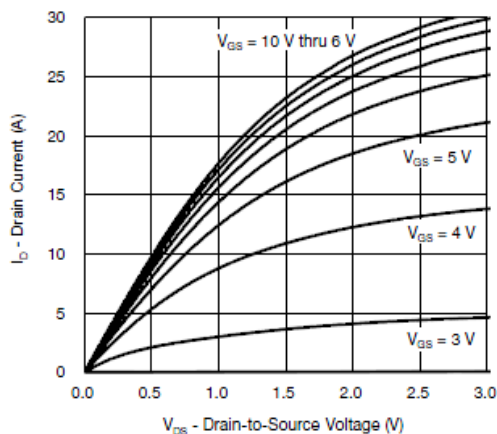
Electrical Characteristics

(T_A=25°C Unless otherwise noted)

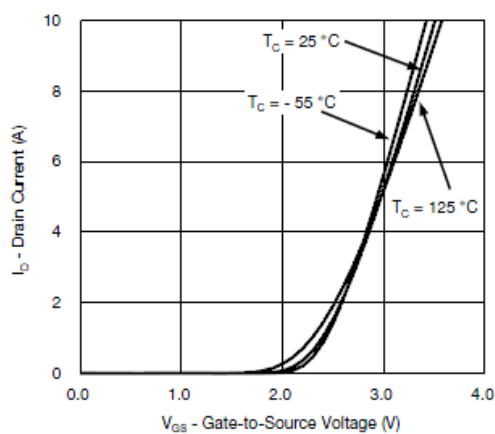
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-250uA	-30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250uA	-1.0		-2.0	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-24V, V _{GS} =0V			-1	uA
		V _{DS} =-24V, V _{GS} =0V			-30	
		T _J =85°C				
On-State Drain Current	I _{D(on)}	V _{DS} ≤ -5V, V _{GS} =-10V	-10			A
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-3A		55	68	mΩ
		V _{GS} =-4.5V, I _D =-2A		75	88	
Forward Transconductance	g _{FS}	V _{DS} =-15V, I _D =-3A		8		S
Diode Forward Voltage	V _{SD}	I _S =-3A, V _{GS} =0V		-0.75	-1.3	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} =-10V, V _{GS} =-4.5V I _D =-4.0A		4.2	7.2	nC
Gate-Source Charge	Q _{gs}			1.3		
Gate-Drain Charge	Q _{gd}			1.6		
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V f=1MHz		450		pF
Output Capacitance	C _{oss}			56		
Reverse Transfer Capacitance	C _{rss}			46		
Turn-On Time	t _{d(on)}	V _{DD} =-15V, R _L =5Ω I _D =-3A, V _{GEN} =-10V R _G =1Ω		10	20	ns
	t _r			5	10	
Turn-Off Time	t _{d(off)}			20	40	
	t _f			5	10	



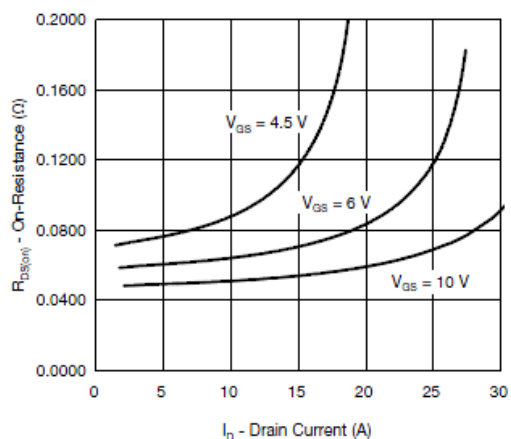
Typical Characteristics



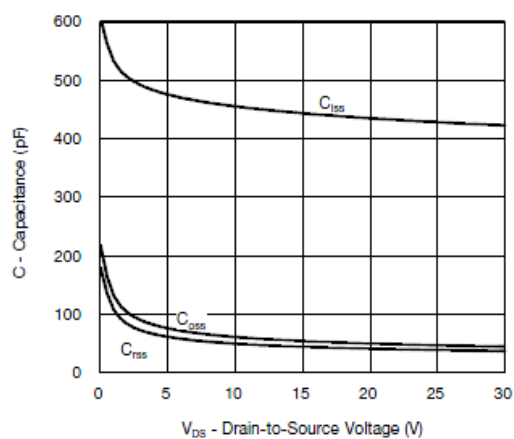
Output Characteristics



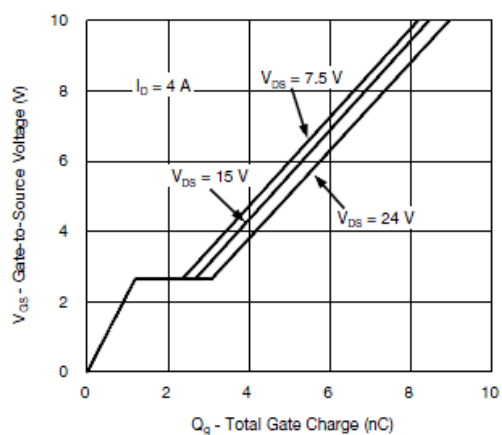
Transfer Characteristics



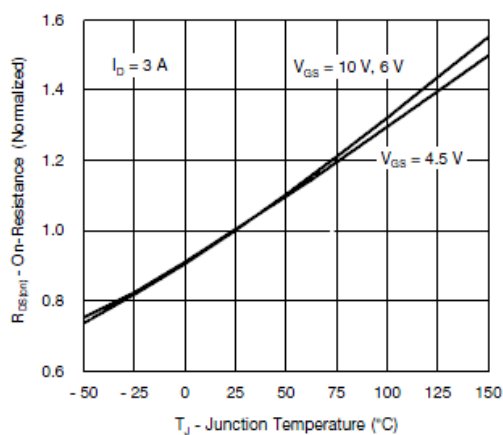
On-Resistance vs. Drain Current and Gate Voltage



Capacitance



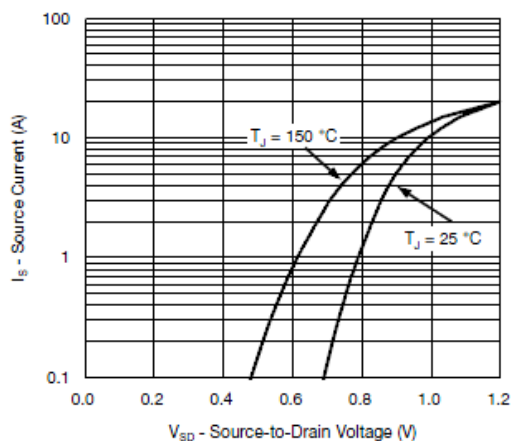
Gate Charge



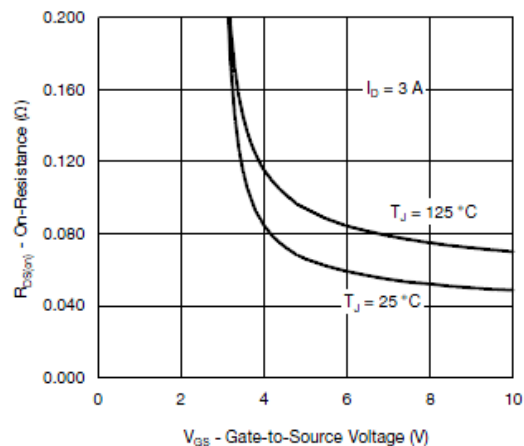
On-Resistance vs. Junction Temperature



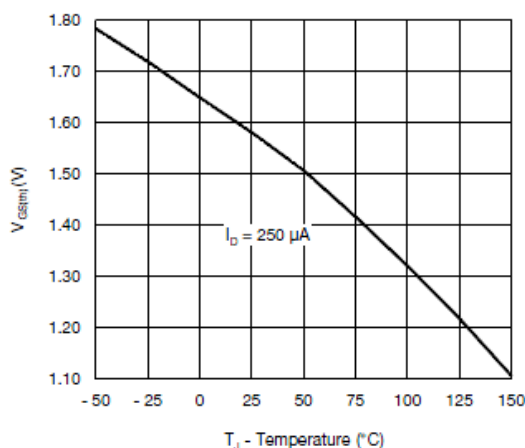
Typical Characteristics



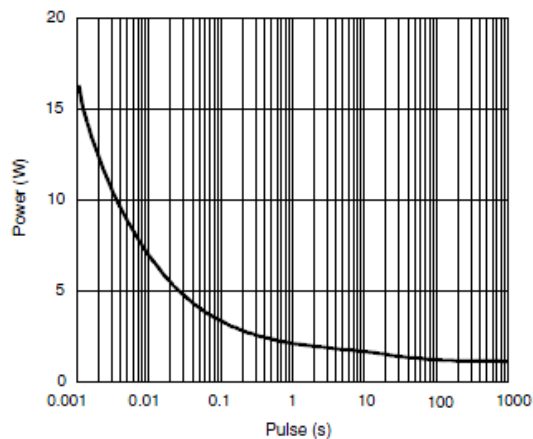
Source-Drain Diode Forward Voltage



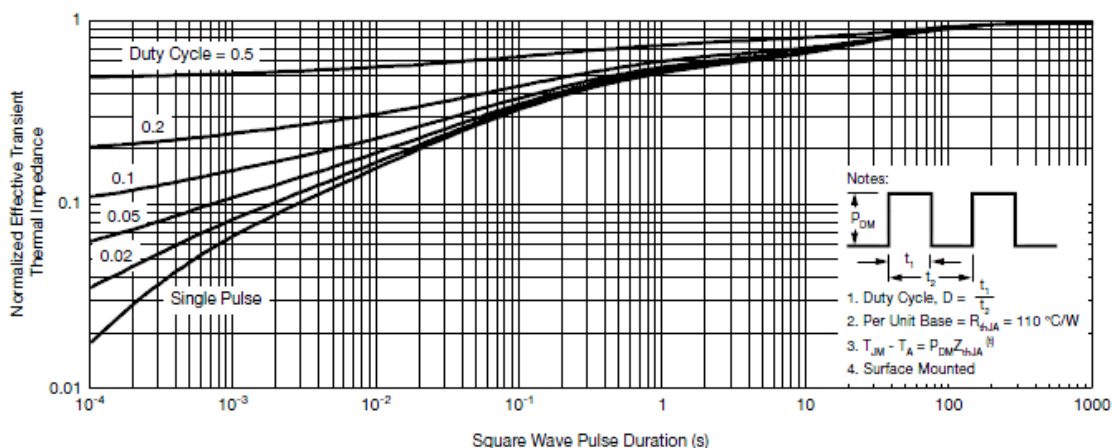
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



Single Pulse Power, Junction-to-Ambient

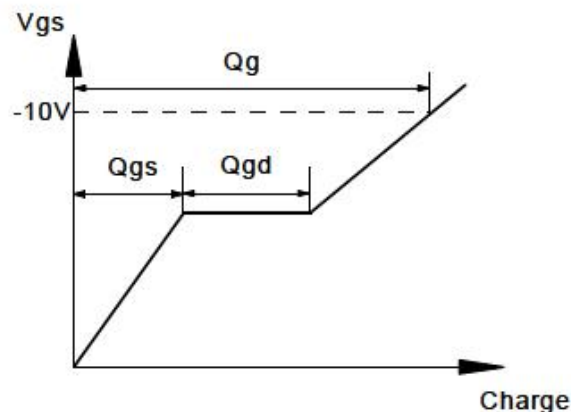
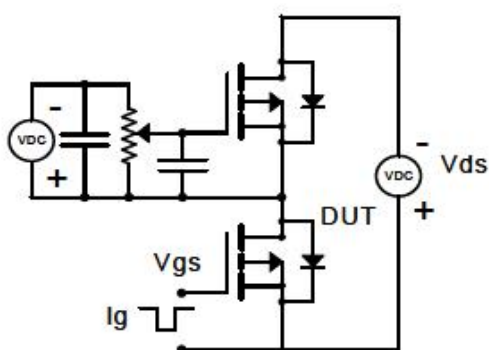


Normalized Thermal Transient Impedance, Junction-to-Ambient

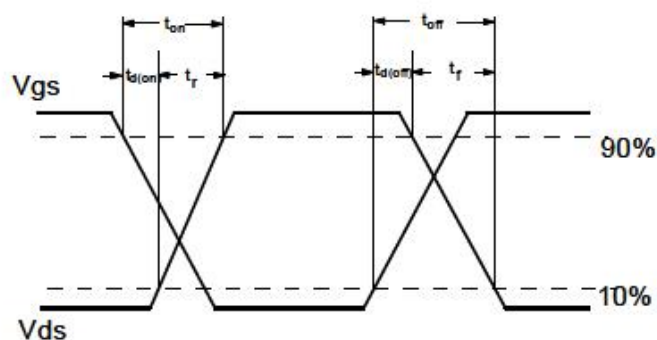
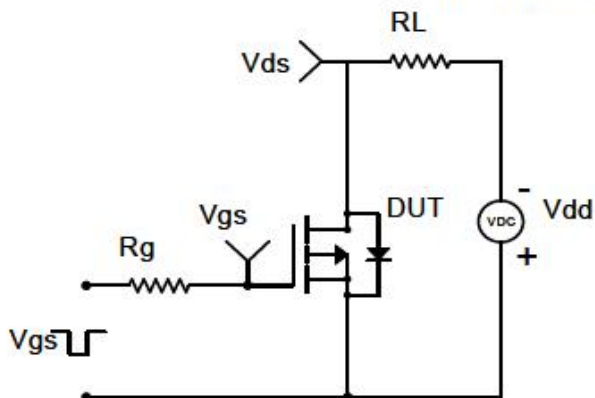


Typical Characteristics

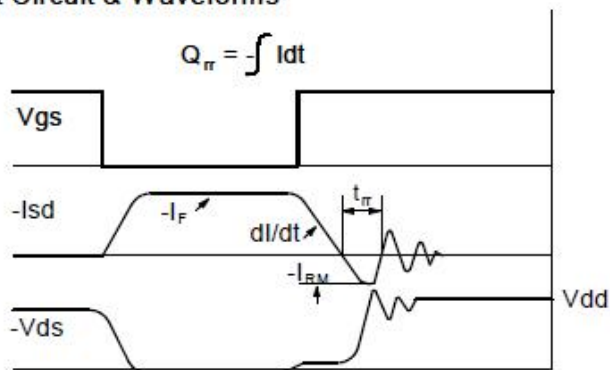
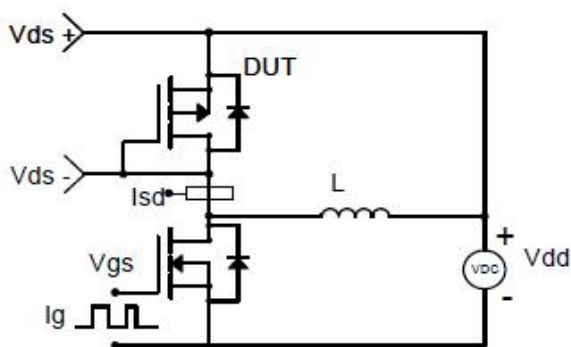
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

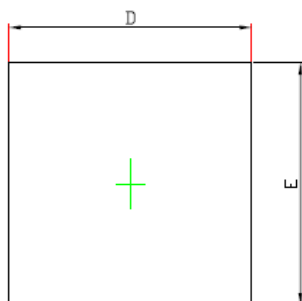


Diode Recovery Test Circuit & Waveforms

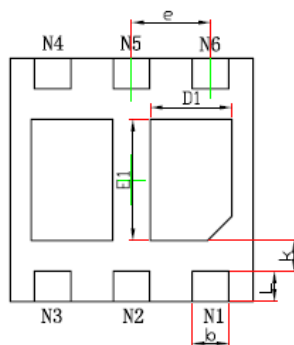




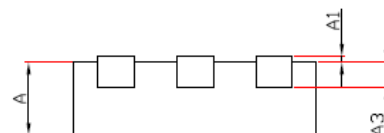
Package Information (DFN2X2-6L)



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In 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	0.203REF.		0.008REF.	
D	1.950	2.050	0.077	0.081
E	1.950	2.050	0.077	0.081
D1	0.570	0.770	0.022	0.030
E1	0.900	1.100	0.035	0.043
k	0.200MIN.		0.008MIN.	
b	0.250	0.350	0.010	0.014
e	0.65TYP.		0.026TYP.	
L	0.200	0.300	0.008	0.012

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