



General Description

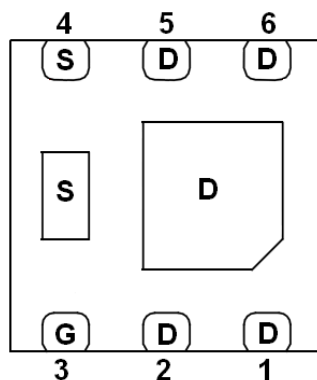
AFN2262WS, N-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

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

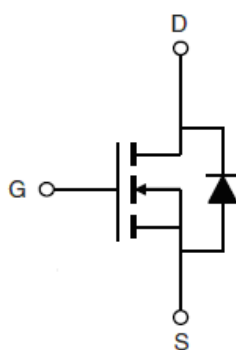
Features

- 60V/8A, $R_{DS(ON)}=20m\Omega@V_{GS}=10V$
- 60V/6A, $R_{DS(ON)}=30m\Omega@V_{GS}=4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- DFN2X2-6L package design

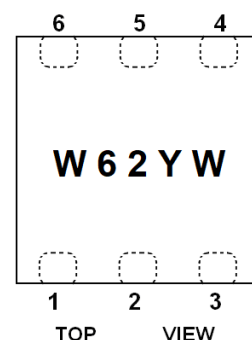
Pin Description (DFN2X2-6L)



BOTTOM VIEW



N-Channel MOSFET



TOP VIEW

Application

- DC/DC Converter
- High Frequency Switching

Pin Define

Pin	Symbol	Description
1,2,5,6	D	Drain
4	S	Source
3	G	Gate

Ordering Information

Part Ordering No.	Part Marking	Package	Unit	Quantity
AFN2262WSFN226RG	W62YW	DFN2X2-6L	Tape & Reel	4000 EA

※ W62 part code

※ Y year code

※ W week code

※ AFN2262WSFN226RG : 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}	60	V
Gate –Source Voltage	V _{GSS}	±20	V
Continuous Drain Current(T _J =150°C)	I _D	8	A
		6	
Pulsed Drain Current	I _{DM}	40	A
Continuous Source Current(Diode Conduction)	I _S	3	A
Power Dissipation	P _D	3.5	W
		2.2	
Operating Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{STG}	-55/150	°C
Thermal Resistance-Junction to Ambient	R _{θJA}	36	°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	60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	1.0		2.5	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =48V, V _{GS} =0V			1	uA
		V _{DS} =48V, V _{GS} =0V T _J =85°C			10	
On-State Drain Current	I _{D(on)}	V _{DS} ≥ 5V, V _{GS} =10V	6			A
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =8A		17	20	mΩ
		V _{GS} =4.5V, I _D =6A		24	30	
Forward Transconductance	g _{FS}	V _{DS} =6V, I _D =8 A		22		S
Diode Forward Voltage	V _{SD}	I _S =2A, V _{GS} =0V		0.8	1.3	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} =48V, V _{GS} =10V I _D ≅8A		1	5	nC
Gate-Source Charge	Q _{gs}			2		
Gate-Drain Charge	Q _{gd}			1		
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V f=1MHz		465		pF
Output Capacitance	C _{oss}			250		
Reverse Transfer Capacitance	C _{rss}			10		
Turn-On Time	t _{d(on)}	V _{DD} =48V, R _L =5Ω I _D ≅8A, V _{GEN} =10V R _G =6Ω		8	15	ns
	t _r			5	10	
Turn-Off Time	t _{d(off)}			15	30	
	t _f			5	10	



Typical Characteristics

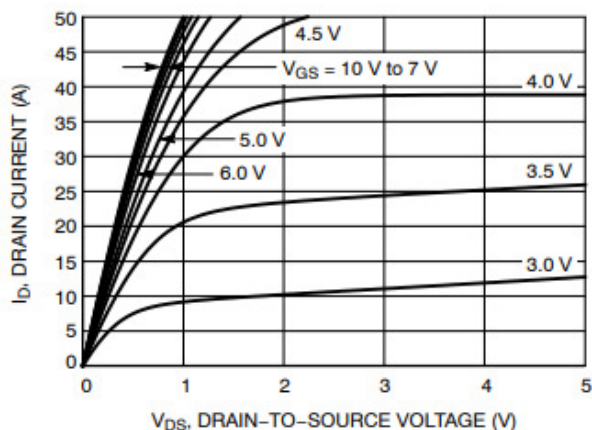


Figure 1. On-Region Characteristics

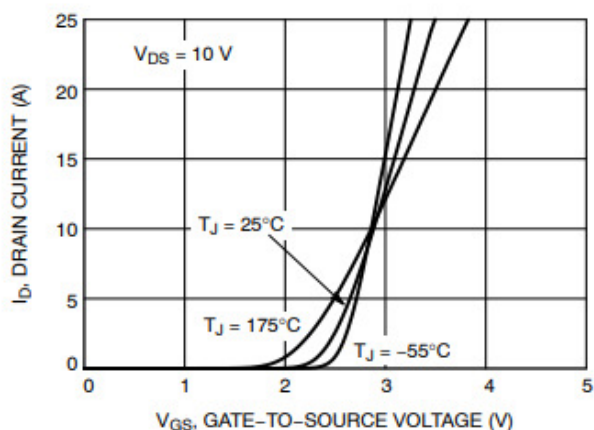


Figure 2. Transfer Characteristics

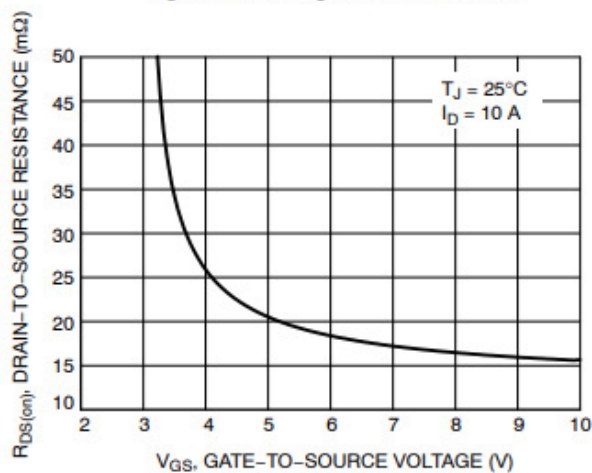


Figure 3. On-Resistance vs. Gate-to-Source Voltage

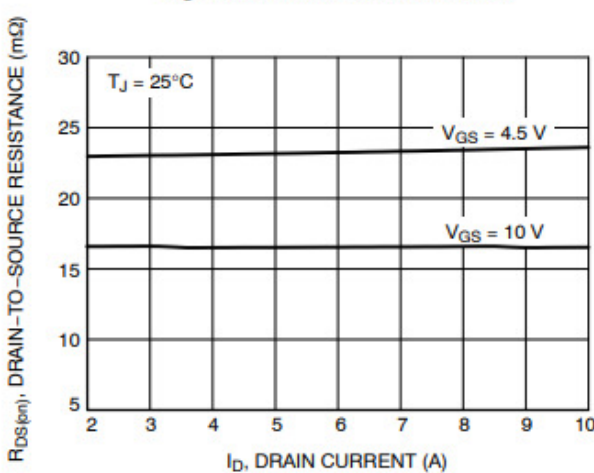


Figure 4. On-Resistance vs. Drain Current and Gate Voltage

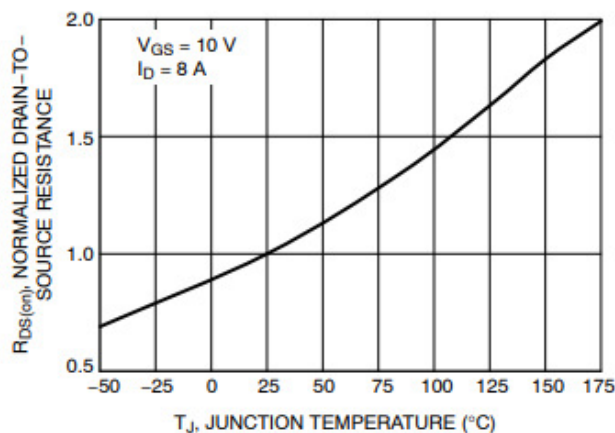


Figure 5. On-Resistance Variation with Temperature

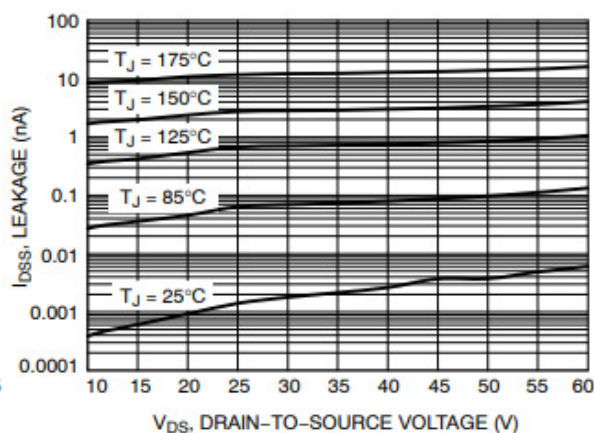


Figure 6. Drain-to-Source Leakage Current vs. Voltage



Typical Characteristics

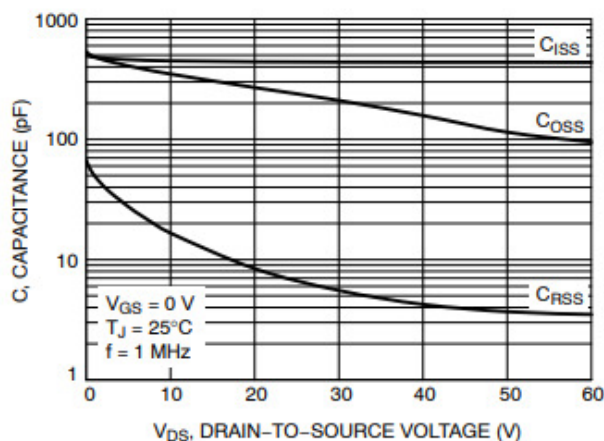


Figure 7. Capacitance Variation

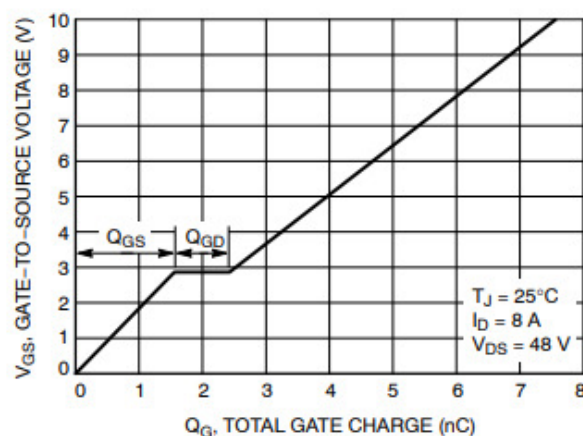


Figure 8. Gate-to-Source Voltage vs. Total Charge

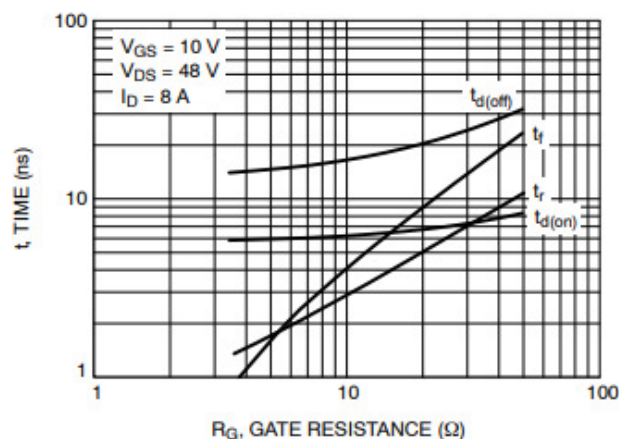


Figure 9. Resistive Switching Time Variation vs. Gate Resistance

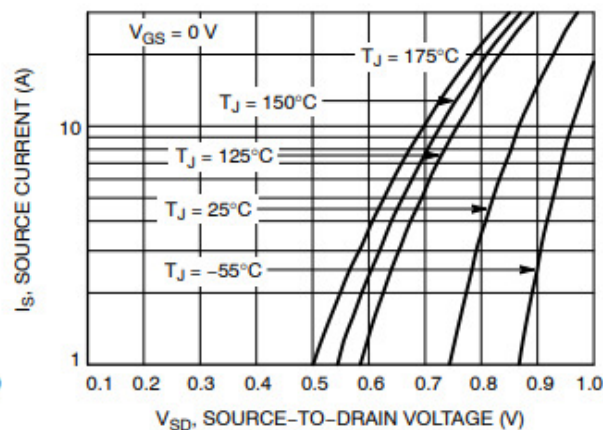


Figure 10. Diode Forward Voltage vs. Current

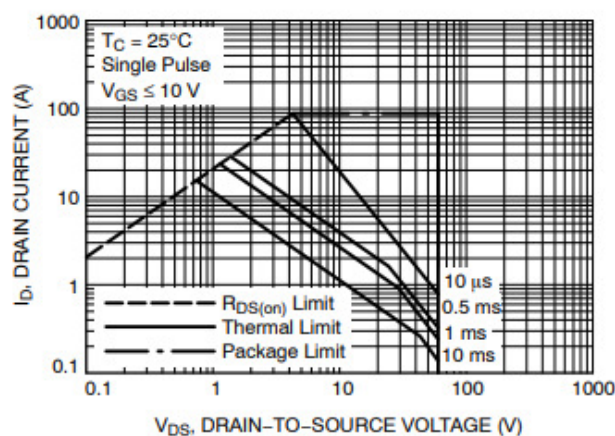


Figure 11. Maximum Rated Forward Biased Safe Operating Area

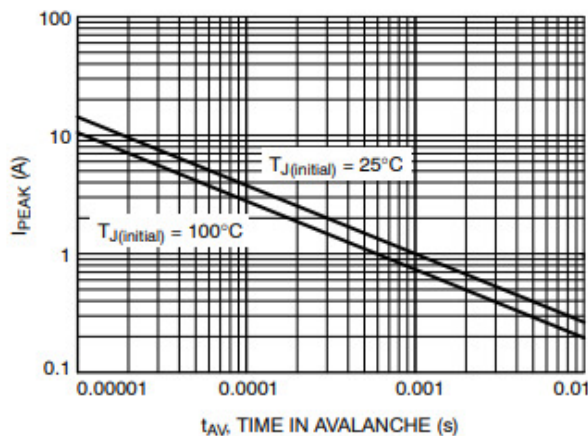
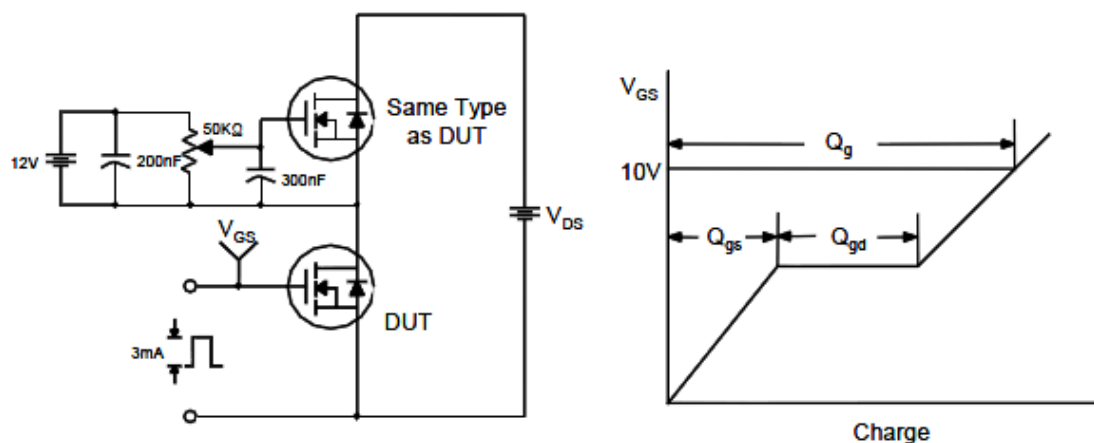


Figure 12. Maximum Drain Current vs. Time in Avalanche

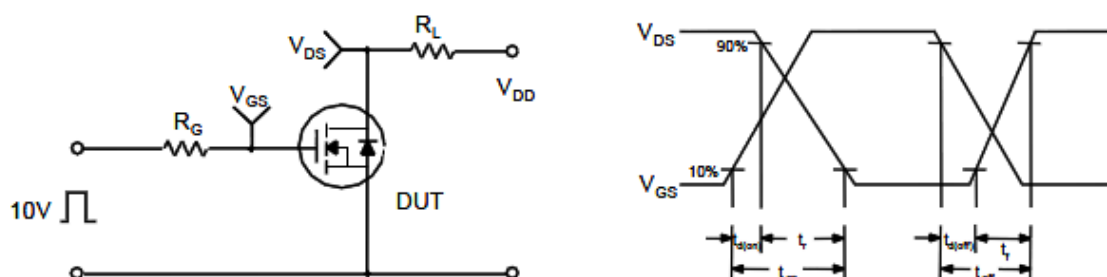


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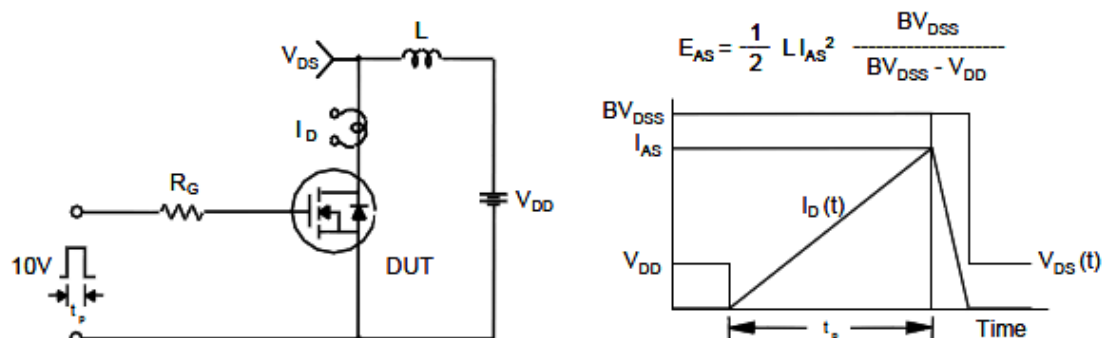
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

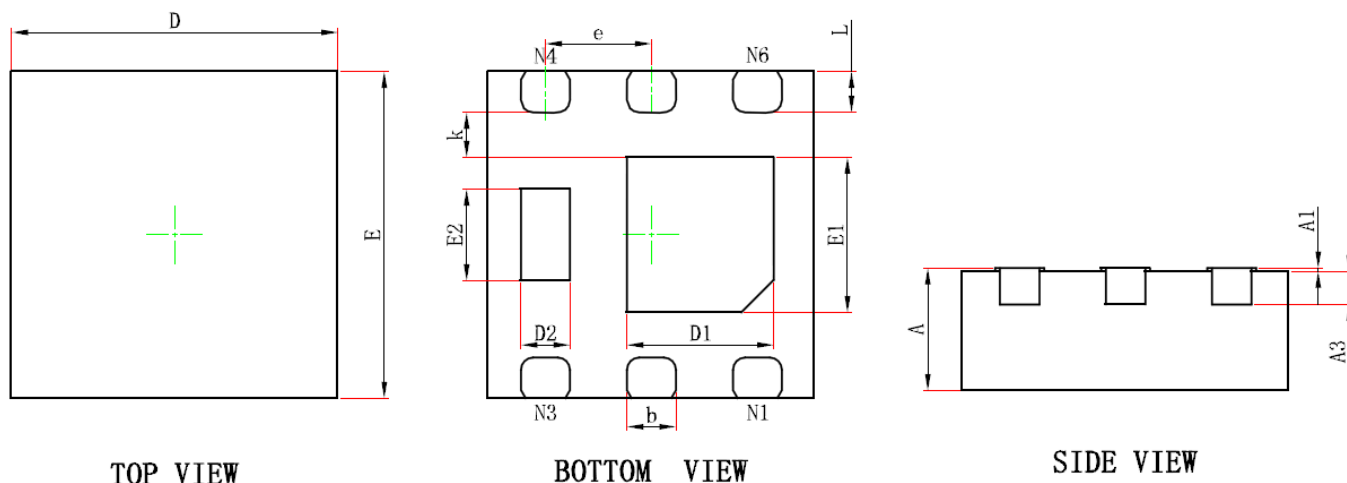


Unclamped Inductive Switching Test Circuit & Waveforms





Package Information (DFN2X2-6L)



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	1.924	2.076	0.076	0.082
E	1.924	2.076	0.076	0.082
D1	0.800	1.000	0.031	0.039
E1	0.850	1.050	0.033	0.041
D2	0.200	0.400	0.008	0.016
E2	0.460	0.660	0.018	0.026
k	0.200MIN.		0.008MIN.	
b	0.250	0.350	0.010	0.014
e	0.650TYP.		0.026TYP.	
L	0.174	0.326	0.007	0.013

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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
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