



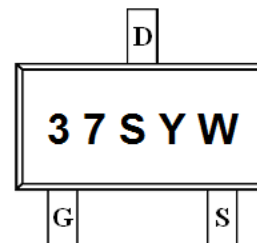
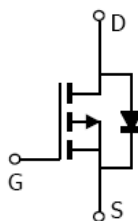
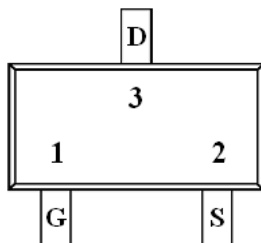
General Description

AFP2337S, 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

- -100V/-3.8A, $R_{DS(ON)} = 240m\Omega @ V_{GS} = -10V$
- -100V/-2.6A, $R_{DS(ON)} = 250m\Omega @ V_{GS} = -4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- SOT-23-3L package design

Pin Description (SOT-23-3L)



Application

- Active Clamp Circuits in DC/DC Power Supplies

Pin Define

Pin	Symbol	Description
1	G	Gate
2	S	Source
3	D	Drain

Ordering Information

Part Ordering No.	Part Marking	Package	Unit	Quantity
AFP2337SS23RG	37SYW	SOT-23-3L	Tape & Reel	3000 EA

- ※ 37S parts code
- ※ Y year code (0 ~ 9)
- ※ W week code (A ~ Z = 1 ~ 26 / a ~ z = 27 ~ 52)
- ※ AFP2337SS23RG : 7" Tape & Reel ; Pb- Free ; Halogen -Free



Absolute Maximum Ratings

(T_A=25°C Unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DSS}	-100	V
Gate-Source Voltage	V _{GSS}	±20	V
Continuous Drain Current(T _J =150°C)	I _D	T _A =25°C	-3.8
		T _A =70°C	-2.6
Pulsed Drain Current	I _{DM}	-15	A
Continuous Source Current(Diode Conduction)	I _S	-5	A
Power Dissipation	P _D	T _A =25°C	2.8
		T _A =70°C	1.2
Operating Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{STG}	-55/150	°C
Thermal Resistance-Junction to Ambient	R _{θJA}	120	°C/W

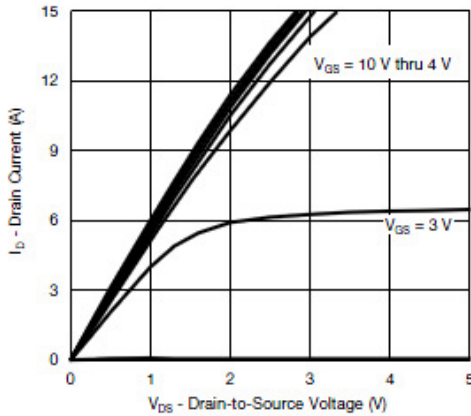
Electrical Characteristics

(T_A=25°C Unless otherwise noted)

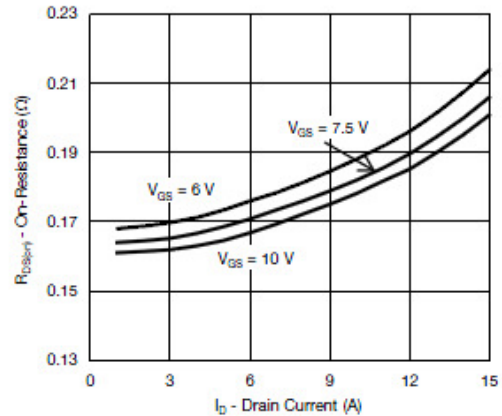
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D = -250uA	-100			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D = -250uA	-1.0		-2.5	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage 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} ≥ -10V, V _{GS} = -10V	-8			A
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -10V, I _D =-3.8A		220	240	mΩ
		V _{GS} = -4.5V, I _D =-2.6A		230	250	
Forward Transconductance	g _{FS}	V _{DS} = -15V, I _D = -3.2A		12		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 = -2.6A		12	20	nC
Gate-Source Charge	Q _{gs}			3.0		
Gate-Drain Charge	Q _{gd}			4.5		
Input Capacitance	C _{iss}	V _{DS} =-50V, V _{GS} =0V f=1MHz		1100		pF
Output Capacitance	C _{oss}			70		
Reverse Transfer Capacitance	C _{rss}			45		
Turn-On Time	t _{d(on)}	V _{DD} =-50V, R _L =17Ω I _D ≡-2.6A, V _{GEN} =-10V R _G =1Ω		8	15	ns
	t _r			15	20	
Turn-Off Time	t _{d(off)}			35	50	
	t _f			10	25	



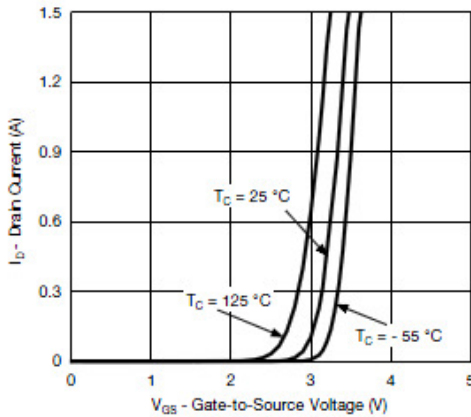
Typical Characteristics



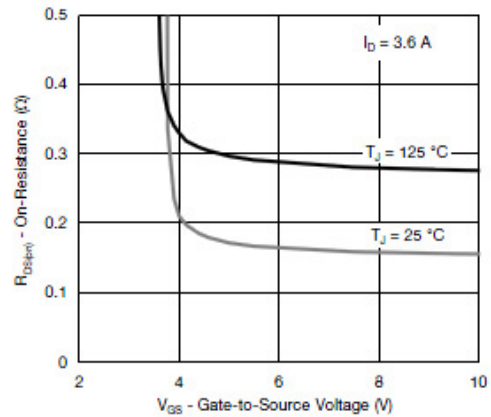
Output Characteristics



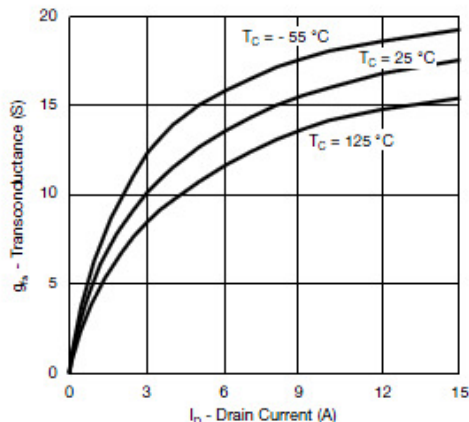
On-Resistance vs. Drain Current



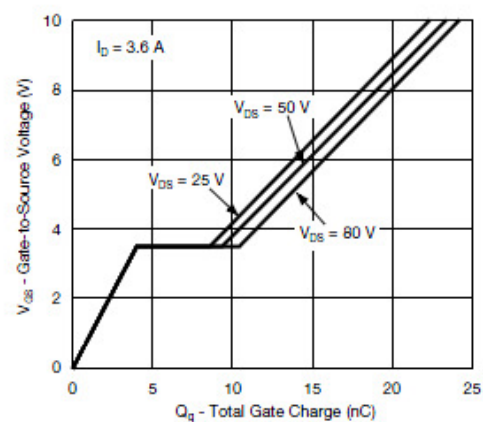
Transfer Characteristics



On-Resistance vs. Gate-to-Source Voltage



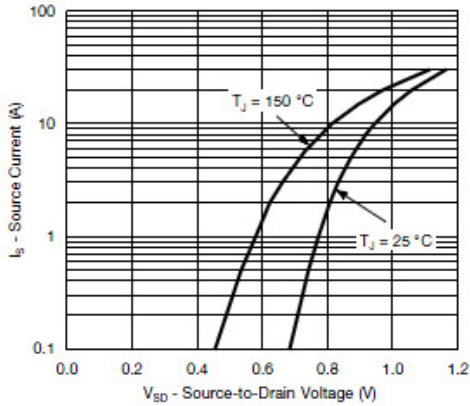
Transconductance



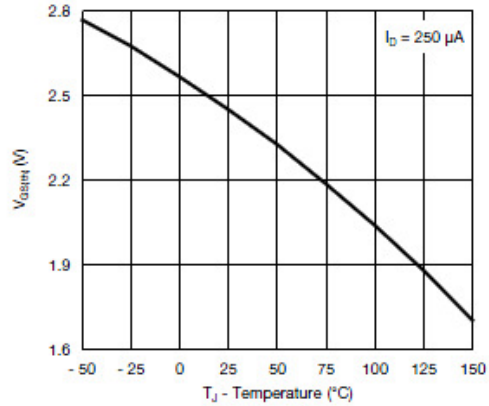
Gate Charge



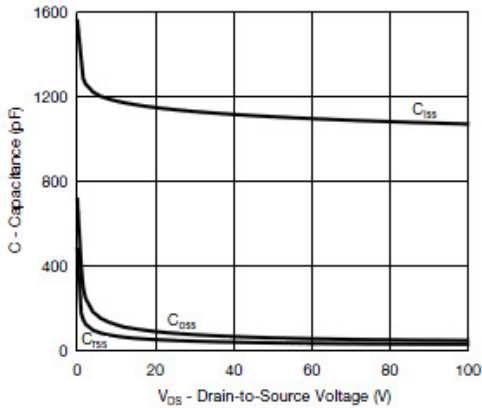
Typical Characteristics



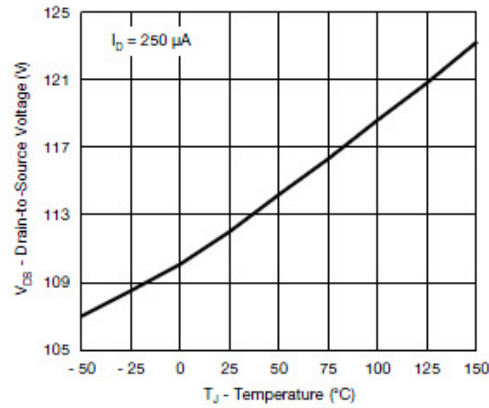
Source-Drain Diode Forward Voltage



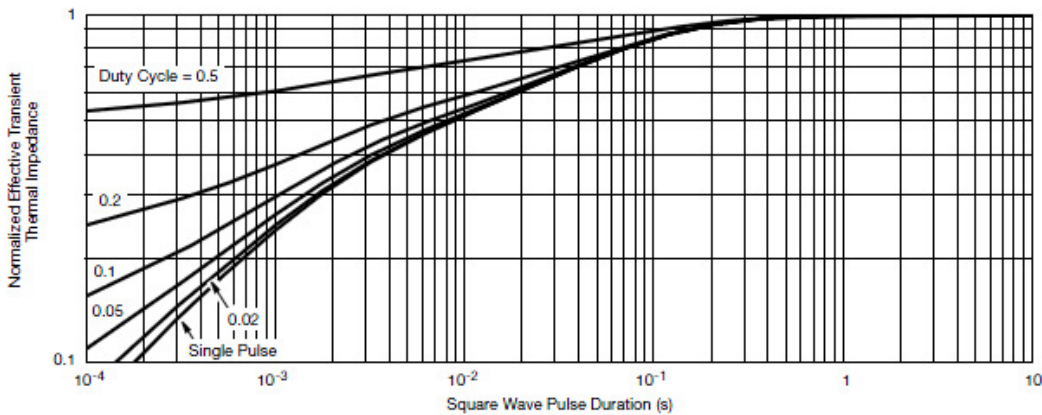
Threshold Voltage



Capacitance



Drain Source Breakdown vs. Junction Temperature

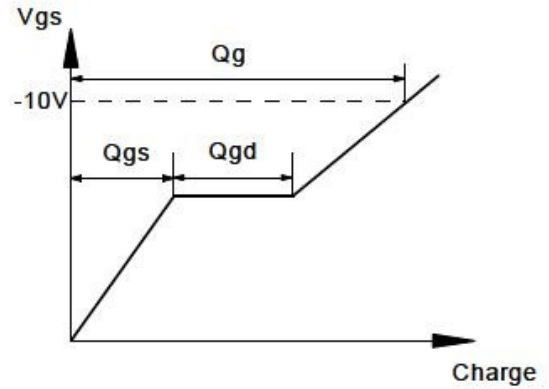
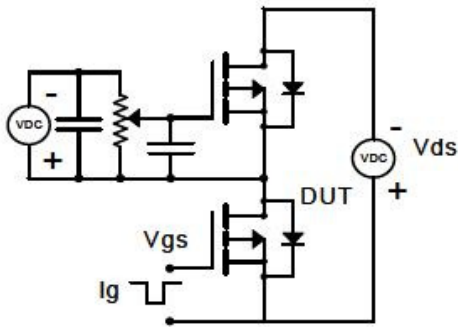


Normalized Thermal Transient Impedance, Junction-to-Case

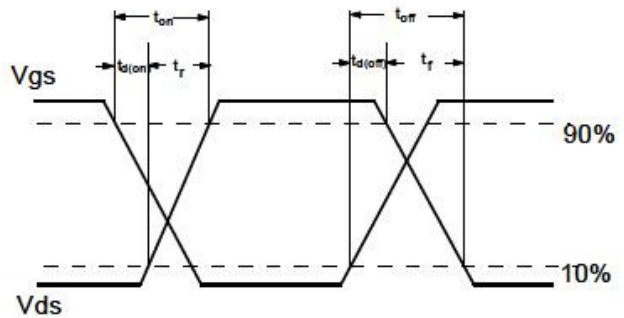
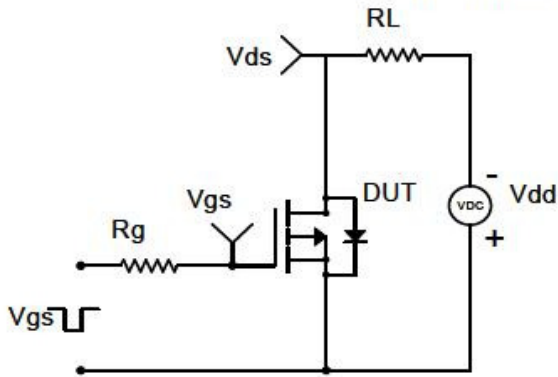


Typical Characteristics

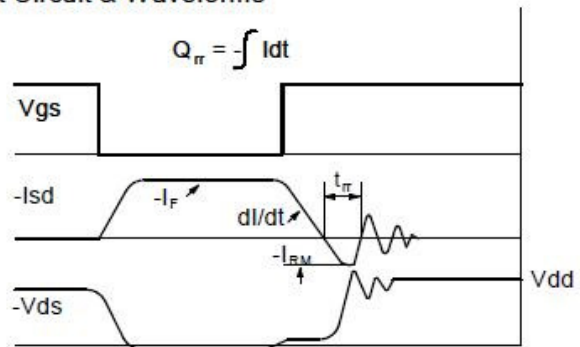
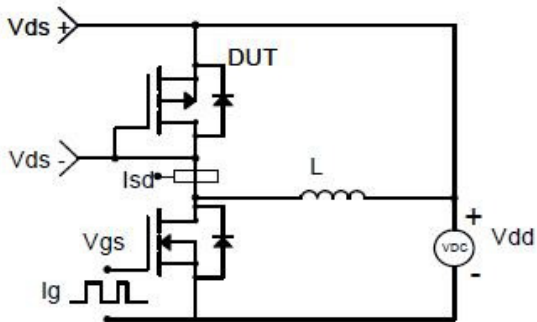
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

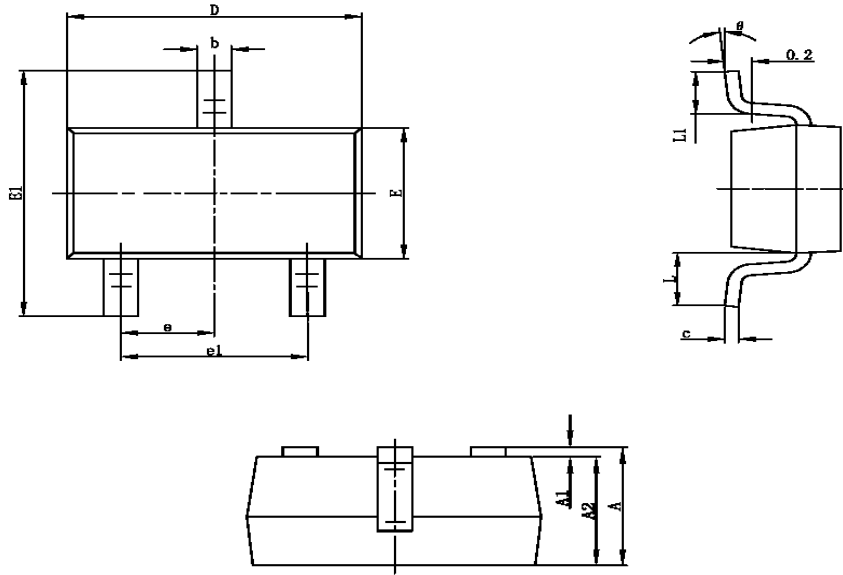


Diode Recovery Test Circuit & Waveforms





Package Information (SOT-23-3L)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.400	0.012	0.016
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.700REF		0.028REF	
L1	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

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