



General Description

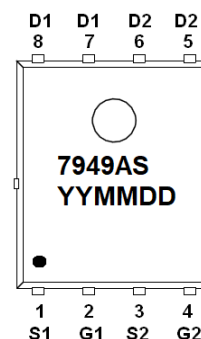
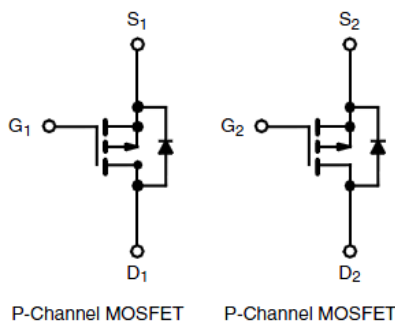
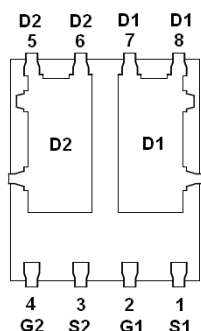
AFP7949AS, Dual P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

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

- $I_D = -5.0A, R_{DS(ON)} = 62m\Omega @ V_{GS} = -10V$
- $I_D = -4.5A, R_{DS(ON)} = 72m\Omega @ V_{GS} = -4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- DFN 5X6-8L package design

Pin Description (DFN5X6-8L)



Application

- Motor and Load Control
- Backlight Inverter for LCD Display
- Full Bridge DC/DC Converter

Pin Define

Pin	Symbol	Description
1	S1	Source 1
2	G1	Gate 1
3	S2	Source 2
4	G2	Gate 2
5	D2	Drain 2
6	D2	Drain 2
7	D1	Drain 1
8	D1	Drain 1

Ordering Information

Part Ordering No.	Part Marking	Package	Unit	Quantity
AFP7949ASFN568RG	7949AS	DFN 5X6-8L	Tape & Reel	2500 EA

※ 7949AS : Parts Code

※ YYMMDD : Date Code

※ AFP7949ASFN568RG : 13" Tape & Reel ; Pb- Free ; Halogen -Free



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	-60	V
Gate –Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current($T_J=150^{\circ}\text{C}$)	I_D	$T_A=25^{\circ}\text{C}$	-5.0
		$T_A=85^{\circ}\text{C}$	-4.0
Pulsed Drain Current	I_{DM}	-25	A
Continuous Source Current(Diode Conduction)	I_S	-2.9	A
Power Dissipation	P_D	$T_A=25^{\circ}\text{C}$	3.5
		$T_A=70^{\circ}\text{C}$	2.2
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	$^{\circ}\text{C/W}$

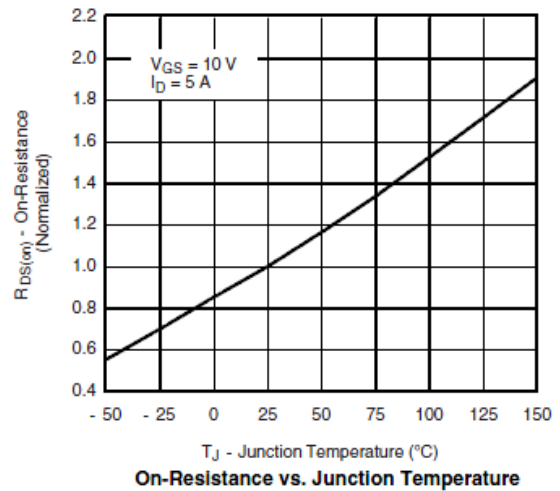
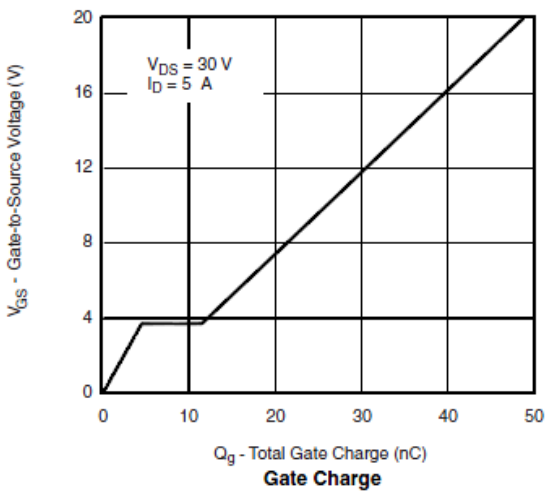
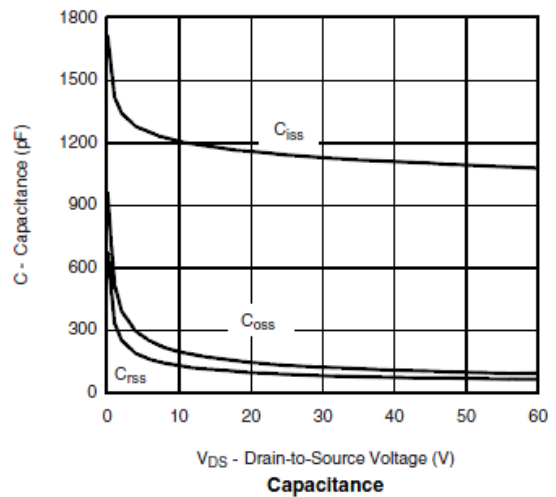
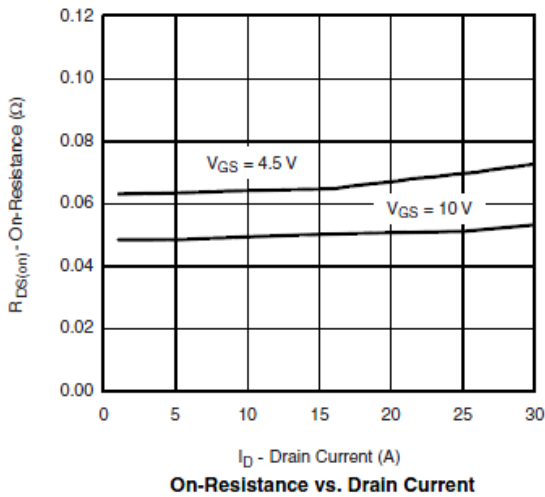
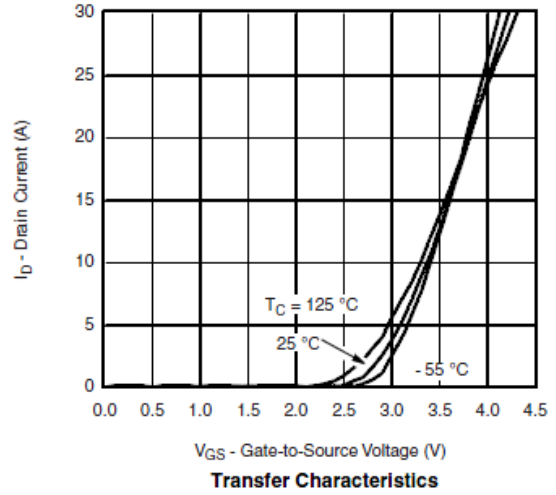
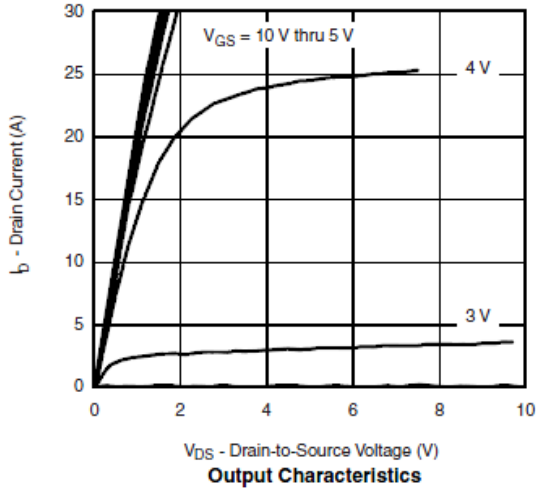
Electrical Characteristics

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

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D = -250\mu A$	-60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D = -250\mu A$	-1.0		-2.5	
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS} = \pm 16V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -48V, V_{GS}=0V$			-1	
		$V_{DS} = -48V, V_{GS}=0V$ $T_J=85^{\circ}\text{C}$			-20	μA
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq -5V, V_{GS} = -10V$	-205			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -5.0A$		53	62	$m\Omega$
		$V_{GS} = -4.5V, I_D = -4.5A$		64	72	
Forward Transconductance	g_{FS}	$V_{DS} = -15V, I_D = -5.0A$		16		S
Diode Forward Voltage	V_{SD}	$I_S = -3A, V_{GS}=0V$		-0.8	-1.3	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS} = -30V, V_{GS} = -10V$ $I_D = -5.0A$		25	40	nC
Gate-Source Charge	Q_{gs}			5		
Gate-Drain Charge	Q_{gd}			7		
Input Capacitance	C_{iss}	$V_{DS} = -25V, V_{GS} = 0V$ $f = 1\text{MHz}$		1200	2000	pF
Output Capacitance	C_{oss}			140		
Reverse Transfer Capacitance	C_{rss}			90		
Turn-On Time	$t_{d(on)}$	$V_{DD} = -30V, R_L = 3.0\Omega$ $I_D = -1A, V_{GEN} = -10V$ $R_G = 6\Omega$		10	20	ns
	t_r			10	20	
Turn-Off Time	$t_{d(off)}$			60	120	
	t_f			30	60	

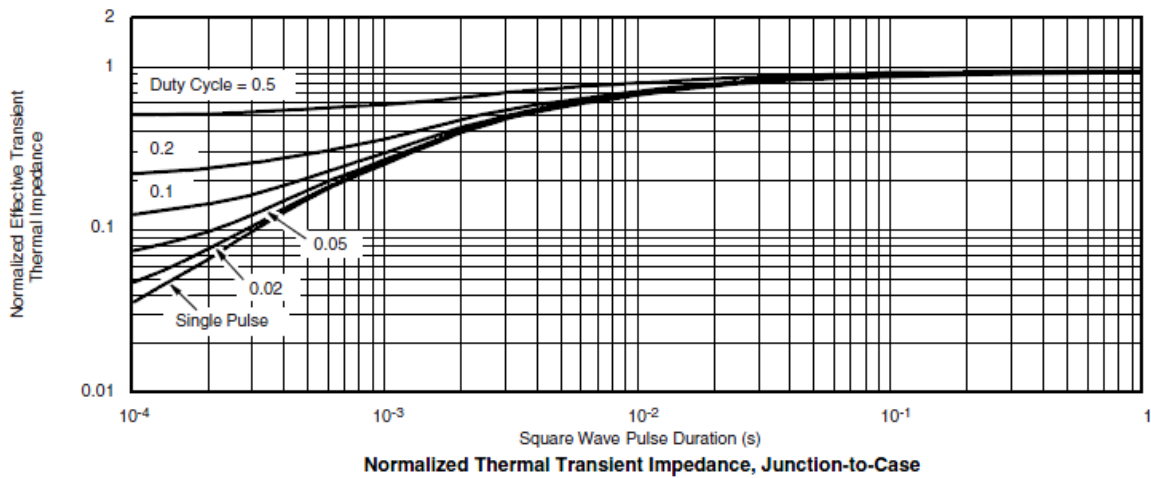
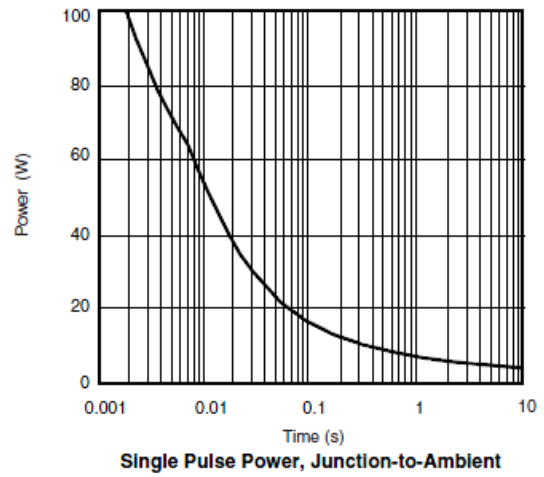
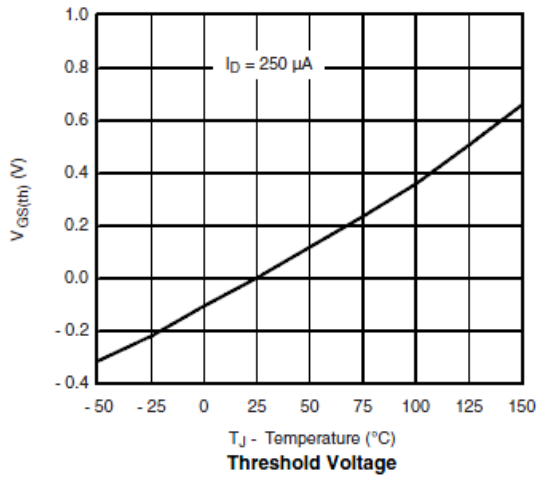
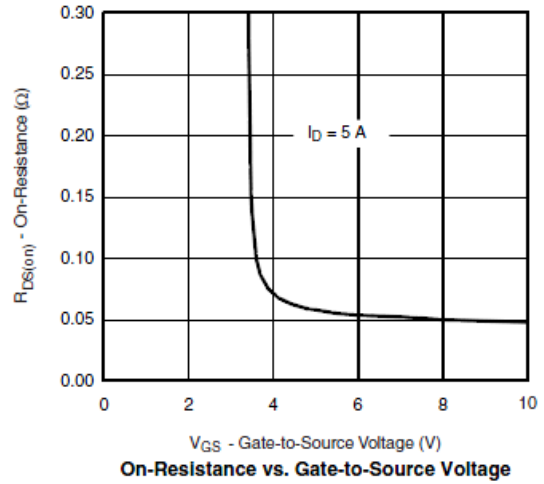
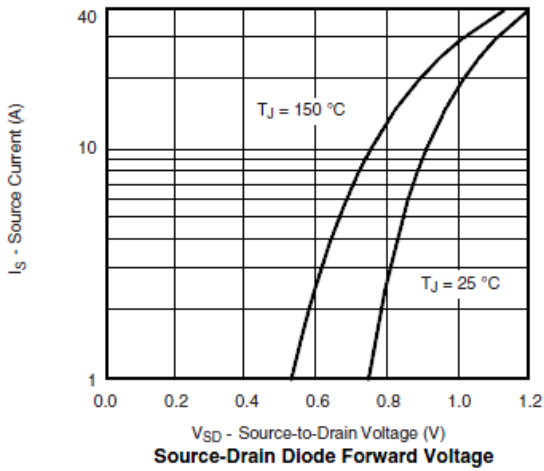


Typical Characteristics





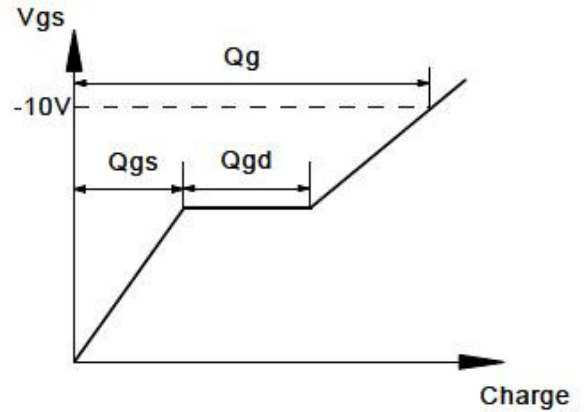
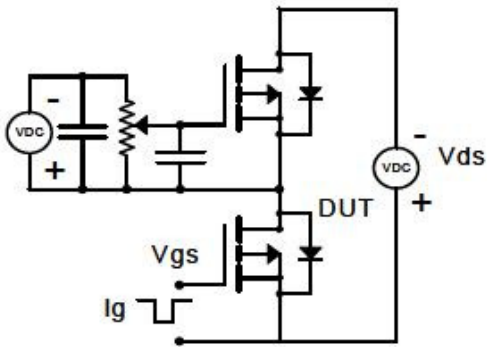
Typical Characteristics



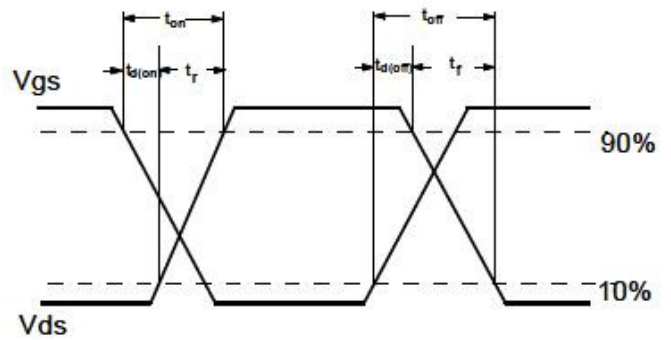
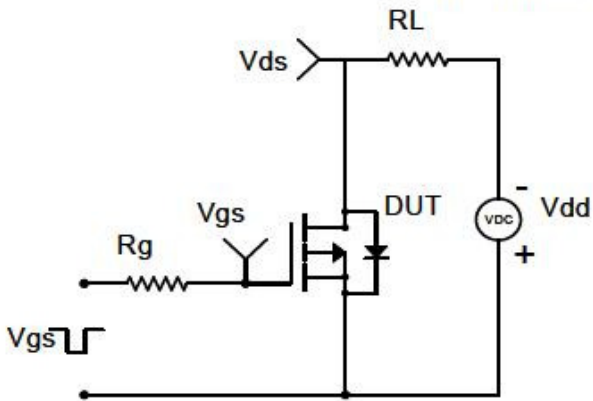


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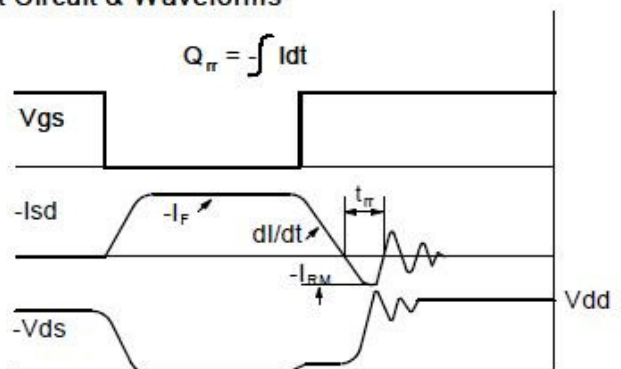
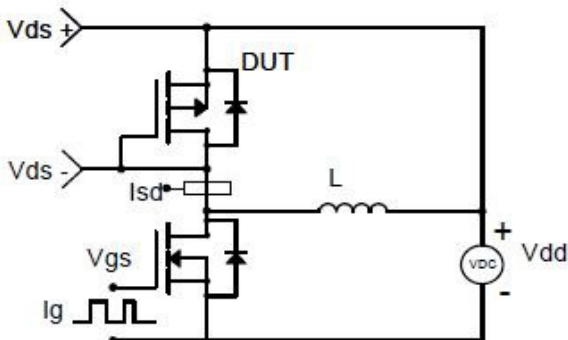
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

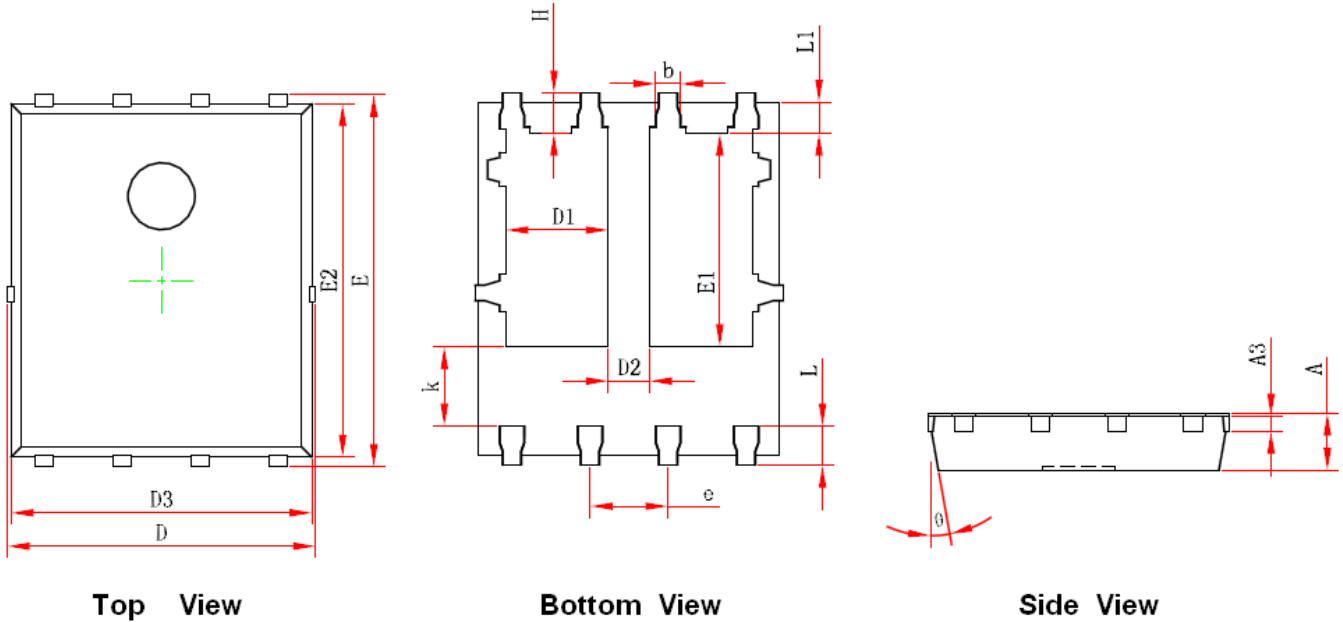


Diode Recovery Test Circuit & Waveforms





Package Information (DFN 5X6-8L)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254 REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	1.470	1.870	0.058	0.074
D2	0.470	0.870	0.019	0.034
E1	3.375	3.575	0.133	0.141
D3	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°

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