



General Description

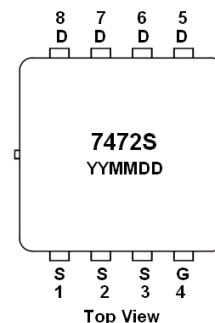
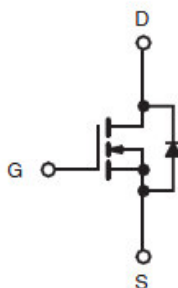
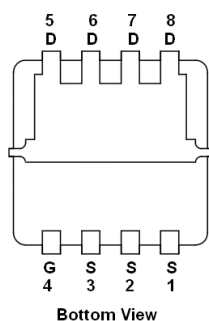
AFN7472S, N-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

These devices are particularly suited for low voltage power management, such as smart phone and notebook computer and other battery powered circuits, and low in-line power loss are needed in commercial industrial surface mount applications.

Features

- 30V/15A, $R_{DS(ON)}=8.6m\Omega@V_{GS}=10V$
- 30V/13A, $R_{DS(ON)}=14m\Omega@V_{GS}=4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- DFN3.3X3.3-8L package design

Pin Description (DFN3.3X3.3-8L)



Application

- DC-DC Converter
- POL

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
AFN7472SFN308RG	7472S	DFN3.3X3.3-8L	Tape & Reel	5000 EA

※ YY year code

※ MM month code

※ DD date code

※ AFN7472SFN308RG : 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}	± 20	V
Continuous Drain Current($T_J=150^{\circ}\text{C}$)	I_D	$T_A=25^{\circ}\text{C}$	15
		$T_A=70^{\circ}\text{C}$	12
Pulsed Drain Current	I_{DM}	70	A
Continuous Source Current(Diode Conduction)	I_S	20	A
Power Dissipation	P_D	$T_A=25^{\circ}\text{C}$	3.8
		$T_A=70^{\circ}\text{C}$	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	$R_{\theta JA}$	120	$^{\circ}\text{C/W}$

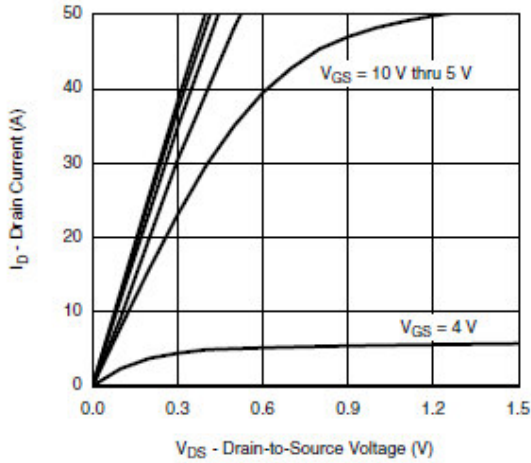
Electrical Characteristics

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

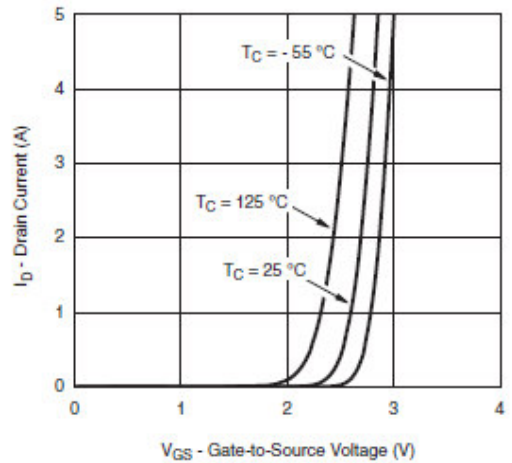
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0		2.0	V
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=24V, V_{GS}=0V$			1	uA
		$V_{DS}=24V, V_{GS}=0V$ $T_J=85^{\circ}\text{C}$			10	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq 5V, V_{GS}=10V$	20			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=20A$		7.6	8.6	m Ω
		$V_{GS}=4.5V, I_D=15A$		11	14	
Forward Transconductance	g_{FS}	$V_{DS}=15V, I_D=13A$		50		S
Diode Forward Voltage	V_{SD}	$I_S=10A, V_{GS}=0V$		0.8	1.3	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=15V, V_{GS}=4.5V$ $I_D \equiv 15A$		10	20	nC
Gate-Source Charge	Q_{gs}			3.8		
Gate-Drain Charge	Q_{gd}			3.8		
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V$ $f=1\text{MHz}$		995		pF
Output Capacitance	C_{oss}			190		
Reverse Transfer Capacitance	C_{rss}			125		
Turn-On Time	$t_{d(on)}$	$V_{DD}=15V, R_L=1.5\Omega$ $I_D \equiv 10A, V_{GEN}=10V$ $R_G=1.0\Omega$		10	20	ns
	t_r			10	20	
Turn-Off Time	$t_{d(off)}$			20	35	
	t_f			8	15	



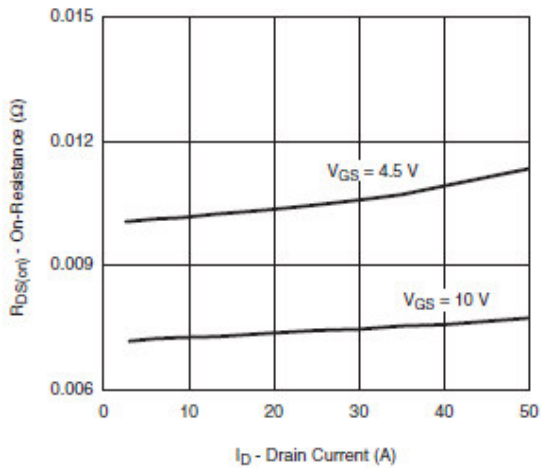
Typical Characteristics



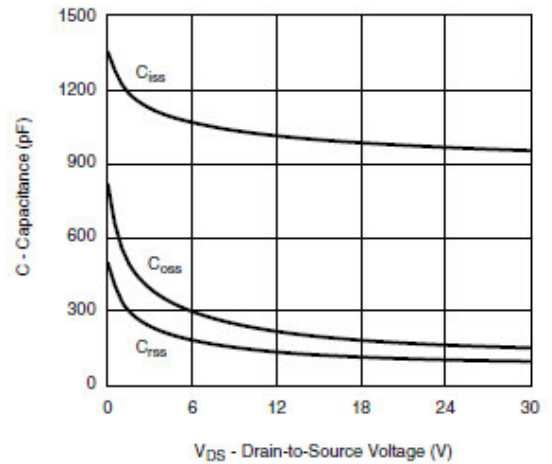
Output Characteristics



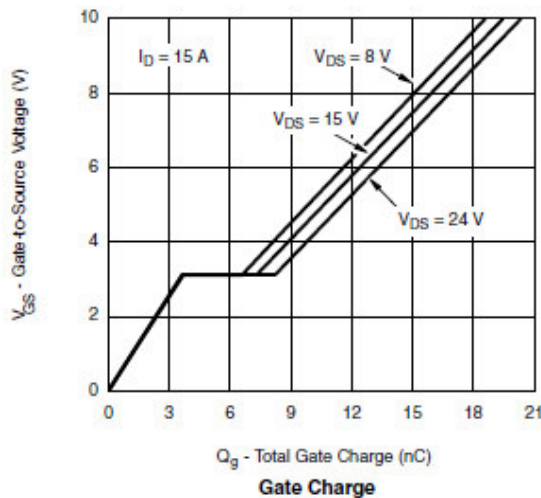
Transfer Characteristics



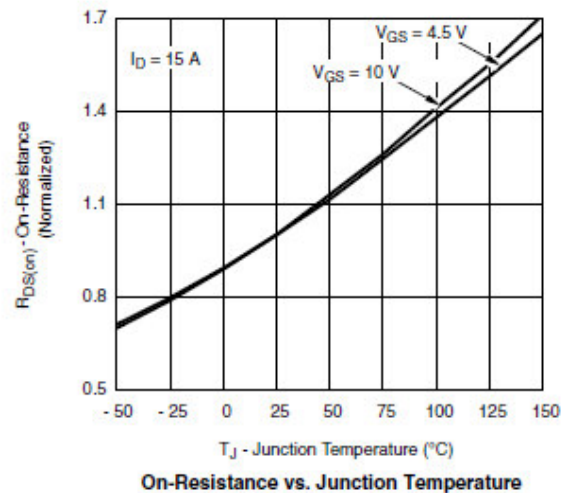
On-Resistance vs. Drain Current and Gate Voltage



Capacitance



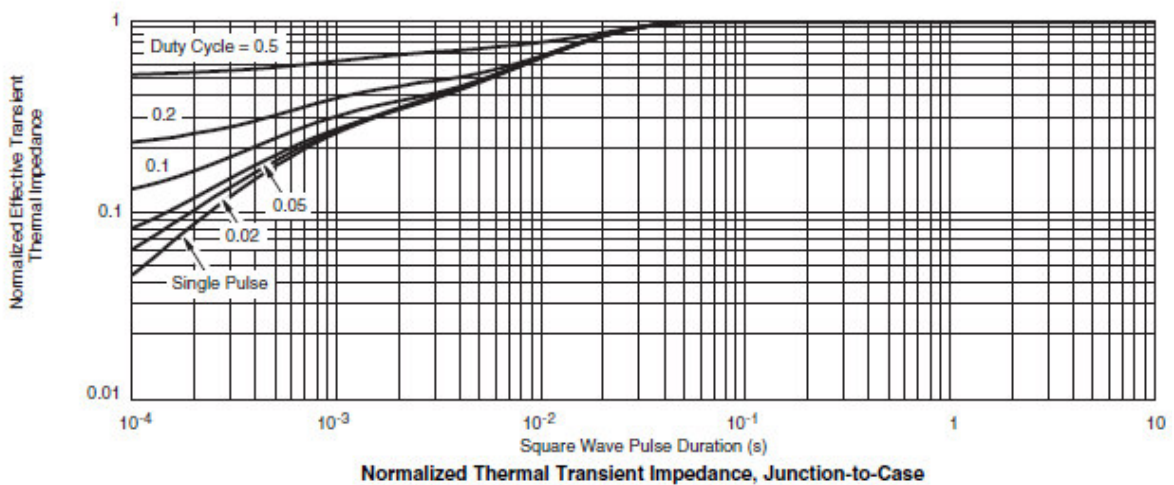
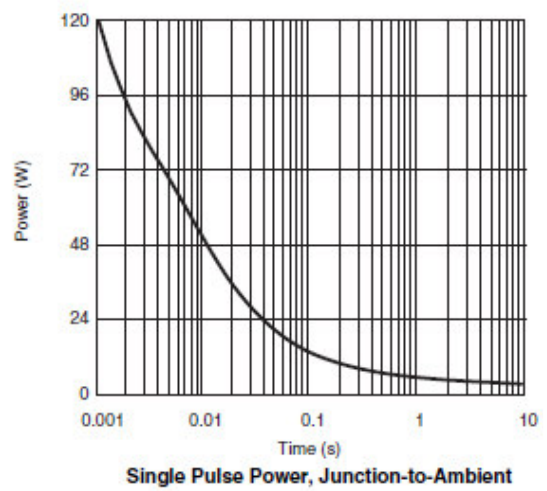
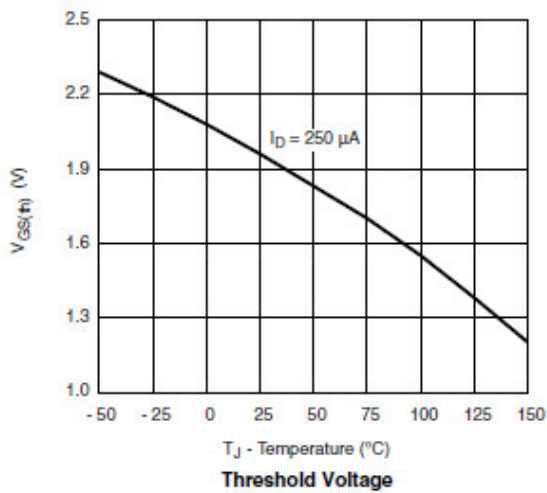
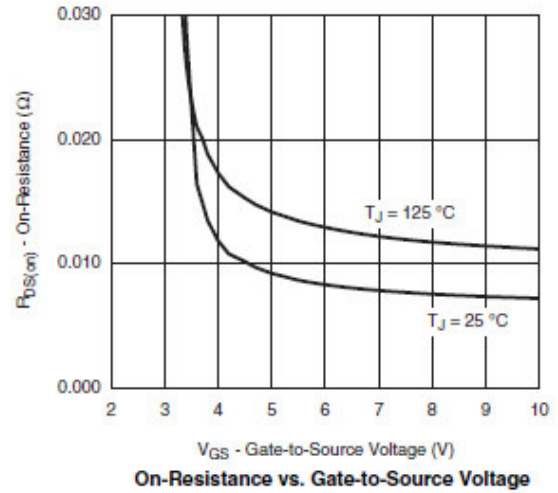
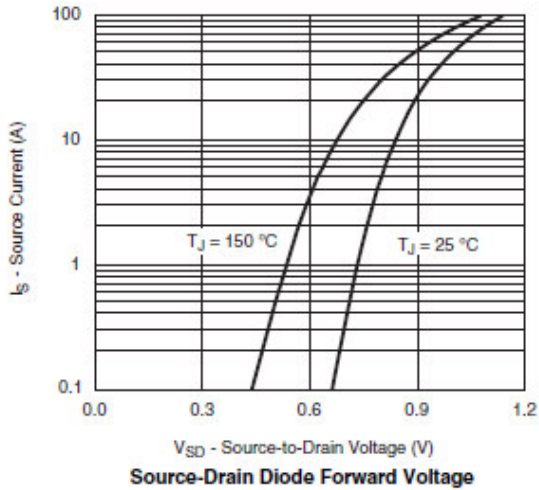
Gate Charge



On-Resistance vs. Junction Temperature



Typical Characteristics





Typical Characteristics

Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

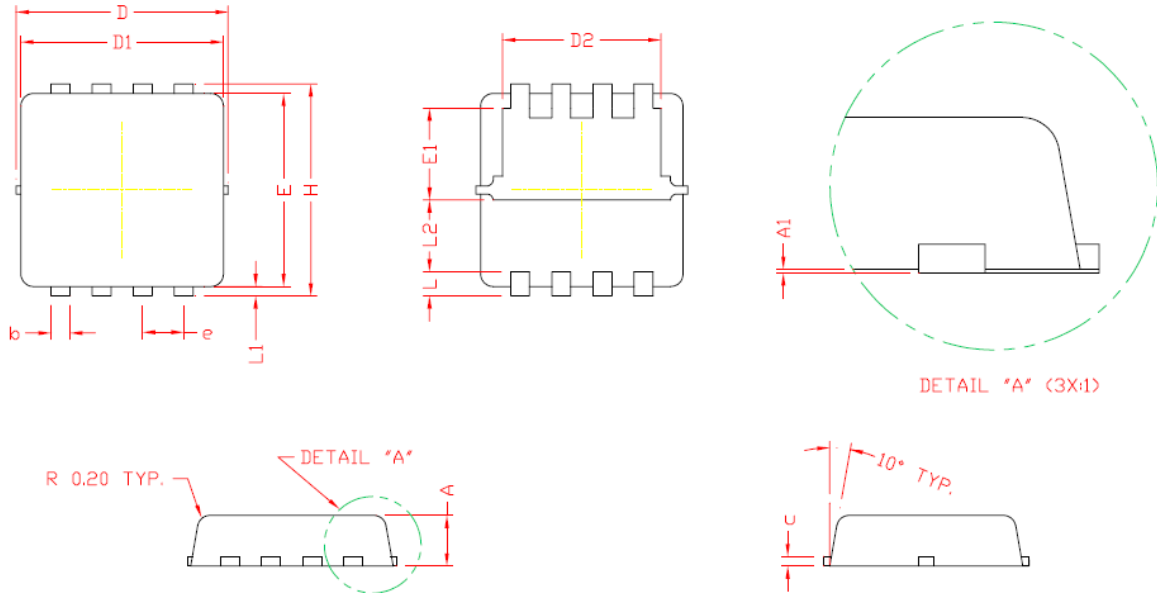


Unclamped Inductive Switching Test Circuit & Waveforms





Package Information (DFN3.3X3.3-8L)



DIMENSIONS

REF.	Millimeters		REF.	Millimeters	
	Min.	Max.		Min.	Max.
A	0.70	0.90	E	3.00	3.20
A1	0.00	0.05	E1	1.35	1.55
b	0.24	0.35	e	0.65 BSC.	
c	0.10	0.20	H	3.20	3.40
D	3.25	3.40	L	0.30	0.50
D1	3.05	3.25	L1	0.10	0.20
D2	2.40	2.60	L2	1.13 Ref.	

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