



### General Description

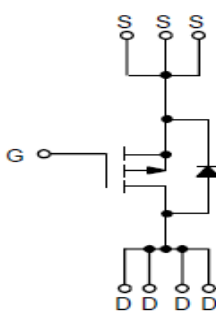
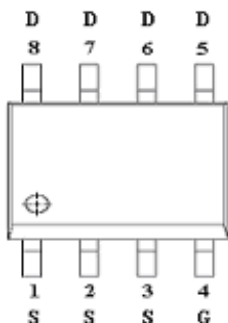
AFP9435WS, P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent  $R_{DS(ON)}$ , low gate charge.

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/-5.3A,  $R_{DS(ON)}=58m\Omega@V_{GS}=-10V$
- -30V/-4.2A,  $R_{DS(ON)}=78m\Omega@V_{GS}=-4.5V$
- 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
AFP9435WSS8RG	9435WS	SOP-8P	Tape & Reel	2500 EA

- ※ A Lot code
- ※ B Date code
- ※ AFP9435WSS8RG : 13" Tape & Reel ; Pb- Free ; Halogen- Free



### Absolute Maximum Ratings

( $T_A=25^{\circ}\text{C}$  Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Drain-Source Voltage	$V_{DSS}$	-30	V
Gate -Source Voltage	$V_{GSS}$	$\pm 20$	V
Continuous Drain Current( $T_J=150^{\circ}\text{C}$ )	$I_D$	$T_A=25^{\circ}\text{C}$	-6.0
		$T_A=70^{\circ}\text{C}$	-4.6
Pulsed Drain Current	$I_{DM}$	-20	A
Continuous Source Current(Diode Conduction)	$I_S$	-2	A
Power Dissipation	$P_D$	$T_A=25^{\circ}\text{C}$	2.8
		$T_A=70^{\circ}\text{C}$	1.8
Operating Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-55/150	$^{\circ}\text{C}$
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	62.5	$^{\circ}\text{C/W}$

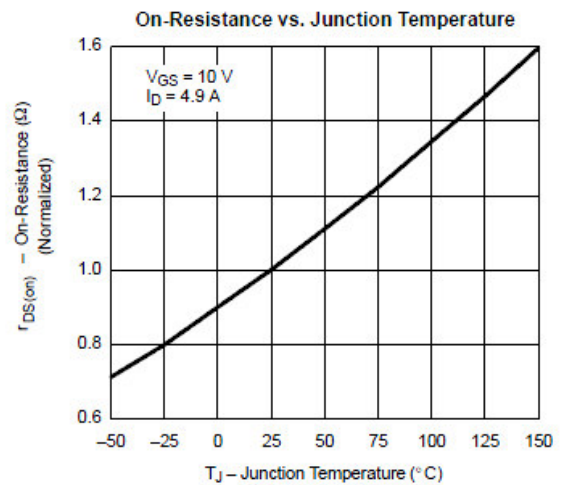
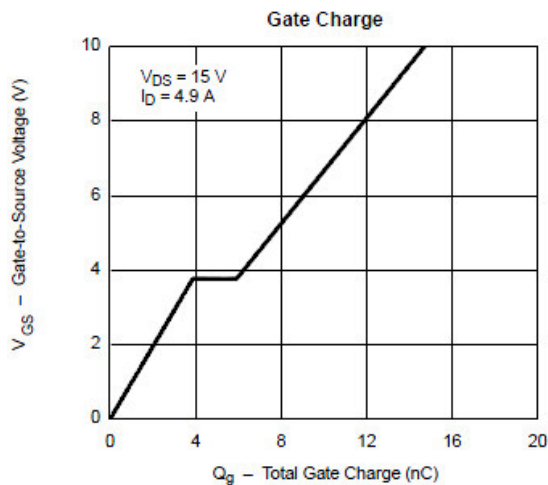
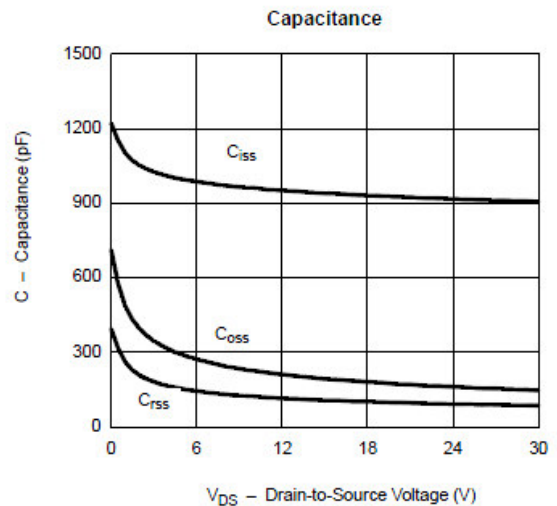
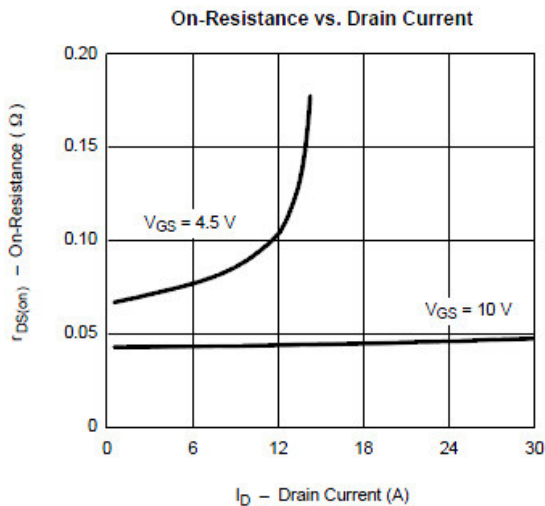
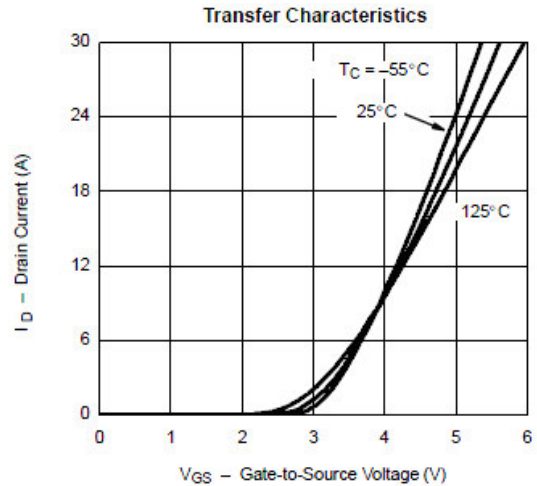
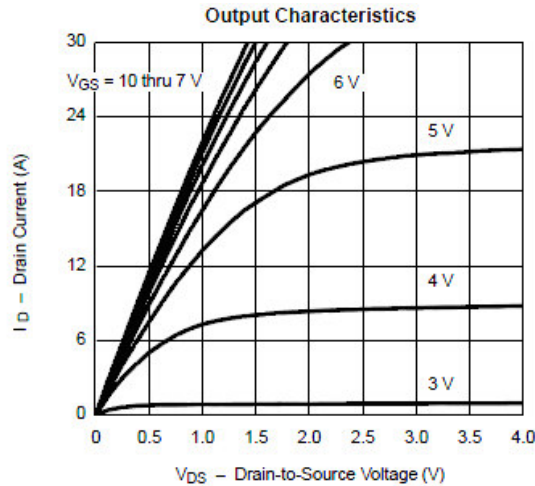
### Electrical Characteristics

( $T_A=25^{\circ}\text{C}$  Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0		-2.5	V
Gate Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 25V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-24V, V_{GS}=0V$			-1	uA
		$V_{DS}=-24V, V_{GS}=0V$ $T_J=85^{\circ}\text{C}$			-30	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \leq -10V, V_{GS}=-10V$	-20			A
		$V_{DS} \leq -5V, V_{GS}=-4.5V$	-5			
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-5.3A$		42	58	m $\Omega$
		$V_{GS}=-4.5V, I_D=-4.2A$		62	78	
Forward Transconductance	$g_{FS}$	$V_{DS}=-15V, I_D=-4.6A$		10		S
Diode Forward Voltage	$V_{SD}$	$I_S=-1.7A, V_{GS}=0V$		-0.7	-1.3	V
<b>Dynamic</b>						
Total Gate Charge	$Q_g$	$V_{DS}=-15V, V_{GS}=-10V$ $I_D \equiv -5.0A$		10	18	nC
Gate-Source Charge	$Q_{gs}$			1.6		
Gate-Drain Charge	$Q_{gd}$			3.0		
Input Capacitance	$C_{iss}$	$V_{DS}=-15V, V_{GS}=0V$ $f=1\text{MHz}$		500		pF
Output Capacitance	$C_{oss}$			100		
Reverse Transfer Capacitance	$C_{rss}$			55		
Turn-On Time	$t_{d(on)}$	$V_{DD}=-15V, R_L=15\Omega$ $I_D \equiv -1.0A, V_{GEN}=10V$ $R_G=6\Omega$		8	18	ns
	$t_r$			8	18	
Turn-Off Time	$t_{d(off)}$			25	50	
	$t_f$			25	35	

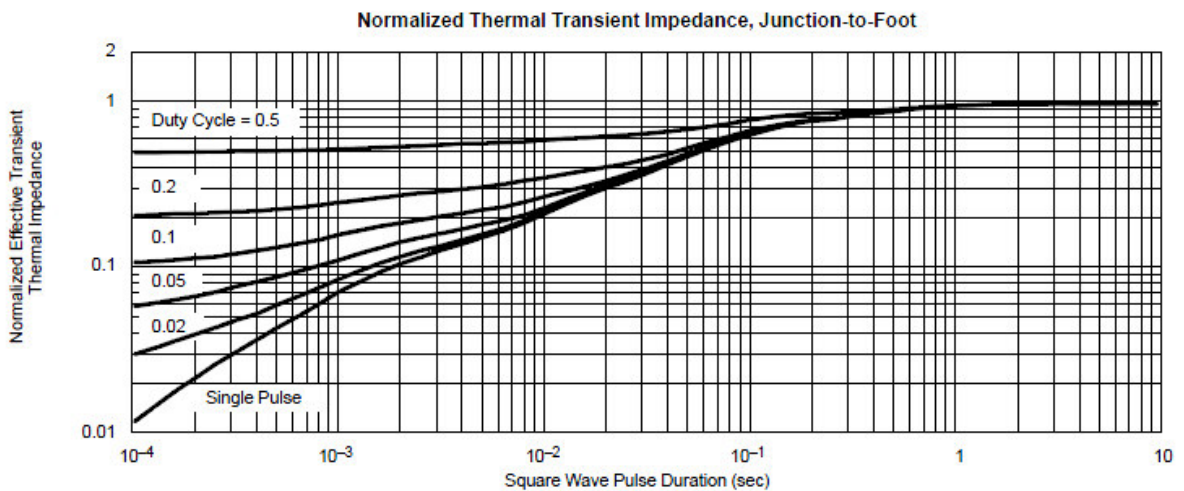
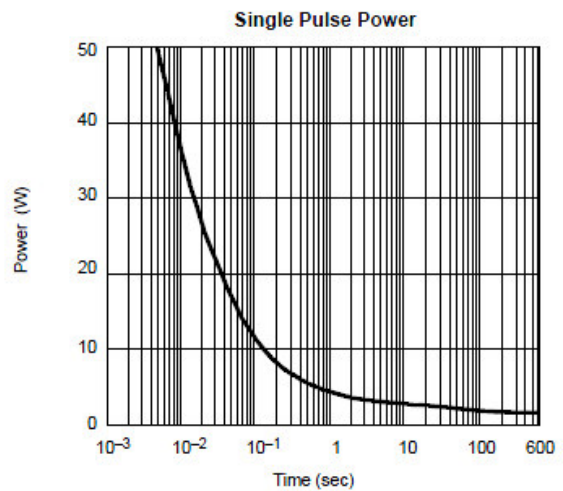
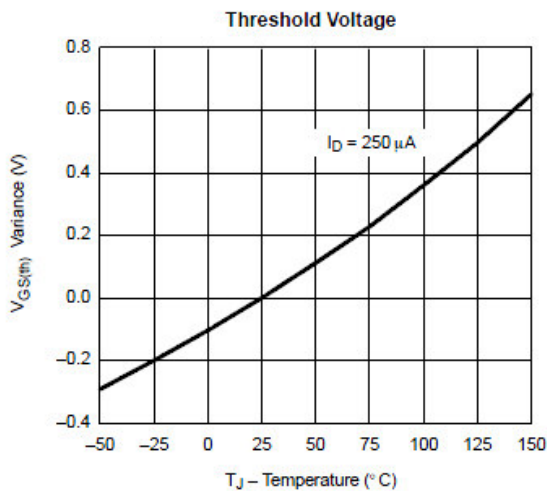
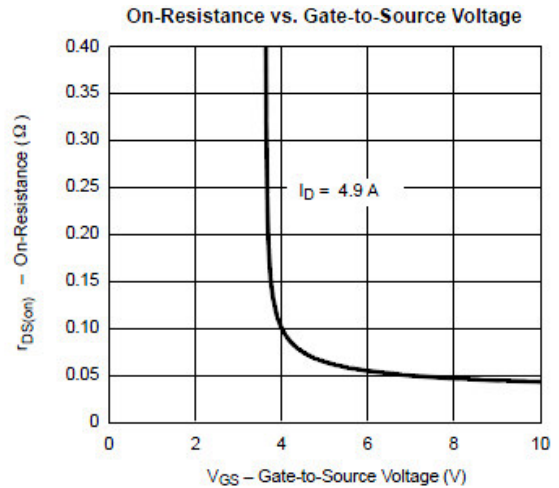
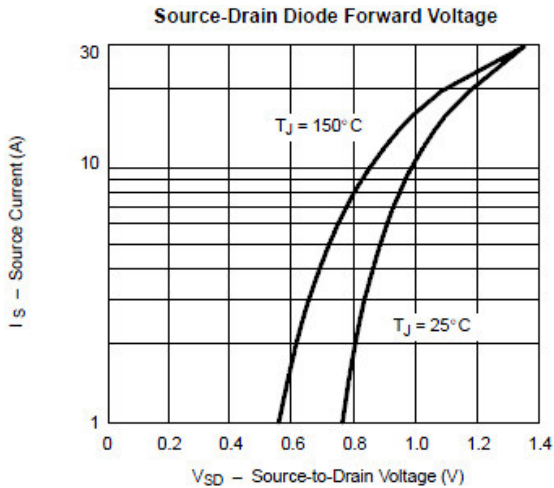


## Typical Characteristics





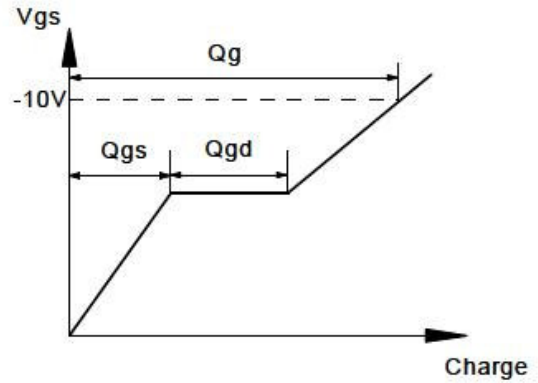
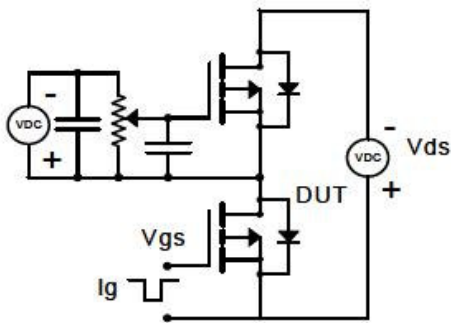
## Typical Characteristics



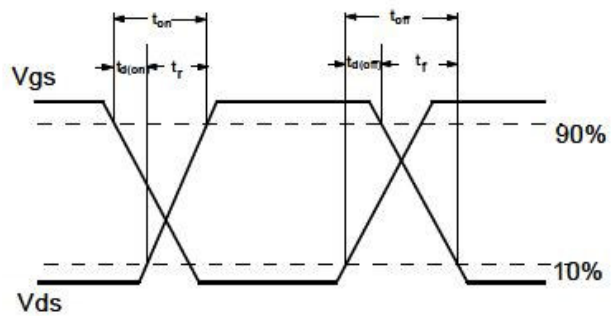
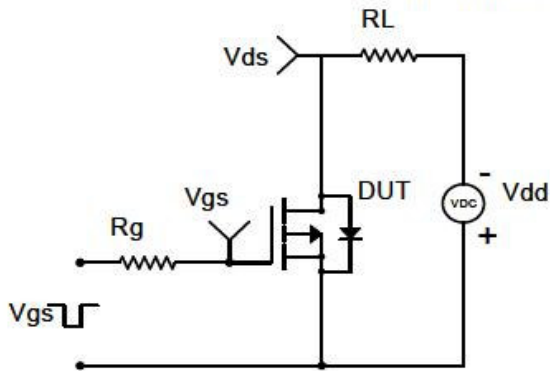


**Typical Characteristics**

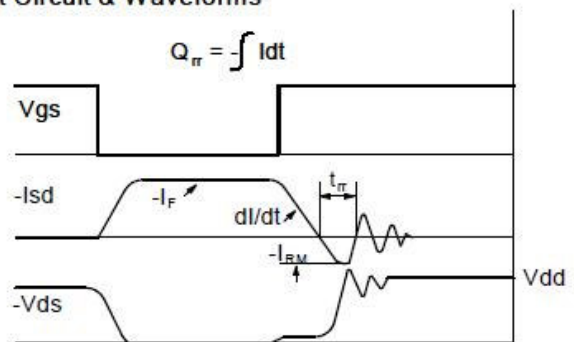
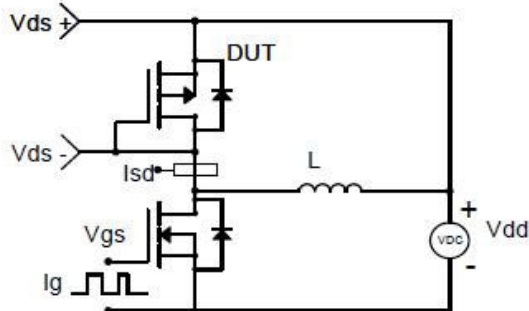
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

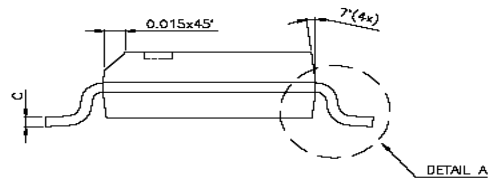
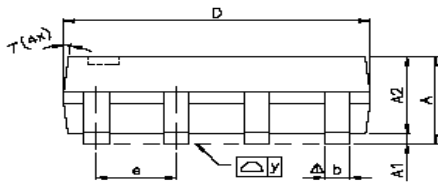
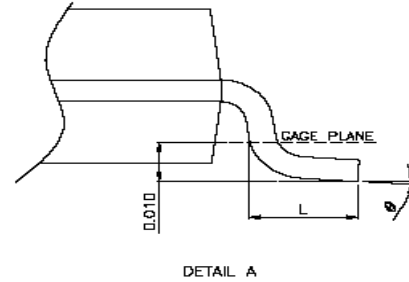
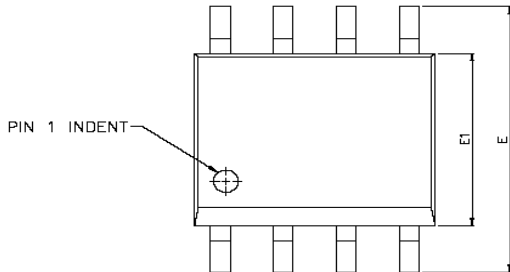


Diode Recovery Test Circuit & Waveforms





**Package Information (SOP-8P )**



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
$\Delta$ y	—	—	0.076	—	—	0.003
$\theta$	0°	—	8°	0°	—	8°

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