



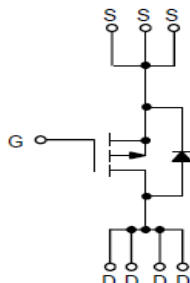
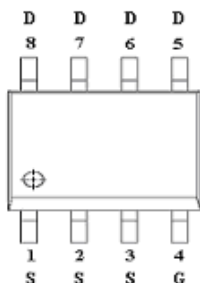
General Description

AFP4425WS, 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, and low in-line power loss are needed in commercial industrial surface mount applications.

Features

- -30V/-13A, $R_{DS(ON)}=12m\Omega@V_{GS}=-10V$
- -30V/-10A, $R_{DS(ON)}=16.5m\Omega@V_{GS}=-4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- SOP-8P package design

Pin Description (SOP-8P)



Application

- LED Display
- Load Switch
- CCFL Inverter
- Power Management in Notebook Computer,

Pin Define

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

Ordering Information

Part Ordering No.	Part Marking	Package	Unit	Quantity
AFP4425WSS8RG	4425WS	SOP-8P	Tape & Reel	2500 EA

- ※ A Lot code
- ※ B Date code
- ※ AFP4425WSS8RG : 13" 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 -13	A
		T _A =70°C -10	
Pulsed Drain Current	I _{DM}	-50	A
Continuous Source Current(Diode Conduction)	I _S	-2	A
Single Pulse Avalanche Current	I _{AS}	-20	A
Avalanche Energy	E _{AS}	20	mJ
Power Dissipation	P _D	T _A =25°C 2.8	W
		T _A =70°C 1.8	
Operating Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{STG}	-55/150	°C
Thermal Resistance-Junction to Ambient	R _{θJA}	62.5	°C/W
Thermal Resistance-Junction to Case	R _{θJC}	19	°C/W

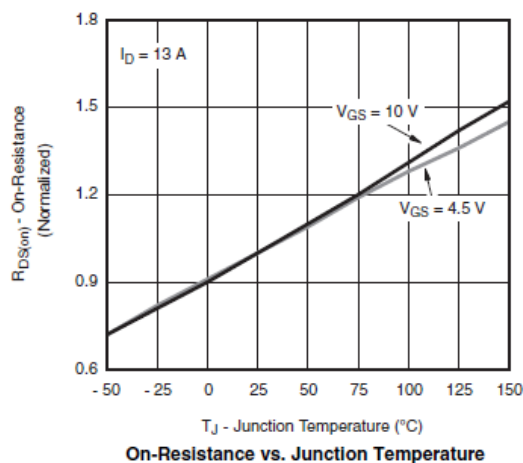
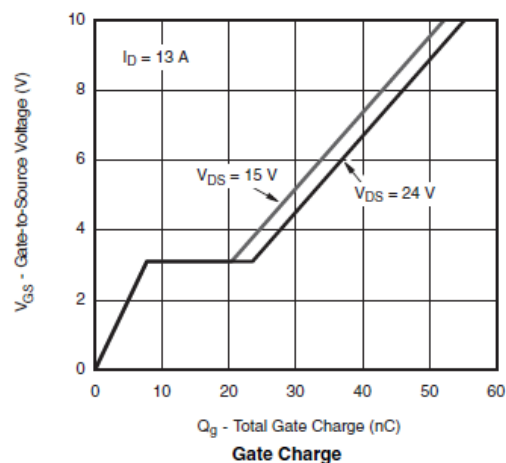
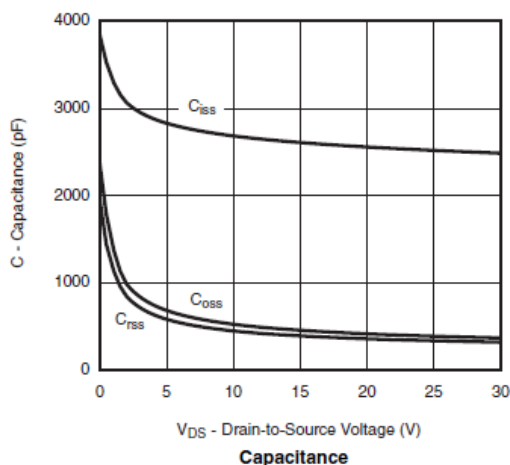
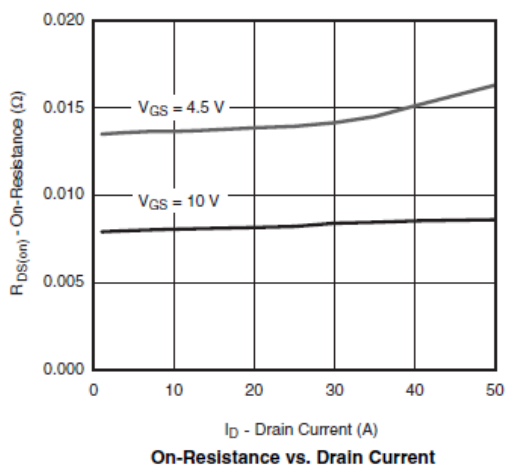
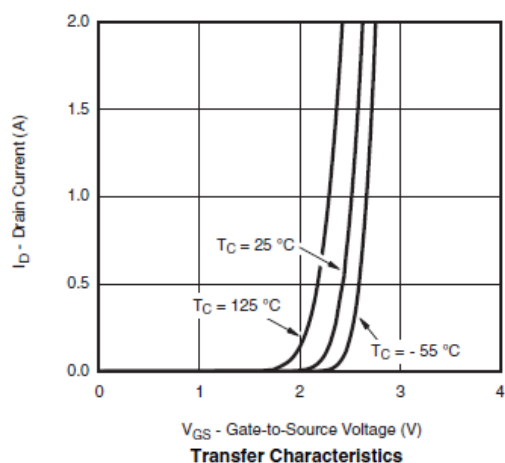
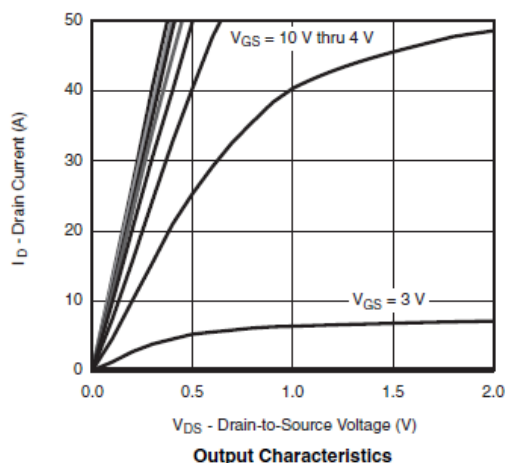
Electrical Characteristics

(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	-1.6	-2.0	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±25V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-24V, V _{GS} =0V			-1	uA
		V _{DS} =-24V, V _{GS} =0V T _J =85°C			-30	
On-State Drain Current	I _{D(on)}	V _{DS} ≤ -10V, V _{GS} =-10V	-30			A
		V _{DS} ≤ -5V, V _{GS} =-4.5V	-5			
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-13A		10	12	mΩ
		V _{GS} =-4.5V, I _D =-10A		14	16.5	
Forward Transconductance	g _{FS}	V _{DS} =-15V, I _D =-13A		40		S
Diode Forward Voltage	V _{SD}	I _S =-1.0A, V _{GS} =0V		-0.7	-1.3	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} =-15V, V _{GS} =-4.5V I _D =-10A		26	55	nC
Gate-Source Charge	Q _{gs}			8		
Gate-Drain Charge	Q _{gd}			12		
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V f=1MHz		2600		pF
Output Capacitance	C _{oss}			450		
Reverse Transfer Capacitance	C _{rss}			400		
Turn-On Time	t _{d(on)}	V _{DD} =-15V, R _L =1.5Ω I _D =-10A, V _{GEN} =-10V R _G =1Ω		12	20	ns
	t _r			10	25	
Turn-Off Time	t _{d(off)}			40	80	
	t _f			10	20	

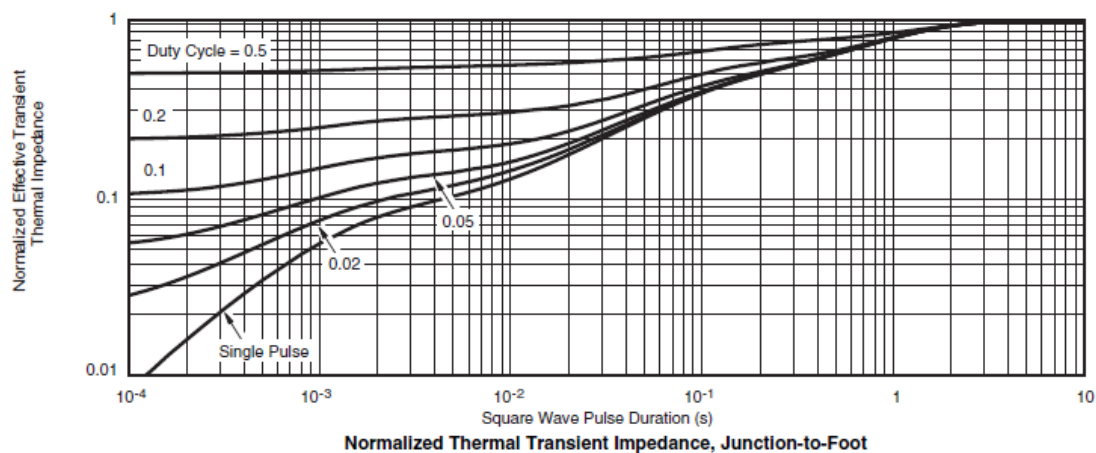
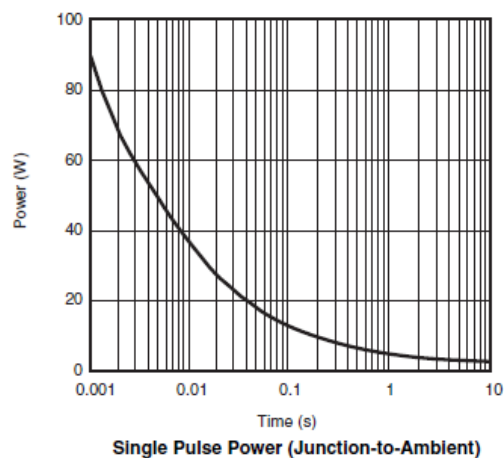
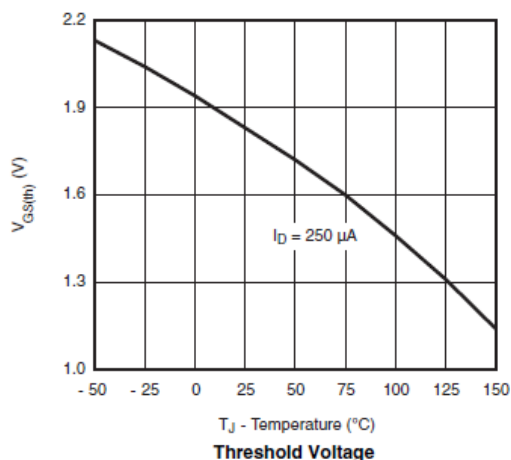
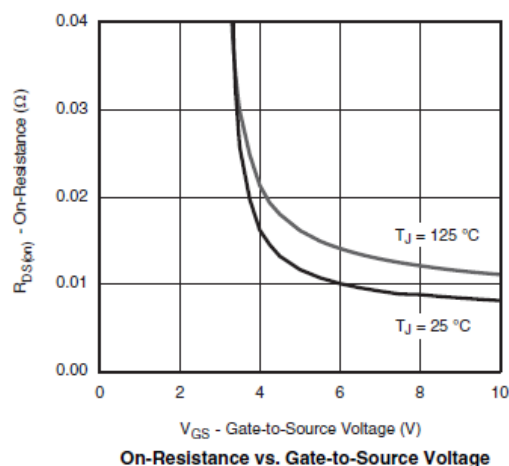
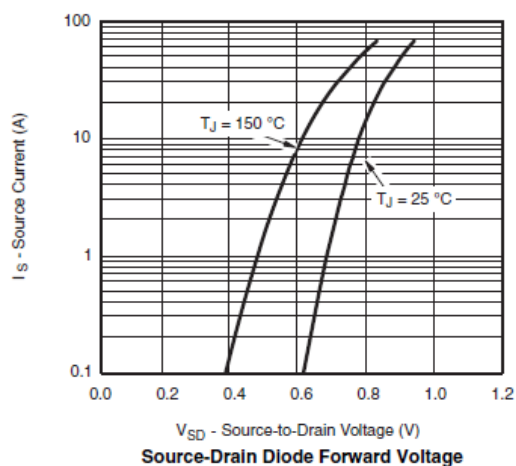


Typical Characteristics





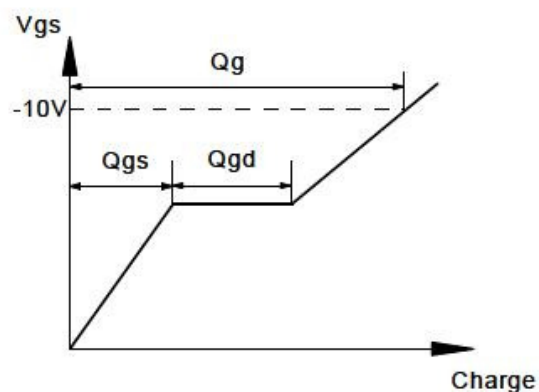
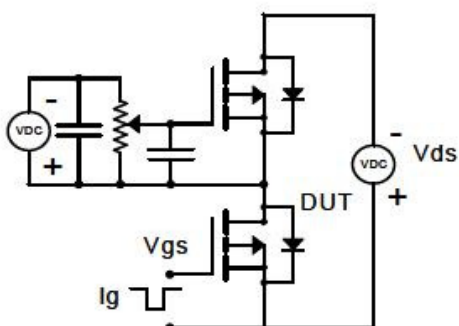
Typical Characteristics



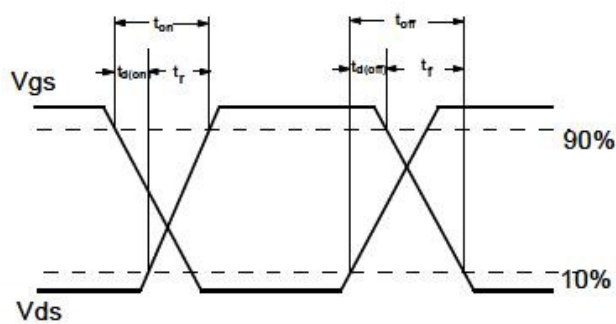
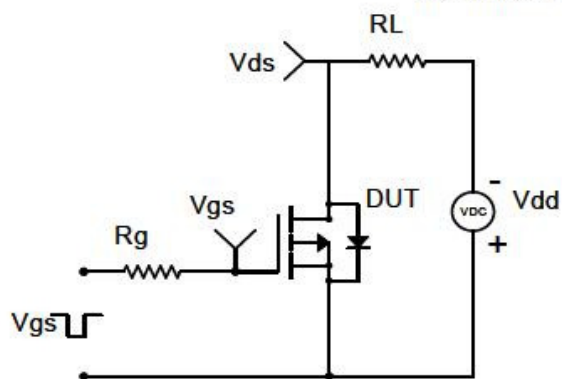


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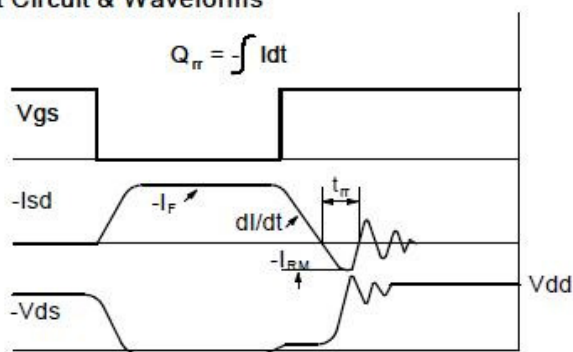
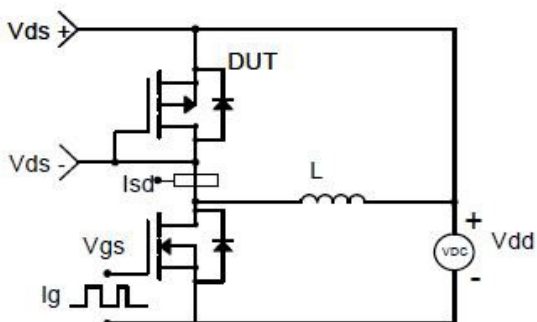
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

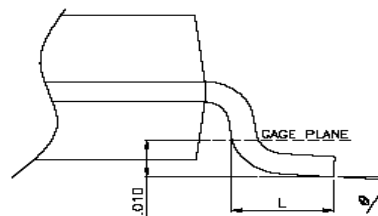
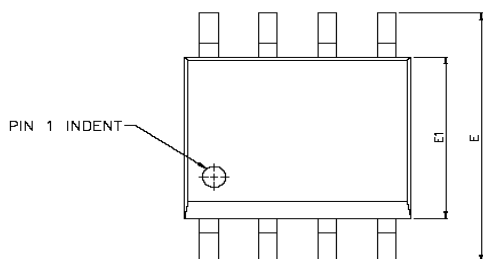


Diode Recovery Test Circuit & Waveforms

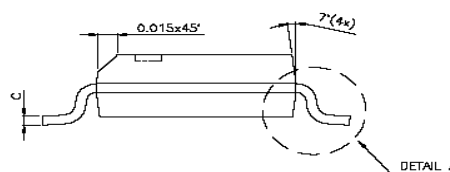
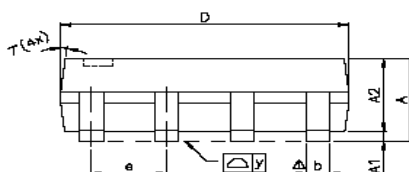




Package Information (SOP-8P)



DETAIL A



SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.47	1.60	1.73	0.058	0.063	0.068
A1	0.10	—	0.25	0.004	—	0.010
A2	—	1.45	—	—	0.057	—
b	0.33	0.41	0.51	0.013	0.016	0.020
C	0.19	0.20	0.25	0.0075	0.008	0.0098
D	4.80	4.85	4.95	0.189	0.191	0.195
E	5.80	6.00	6.20	0.228	0.236	0.244
E1	3.80	3.90	4.00	0.150	0.154	0.157
e	—	1.27	—	—	0.050	—
L	0.38	0.71	1.27	0.015	0.028	0.050
Δy	—	—	0.076	—	—	0.003
θ	0°	—	8°	0°	—	8°

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