



General Description

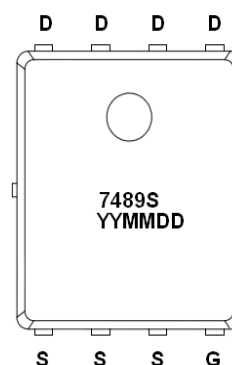
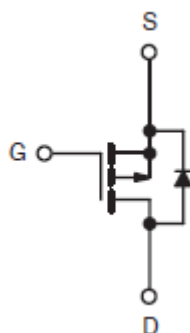
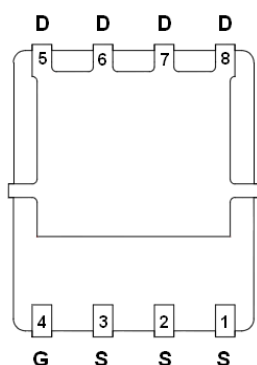
AFP7489S, P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

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

- -100/-7.8A, $R_{DS(ON)} = 42m\Omega @ V_{GS} = -10V$
- -100/-7.3A, $R_{DS(ON)} = 47m\Omega @ V_{GS} = -4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- DFN5X6-8L package design

Pin Description (DFN5X6-8L)



Application

- Load Switch
- Adaptor Switch
- Notebook PC

Pin Define

Pin	Symbol	Description
4	G	Gate
1~3	S	Source
5~8	D	Drain

Ordering Information

Part Ordering No.	Part Marking	Package	Unit	Quantity
AFP7489SFN568RG	7489S	DFN5X6-8L	Tape & Reel	2500 EA

※ 7489S : Parts Code

※ YYMMDD : Date code

※ AFP7489SFN568RG : 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}	-100	V
Gate –Source Voltage	V _{GSS}	±20	V
Continuous Drain Current(T _J =150°C)	I _{DSM}	-7.8	A
		-6.2	
Pulsed Drain Current	I _{DM}	-40	
Continuous Source Current(Diode Conduction)	I _S	-4.3	
Single Pulse Avalanche Current	I _{AS}	-35	
Power Dissipation	P _{DSM}	5.2	W
		3.3	
Operating Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{STG}	-55/150	°C
Thermal Resistance-Junction to Ambient	t ≤ 10 s	19	°C/W
Thermal Resistance-Junction to Case	Steady-State	1.2	

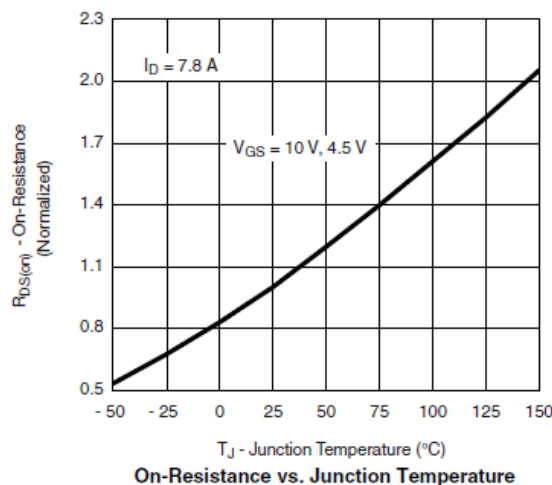
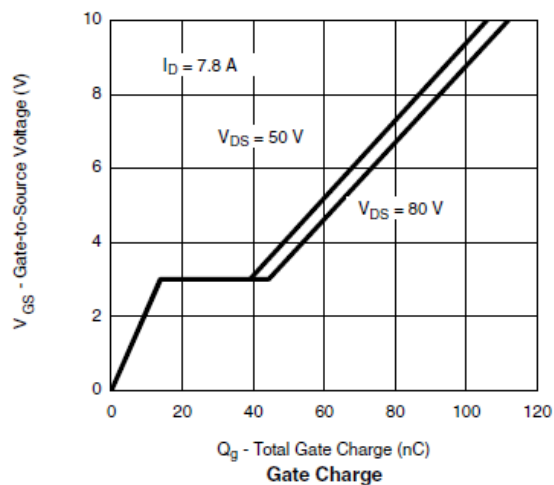
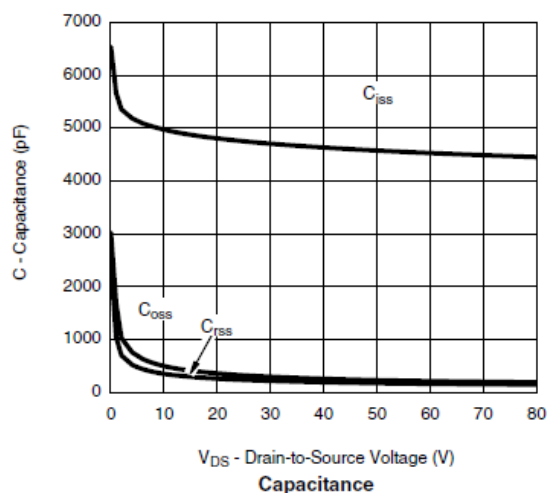
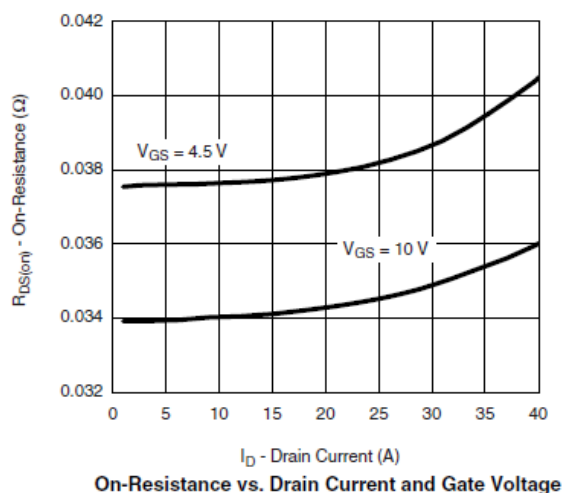
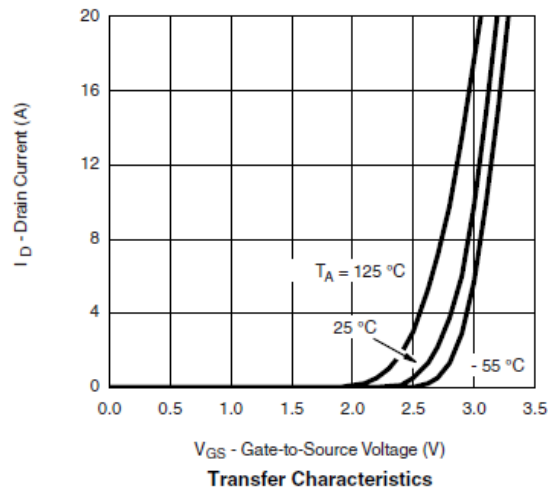
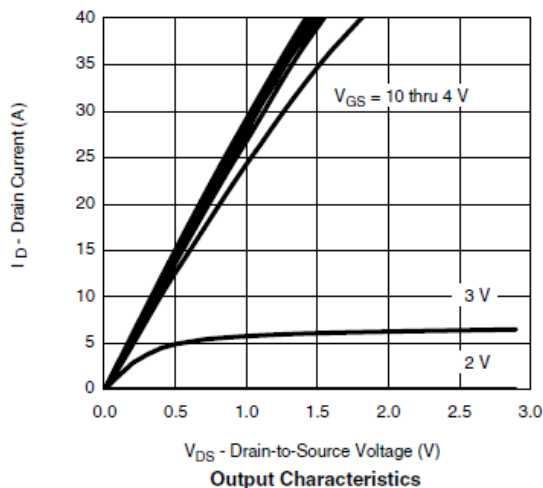
Electrical Characteristics

(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	-100			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} = -80V, V _{GS} =0V			-1	uA
		V _{DS} = -80V, V _{GS} =0V T _J =85°C			-30	
On-State Drain Current	I _{D(on)}	V _{DS} ≥ -5V, V _{GS} = -10V	-40			A
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -10V, I _D =-7.8A		38	42	mΩ
		V _{GS} = -4.5V, I _D =-7.3A		42	47	
Forward Transconductance	g _{FS}	V _{DS} = -15V, I _D = -7.8A		38		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} =-50V, V _{GS} =-4.5V I _D = -7.8A		55	100	nC
Gate-Source Charge	Q _{gs}			15		
Gate-Drain Charge	Q _{gd}			25		
Input Capacitance	C _{iss}	V _{DS} =-50V, V _{GS} =0V f=1MHz		4600		pF
Output Capacitance	C _{oss}			230		
Reverse Transfer Capacitance	C _{rss}			175		
Turn-On Time	t _{d(on)}	V _{DD} =-50V, R _L =8.1Ω I _D =-6.2A, V _{GEN} =-10V R _G =1Ω		15	30	ns
	t _r			20	40	
Turn-Off Time	t _{d(off)}			110	180	
	t _f			100	170	

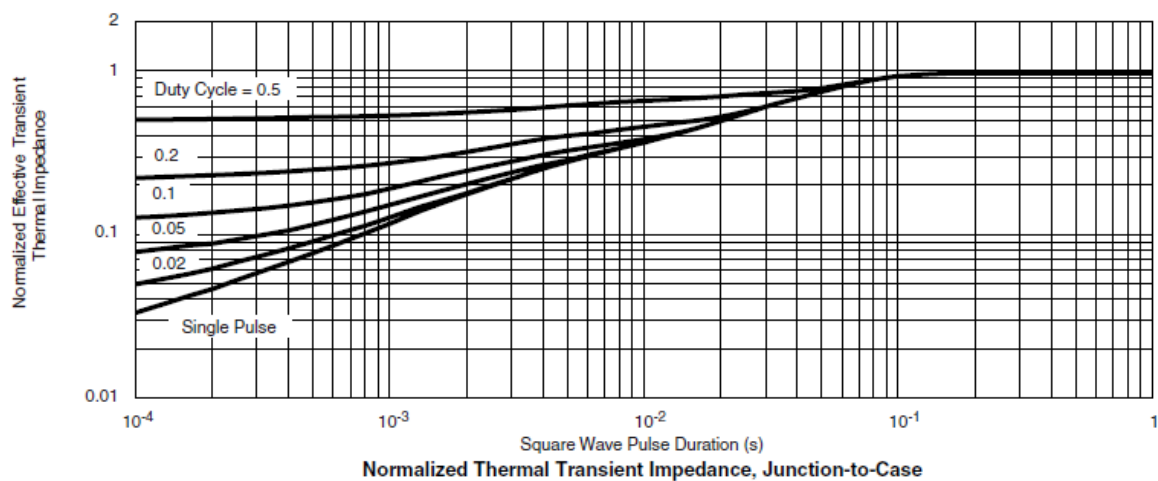
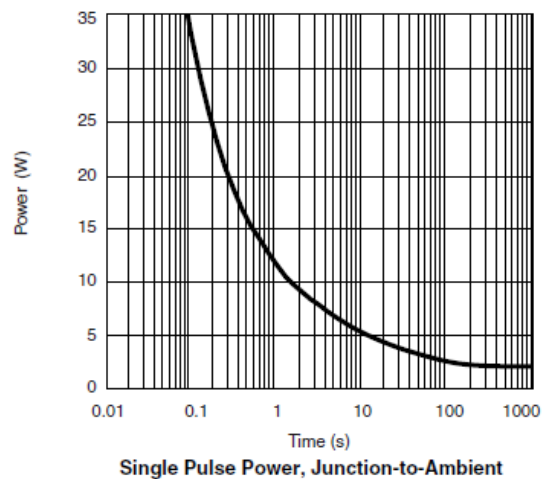
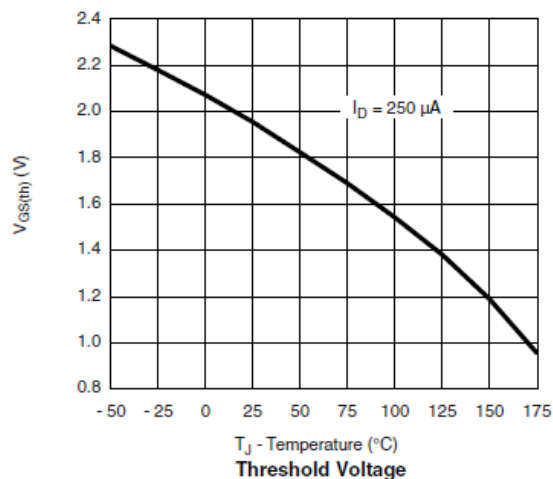
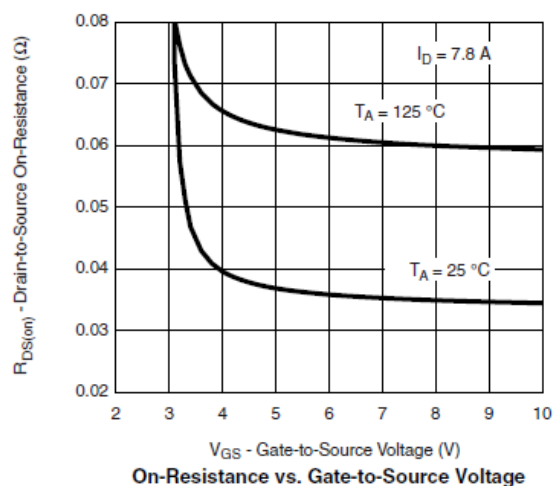
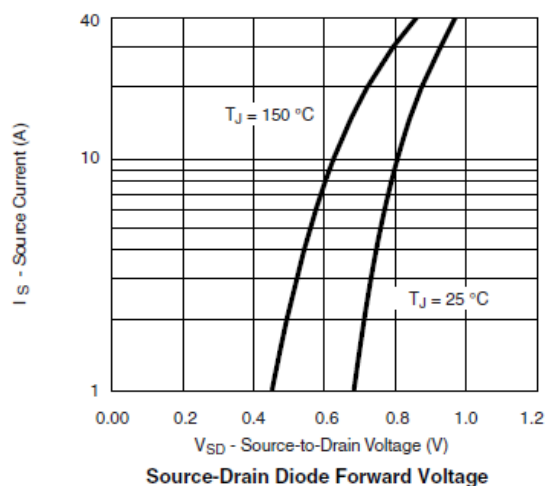


Typical Characteristics





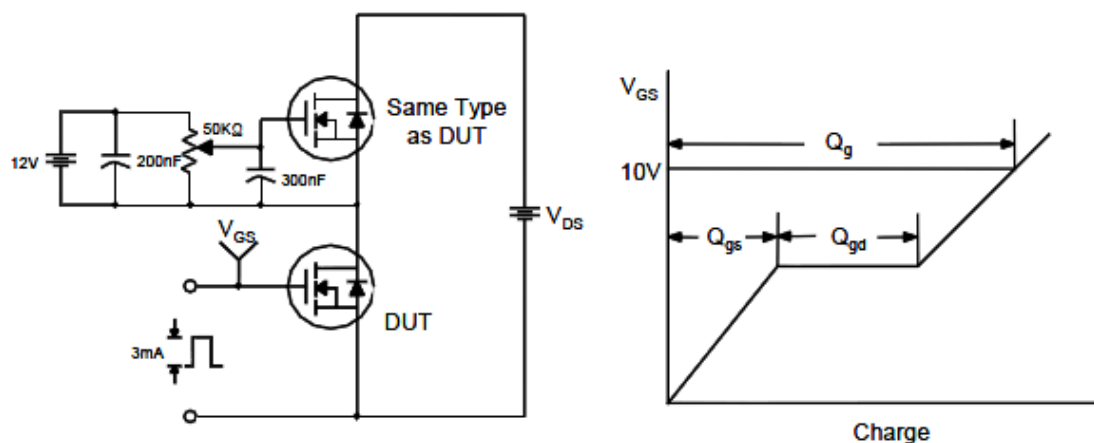
Typical Characteristics



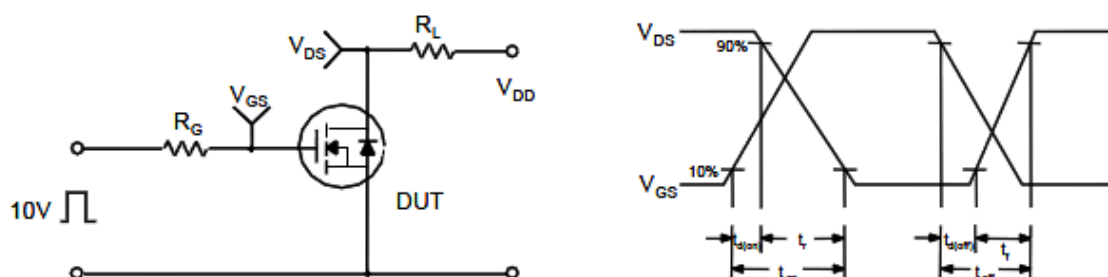


Typical Characteristics

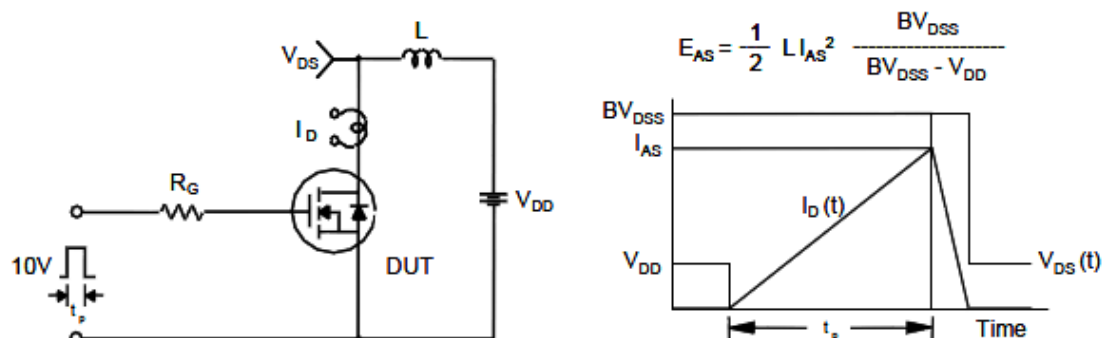
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

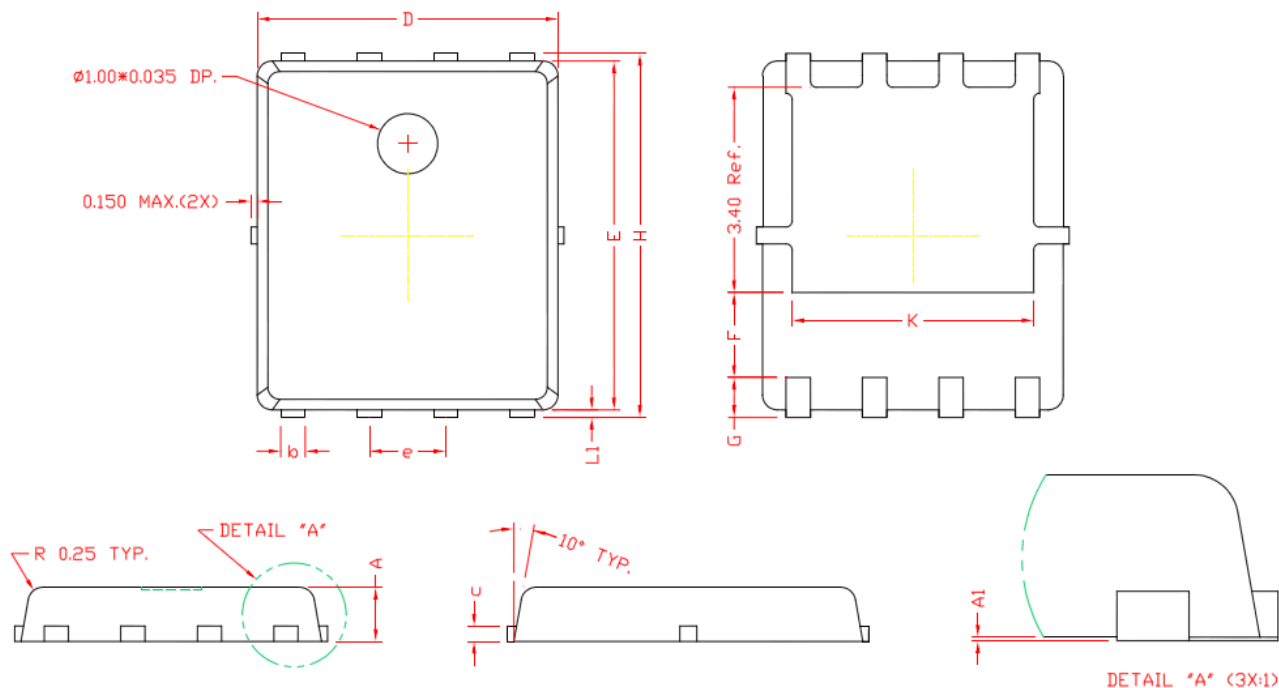


Unclamped Inductive Switching Test Circuit & Waveforms





Package Information (DFN5X6-8L)



DIMENSIONS

REF.	Millimeters		REF.	Millimeters	
	Min.	Max.		Min.	Max.
A	0.80	1.00	E	5.70	5.90
A1	0.00	0.05	e	1.27 BSC.	
b	0.35	0.49	H	5.95	6.20
c	0.254 Ref.		L1	0.10	0.18
D	4.90	5.10	G	0.60 Ref.	
F	1.40 Ref.		K	4.00 Ref.	

©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