

-30V P-Channel Power MOSFET

MAIN CHARACTERISTICS

I_D	-12A
V_{DSS}	-30V
R_{DS(on)-typ(@V_{GS}=-10V)}	< 14mΩ (Type: 11.5 mΩ)

General Description:

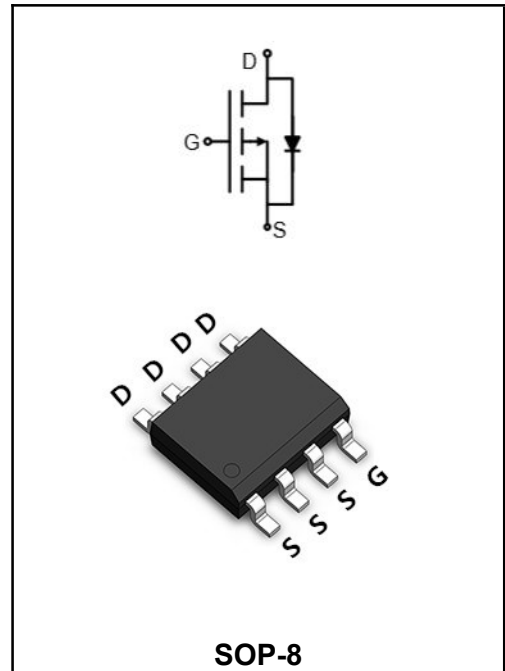
The YFW4407AS uses advanced trench technology and design to provide excellent RDS(ON) with low gate charge and operation with gate voltage as low as 4.5V. It can be used in a wide variety of applications. The package form is SOP-8, which accords with the RoHS standard and Halogen Free standard.

Features:

- ◆Fast Switching
- ◆Low Gate Charge and RDS(on)
- ◆Low Reverse transfer capacitances

Applications:

- ◆Battery switching application
- ◆Hard switched and high frequency circuits
- ◆Power management



Product Specification Classification

Part Number	Package	Marking	Pack
YFW4407AS	SOP-8	YFW 4407AS XXXXX	3000PCS/Tape

Absolute Maximum Ratings (TA= 25°C unless otherwise specified) :

Parameter	Symbols	Rating	Units
Drain-to-Source Voltage	V _{DS}	-30	V
Continuous Drain Current TC = 25 °C	I _D	-12	A
Continuous Drain Current TC = 70 °C		-9.6	A
Pulsed Drain Current	I _{DM} ^{a1}	-48	A
Gate-to-Source Voltage	V _{GS}	±25	V
Power Dissipation	P _D	3.1	W
Operating Junction and Storage Temperature Range	T _J , T _{stg}	150, -55 to 150	°C
Maximum Temperature for Soldering	T _L	300	°C

Electrical Characteristics (Tc= 25°C unless otherwise specified) :

OFF Characteristics						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
V _{DSS}	Drain to Source Breakdown Voltage	V _{Gs} =0V, I _d = -250μA	-30	-33	--	V
I _{DSS}	Drain to Source Leakage Current	V _{Ds} = -30V, V _{Gs} = 0V	--	--	-1	μA
I _{GSS(F)}	Gate to Source Forward Leakage	V _{Gs} = +25V	--	--	100	nA
I _{GSS(R)}	Gate to Source Reverse Leakage	V _{Gs} = -25V	--	--	-100	nA

ON Characteristics						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
R _{DS(ON)1}	Drain-to-Source On-Resistance	V _{Gs} =-20V, I _D =-12A	--	10.5	13	mΩ
R _{DS(ON)2}	Drain-to-Source On-Resistance	V _{Gs} =-10V, I _D =-12A	--	11.5	14	mΩ
R _{DS(ON)3}	Drain-to-Source On-Resistance	V _{Gs} =-4.5V, I _D =-12A	--	20	28	mΩ
V _{Gs(TH)}	Gate Threshold Voltage	V _{Ds} = V _{Gs} , I _D = -250μA	-1.0	-1.5	-2.0	V

Dynamic Characteristics						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
g _{fs}	Forward Transconductance	V _{Ds} =-15V, I _D =-12A	10	--	--	S
C _{iss}	Input Capacitance	V _{Gs} = 0V V _{Ds} = -15V f=1.0MHz	--	1600	--	pF
C _{oss}	Output Capacitance		--	350	--	
C _{rss}	Reverse Transfer Capacitance		--	300	--	

Resistive Switching Characteristics						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
t _{d(ON)}	Turn-on Delay Time	I _D =-1.0A	--	10	--	ns
t _r	Rise Time	V _{Ds} = -15V	--	15	--	
t _{d(OFF)}	Turn-Off Delay Time	V _{Gs} = 10V	--	110	--	
t _f	Fall Time	R _G = 6.0Ω	--	70	--	
Q _g	Total Gate Charge	I _D = -12A	--	30	--	nC
Q _{gs}	Gate to Source Charge	V _{Ds} = -15V	--	5.5	--	
Q _{gd}	Gate to Drain (" Miller ") Charge	V _{Gs} = -10V	--	8	--	

Source-Drain Diode Characteristics						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
I _S	Diode Forward Current		--	--	-12	A
V _{SD}	Diode Forward Voltage	I _S =-12A, V _{Gs} =0V	--	--	-1.2	V

Symbol	Parameter	Typ.	Units
R _{θJA}	Junction-to-Ambient	40	°C/W

^{a1}: Repetitive rating; pulse width limited by maximum junction temperature

Typical Electrical and Thermal Characteristics

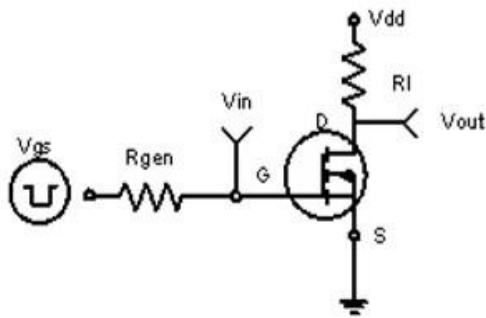


Figure 1: Switching Test Circuit

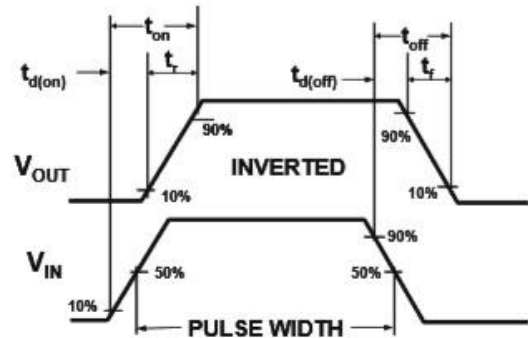


Figure 2: Switching Waveforms

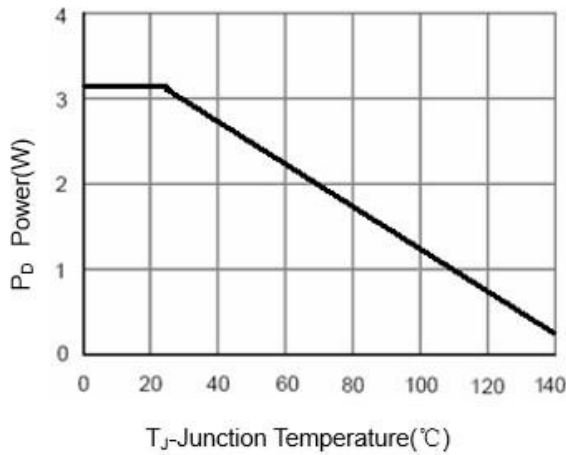


Figure 3 Power Dissipation

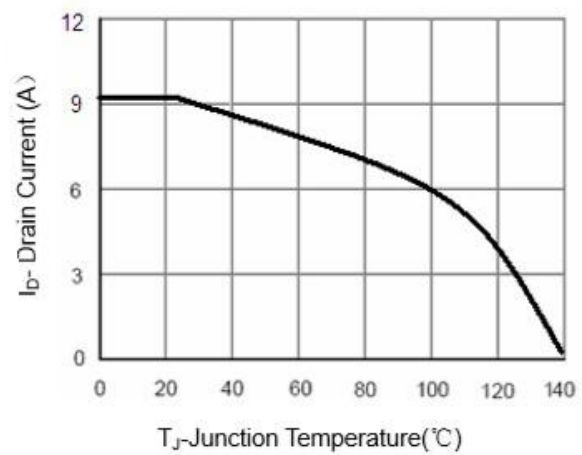


Figure 4 Drain Current

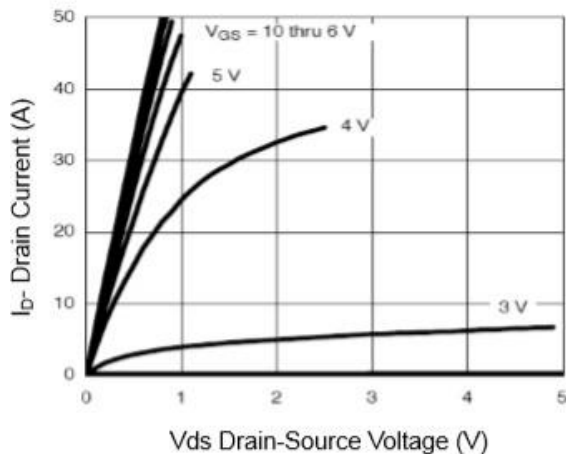


Figure 5 Output Characteristics

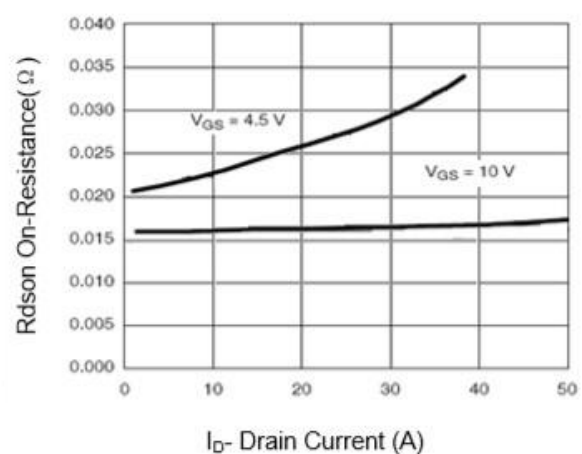


Figure 6 Drain-Source On-Resistance

Typical Electrical and Thermal Characteristics

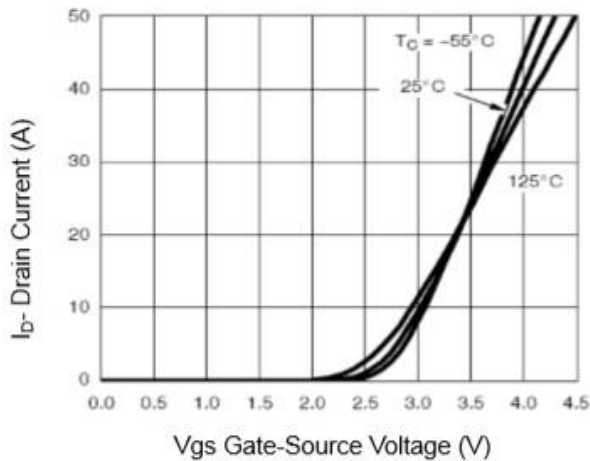


Figure 7 Transfer Characteristics

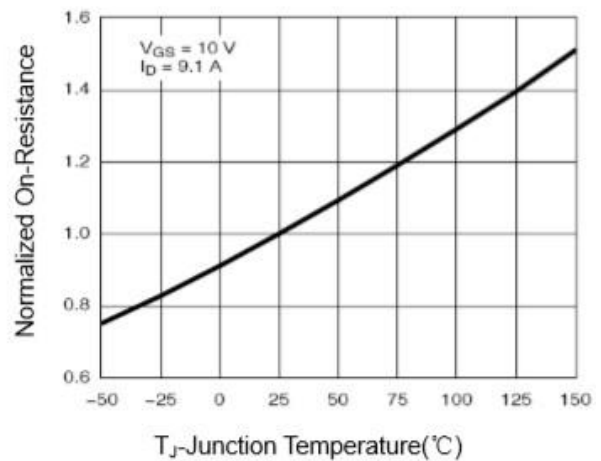


Figure 8 Drain-Source On-Resistance

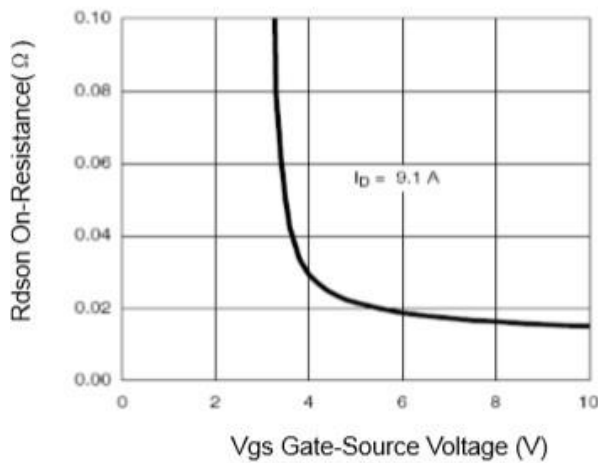


Figure 9 Rdson vs Vgs

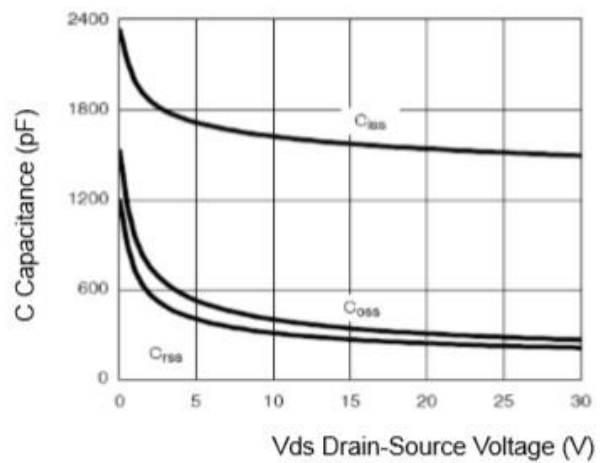


Figure 10 Capacitance vs Vds

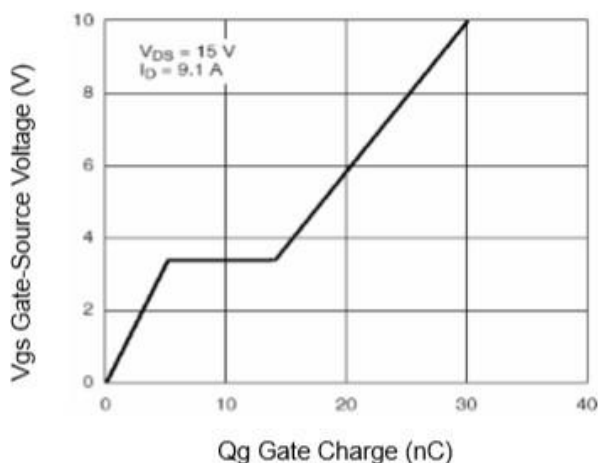


Figure 11 Gate Charge

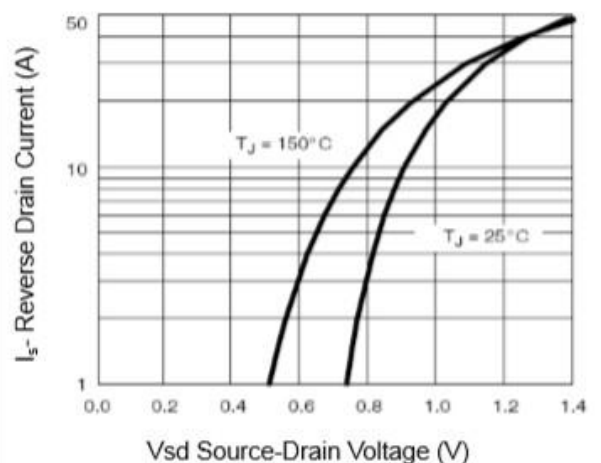


Figure 12 Source- Drain Diode Forward

Typical Electrical and Thermal Characteristics

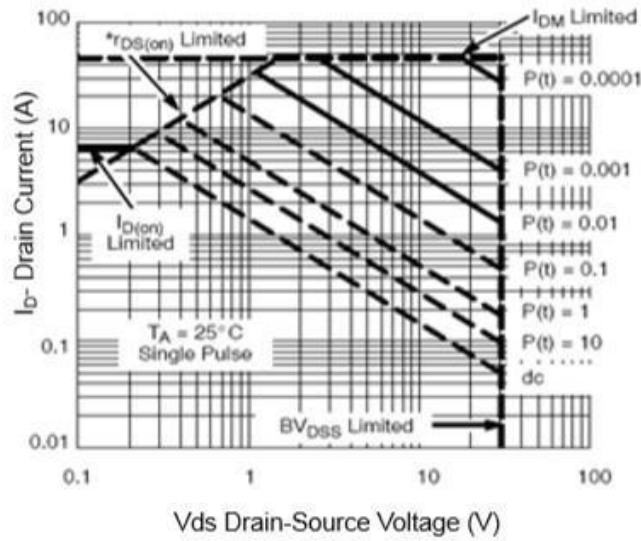


Figure 13 Safe Operation Area

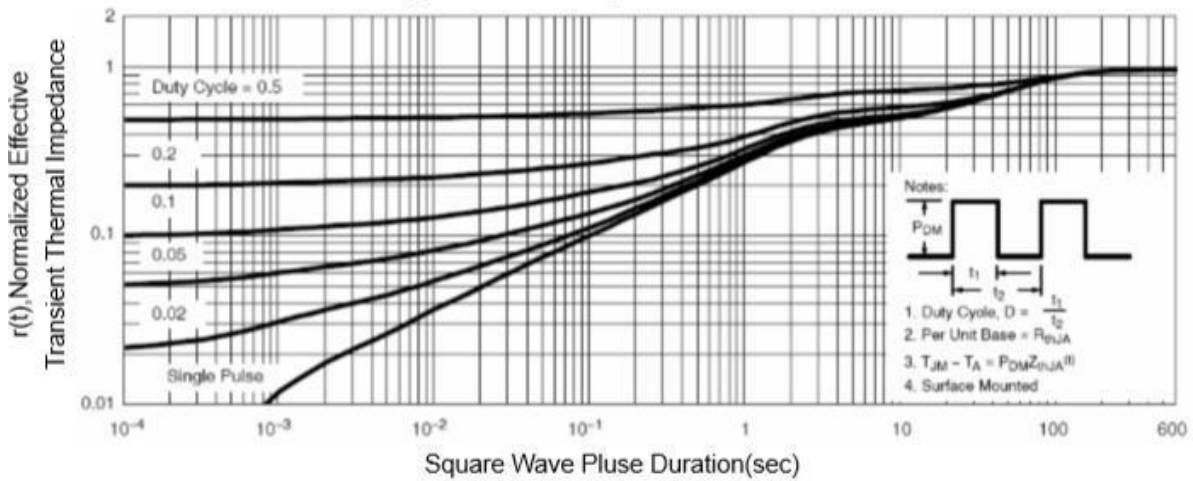
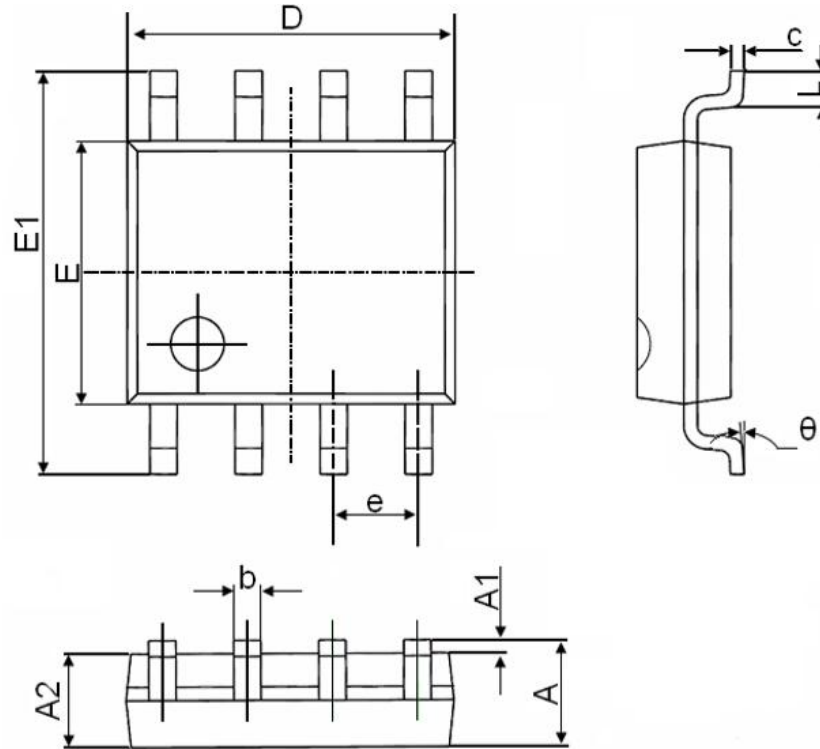


Figure 14 Normalized Maximum Transient Thermal Impedance

SOP-8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

单击下面可查看定价，库存，交付和生命周期等信息

[>>YFW\(佑风微\)](#)