



General Description

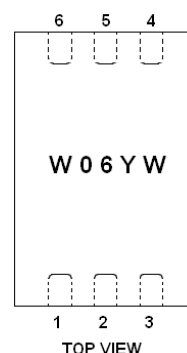
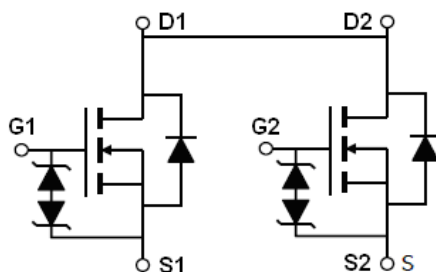
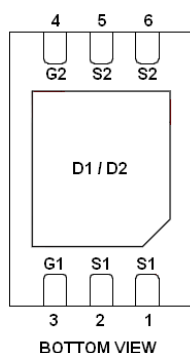
AFN8206WS, N-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

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

- $I_D=3.0A, R_{DS(ON)}=11m\Omega@V_{GS}=4.5V$
- $I_D=3.0A, R_{DS(ON)}=13m\Omega@V_{GS}=2.5V$
- $I_D=2.5A, R_{DS(ON)}=24m\Omega@V_{GS}=1.8V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- ESD Protection (2KV) Diode design-in
- DFN2X3-6L package design

Pin Description (DFN2X3-6L)



Application

- Load Switch
- Portable Equipment
- Battery Powered System

Pin Define

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

Ordering Information

Part Ordering No.	Part Marking	Package	Unit	Quantity
AFN8206WSFN236RG	W06YW	DFN2X3-6L	Tape & Reel	4000 EA

※ W06 parts code

※ Y year code

※ W week code

※ AFN8206WSFN236RG : 7" Tape & Reel ; Pb- Free ; Halogen- Free



Absolute Maximum Ratings

(T_A=25°C Unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DSS}	20	V
Gate –Source Voltage	V _{GSS}	±8	V
Continuous Drain Current(T _J =150°C)	I _D	T _A =25°C	11
		T _A =70°C	8
Pulsed Drain Current	I _{DM}	40	A
Power Dissipation	P _D	T _A =25°C	1.56
		T _A =70°C	1.0
Operating Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{STG}	-55/150	°C
Thermal Resistance-Junction to Ambient	R _{θJA}	65	°C/W

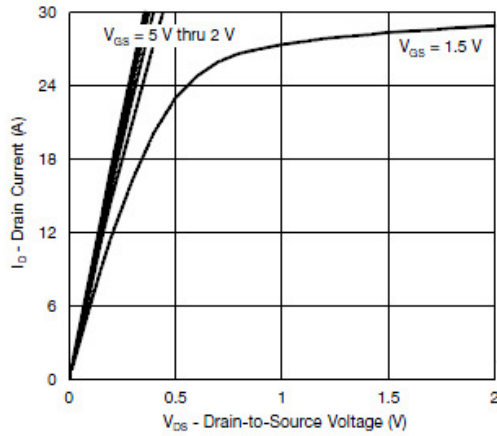
Electrical Characteristics

(T_A=25°C Unless otherwise noted)

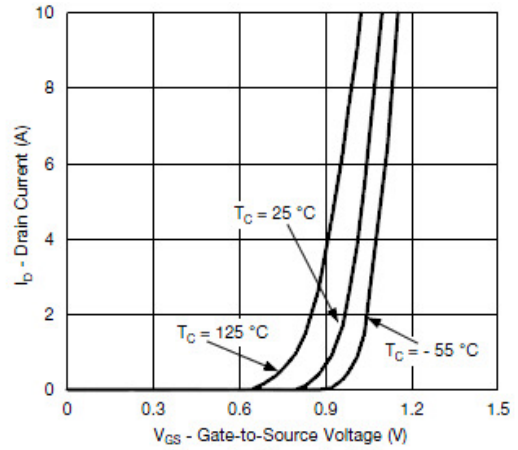
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250uA	20			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	0.4		1.2	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±10	uA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =16V, V _{GS} =0V			10	uA
		V _{DS} =16V, V _{GS} =0V T _J =85°C			50	
On-State Drain Current	I _{D(on)}	V _{DS} ≥ 5V, V _{GS} =4.5V	12			A
		V _{DS} ≥ 5V, V _{GS} =2.5V	8			
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =3.0A		9.3	11	mΩ
		V _{GS} =2.5V, I _D =3.0A		10.8	13	
		V _{GS} =1.8V, I _D =2.5A		16.2	24	
Forward Transconductance	g _{FS}	V _{DS} =10V, I _D =12.4A		70		S
Diode Forward Voltage	V _{SD}	I _S =3.0A, V _{GS} =0V		0.85	1.3	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} =10V, V _{GS} =4.5V I _D ≡11A		15	25	nC
Gate-Source Charge	Q _{gs}			3		
Gate-Drain Charge	Q _{gd}			4		
Input Capacitance	C _{iss}	V _{DS} =10V, V _{GS} =0V f=1MHz		1400		pF
Output Capacitance	C _{oss}			200		
Reverse Transfer Capacitance	C _{rss}			80		
Turn-On Time	t _{d(on)}	V _{DD} =10V, R _L =1.0Ω I _D ≡10A, V _{GEN} =4.5V R _G =1Ω		10	20	ns
	t _r			15	30	
Turn-Off Time	t _{d(off)}			35	70	
	t _f			10	20	



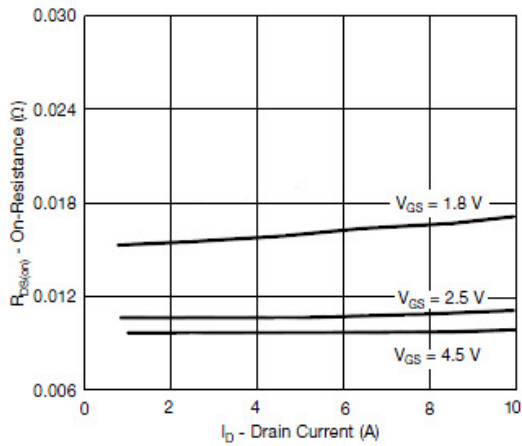
Typical Characteristics



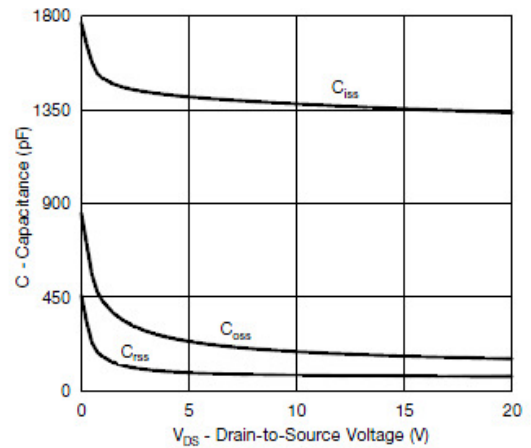
Output Characteristics



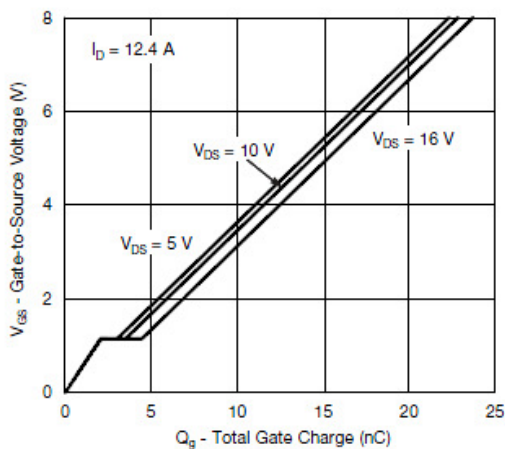
Transfer Characteristics



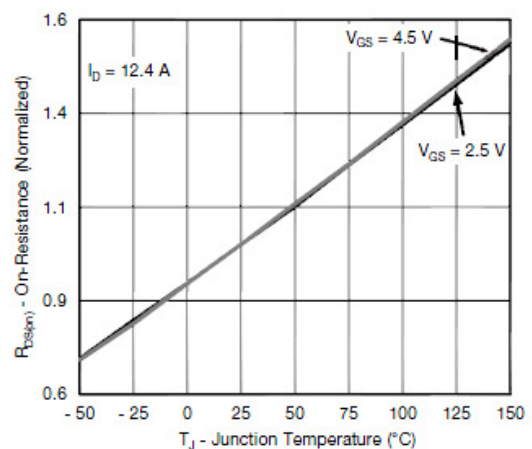
On-Resistance vs. Drain Current and Gate Voltage



Capacitance



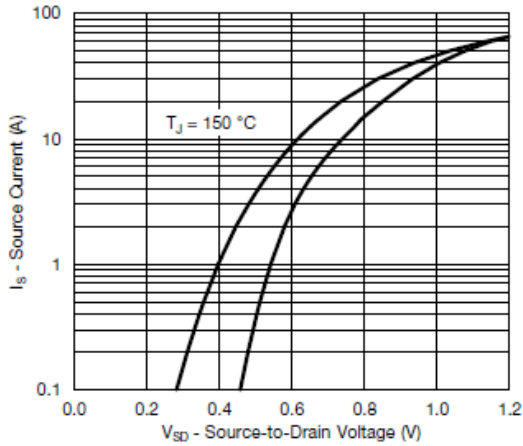
Gate Charge



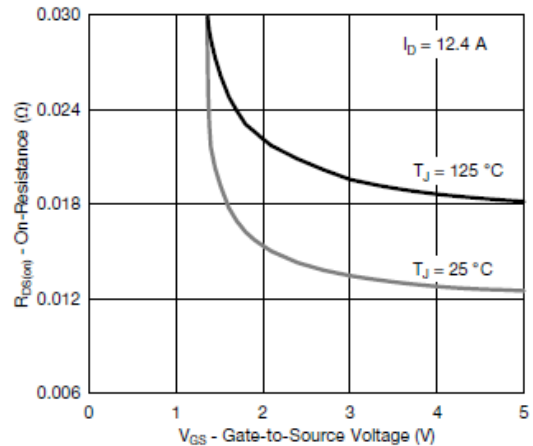
On-Resistance vs. Junction Temperature



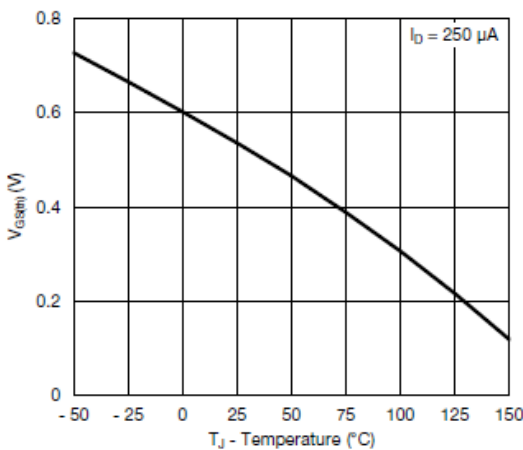
Typical Characteristics



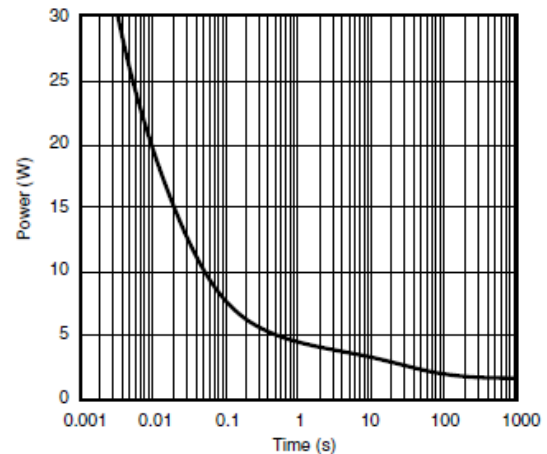
Source-Drain Diode Forward Voltage



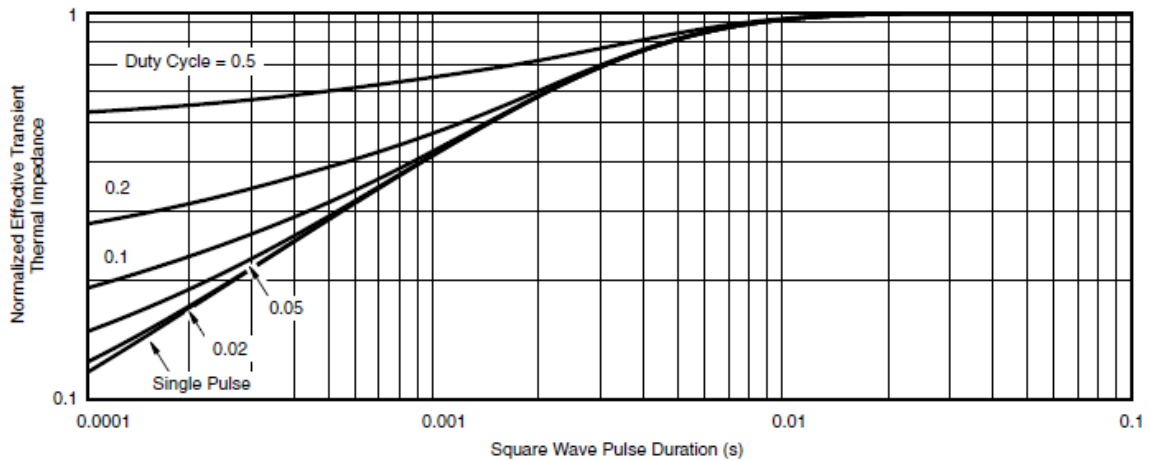
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



Single Pulse Power, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Case



Typical Characteristics

Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

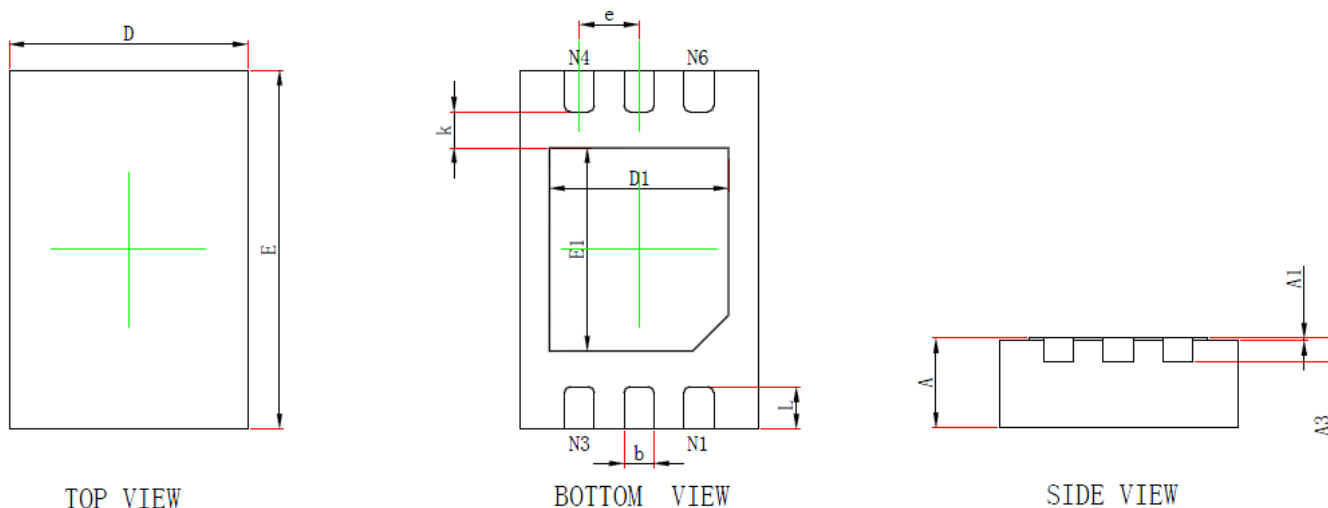


Unclamped Inductive Switching Test Circuit & Waveforms





Package Information (DFN2X3-6L)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.950	2.050	0.077	0.081
E	2.950	3.050	0.116	0.120
D1	1.450	1.550	0.057	0.061
E1	1.650	1.750	0.065	0.069
k	0.200MIN.		0.008MIN.	
b	0.200	0.300	0.008	0.012
e	0.500TYP.		0.020TYP.	
L	0.300	0.400	0.012	0.016

©2010 Alfa-MOS Technology Corp.
 2F, No.80, Sec.1, Cheng Kung Rd., Nan Kang Dist., Taipei City 115, Taiwan (R.O.C.)
 Tel : 886 2) 2651 3928
 Fax : 886 2) 2786 8483
 ©http://www.alfa-mos.com