



General Description

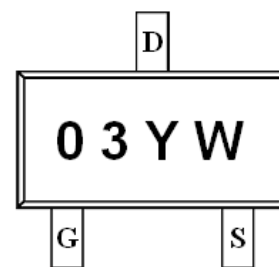
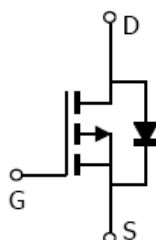
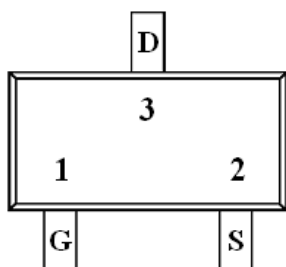
AFP3403, P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

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

- -30V/-3.0A, $R_{DS(ON)}=125m\Omega@V_{GS}=-10.0V$
- -30V/-2.6A, $R_{DS(ON)}=155m\Omega@V_{GS}=-4.5V$
- -30V/-1.2A, $R_{DS(ON)}=220m\Omega@V_{GS}=-2.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23-3L package design

Pin Description (SOT-23-3L)



Application

- Power Management in Note book
- LED Display
- DC-DC System
- LCD Panel

Pin Define

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

Ordering Information

Part Ordering No.	Part Marking	Package	Unit	Quantity
AFP3403S23RG	03YW	SOT-23-3L	Tape & Reel	3000 EA

- ※ 03 parts code
- ※ Y year code (0 ~ 9)
- ※ W week code (A ~ Z = 1 ~ 26 / a ~ z = 27 ~ 52)
- ※ AFP3403S23RG : 7" 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}	± 12	V
Continuous Drain Current($T_J=150^{\circ}\text{C}$)	I_D	$T_A=25^{\circ}\text{C}$	-3.0
		$T_A=70^{\circ}\text{C}$	-1.2
Pulsed Drain Current	I_{DM}	-15	A
Continuous Source Current(Diode Conduction)	I_S	-1.5	A
Power Dissipation	P_D	$T_A=25^{\circ}\text{C}$	1.25
		$T_A=70^{\circ}\text{C}$	0.8
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	$^{\circ}\text{C}/\text{W}$

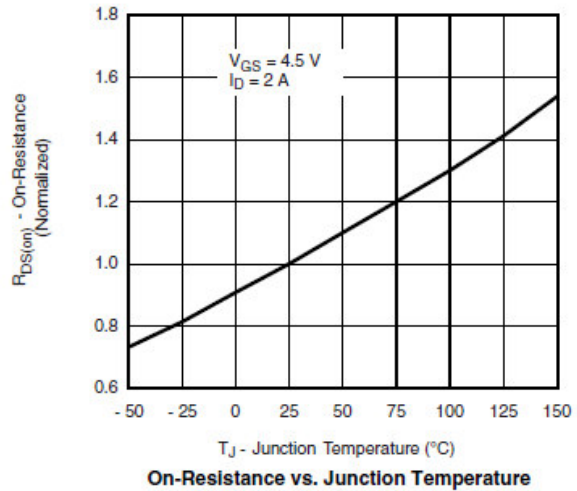
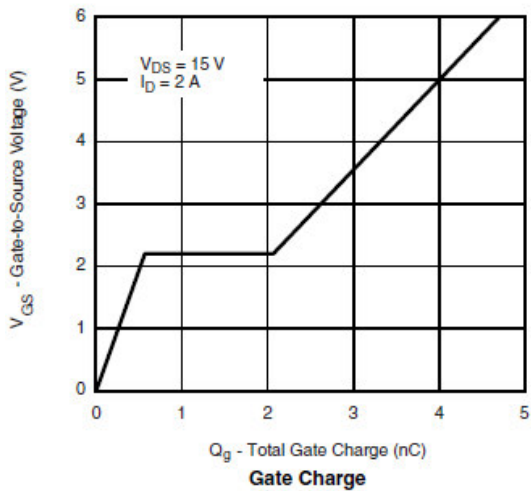
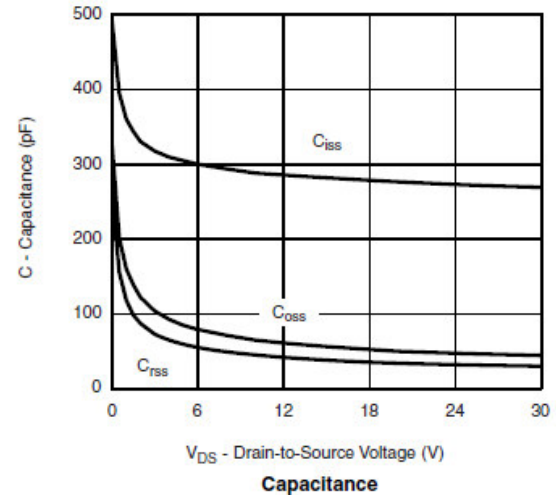
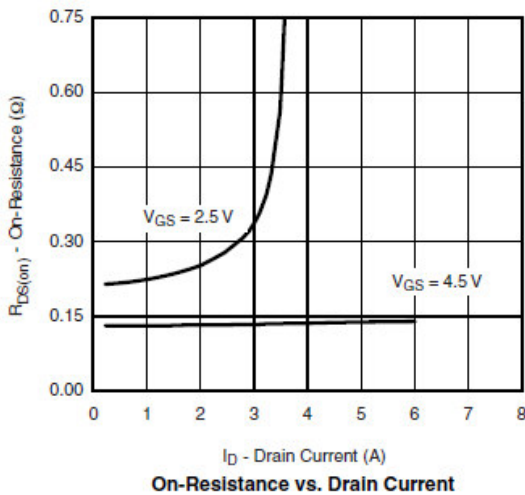
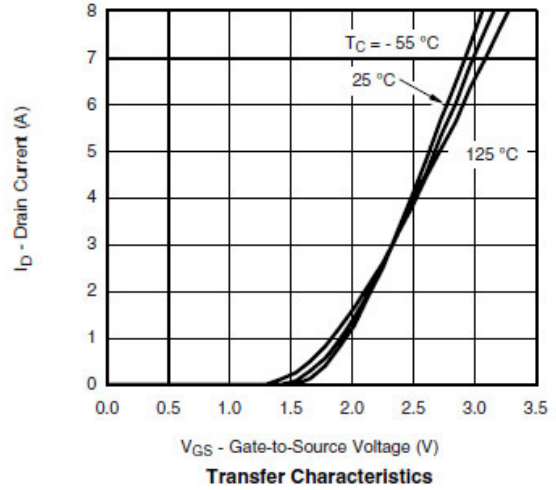
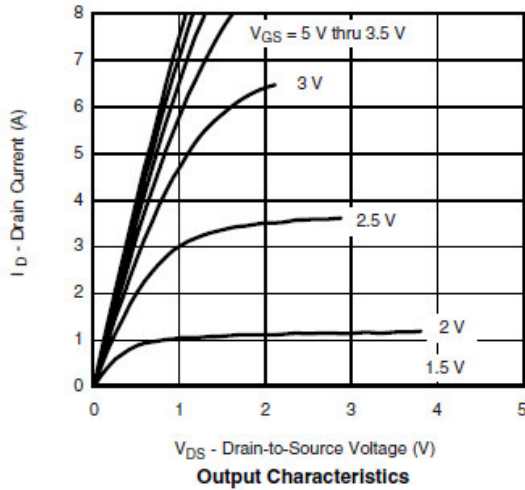
Electrical Characteristics

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

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0\text{V}, I_D=-250\mu\text{A}$	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu\text{A}$	-0.6		-1.4	
Gate Leakage Current	I_{GSS}	$V_{DS}=0\text{V}, V_{GS}=\pm 12\text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-24\text{V}, V_{GS}=0\text{V}$			-1	uA
		$V_{DS}=-24\text{V}, V_{GS}=0\text{V}$ $T_A=85^{\circ}\text{C}$			-30	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \leq -5\text{V}, V_{GS}=-10\text{V}$	-10			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10\text{V}, I_D=-3.0\text{A}$			125	m Ω
		$V_{GS}=-4.5\text{V}, I_D=-2.6\text{A}$			155	
		$V_{GS}=-2.5\text{V}, I_D=-1.2\text{A}$			220	
Forward Transconductance	g_{FS}	$V_{DS}=-5\text{V}, I_D=-4.0\text{A}$		10		S
Diode Forward Voltage	V_{SD}	$I_S=-1.7\text{A}, V_{GS}=0\text{V}$		-0.7	-1.3	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=-15\text{V}, V_{GS}=-4.5\text{V}$ $I_D \equiv -2.0\text{A}$		4	6	nC
Gate-Source Charge	Q_{gs}			0.6		
Gate-Drain Charge	Q_{gd}			1.5		
Input Capacitance	C_{iss}	$V_{DS}=-15\text{V}, V_{GS}=0\text{V}$ $f=1\text{MHz}$		230		pF
Output Capacitance	C_{oss}			40		
Reverse Transfer Capacitance	C_{rss}			25		
Turn-On Time	$t_{d(on)}$	$V_{DD}=-15\text{V}, R_L=15\Omega$ $I_D \equiv -1.0\text{A}, V_{GEN}=-10\text{V}$ $R_G=6\Omega$		5	10	ns
	t_r			8	15	
Turn-Off Time	$t_{d(off)}$			15	30	
	t_f			15	30	

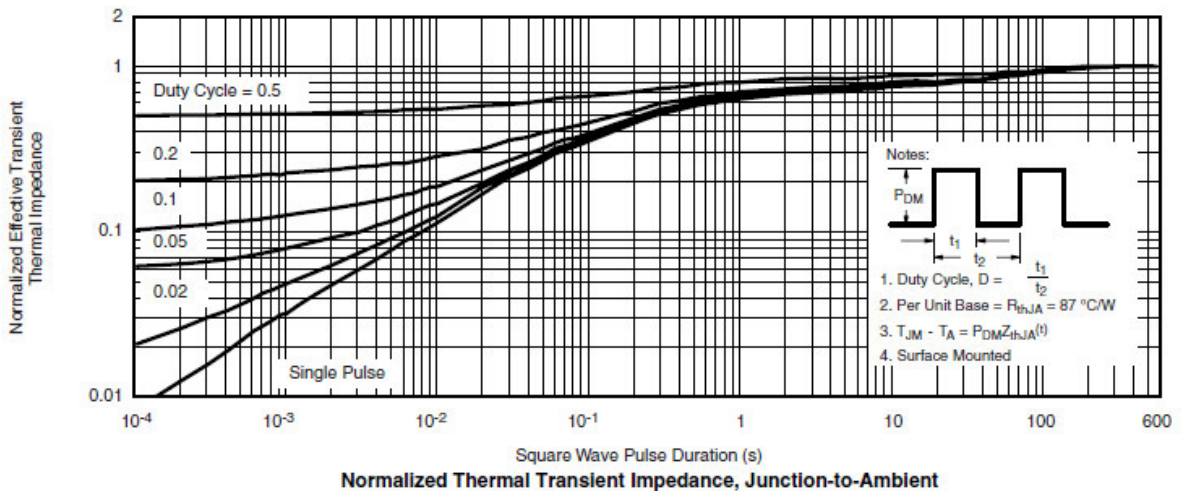
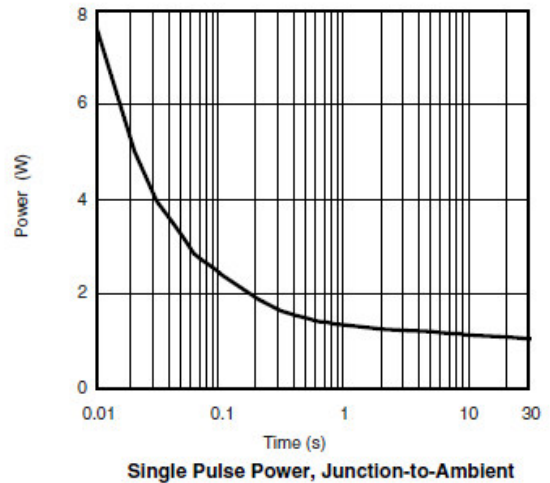
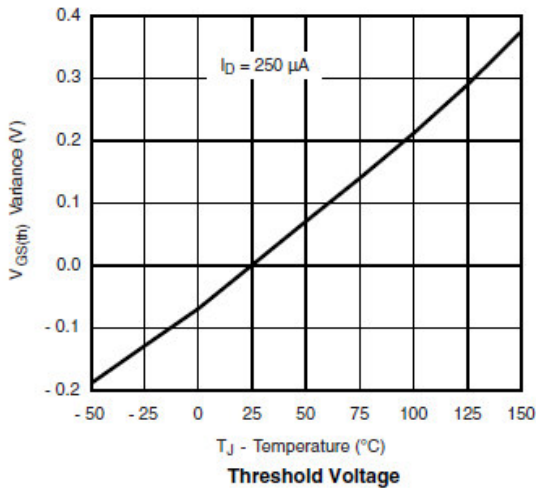
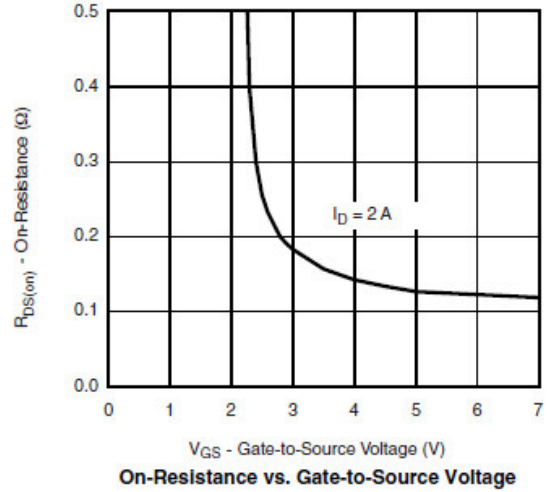
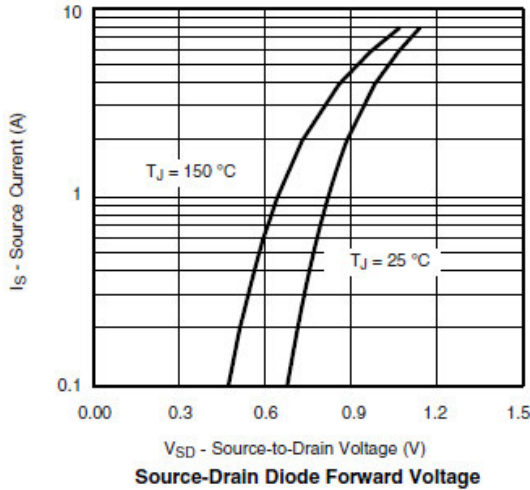


Typical Characteristics





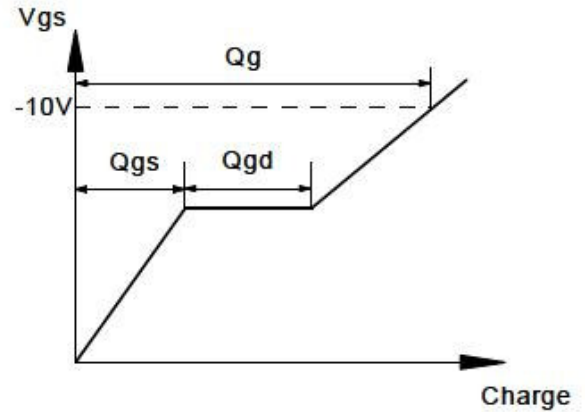
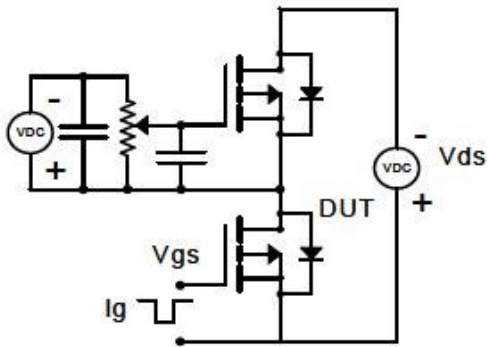
Typical Characteristics



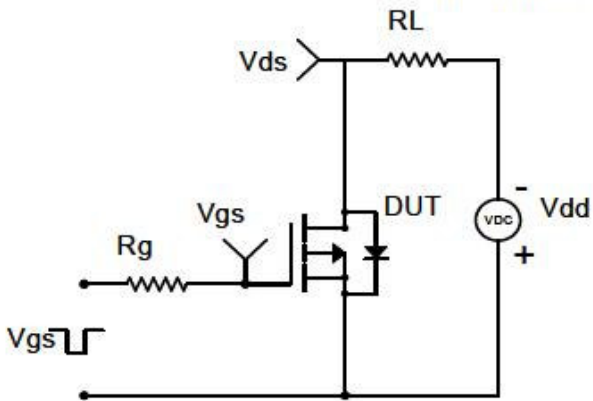


Typical Characteristics

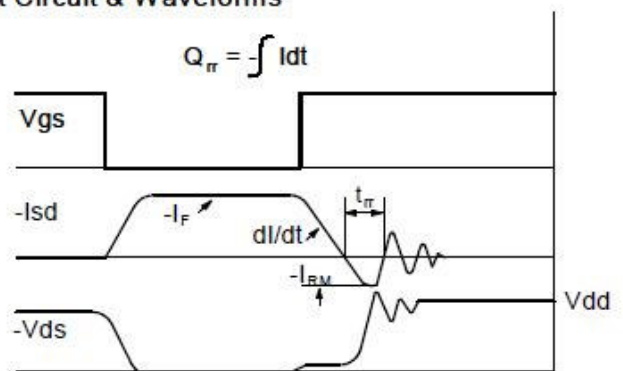
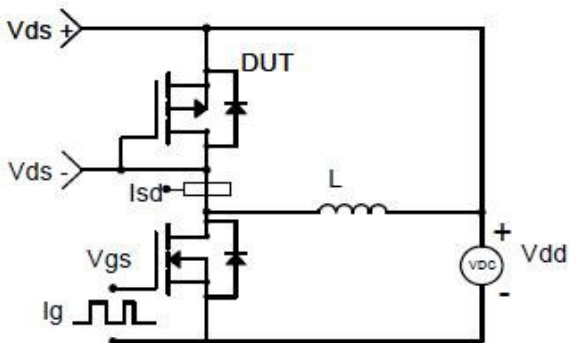
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

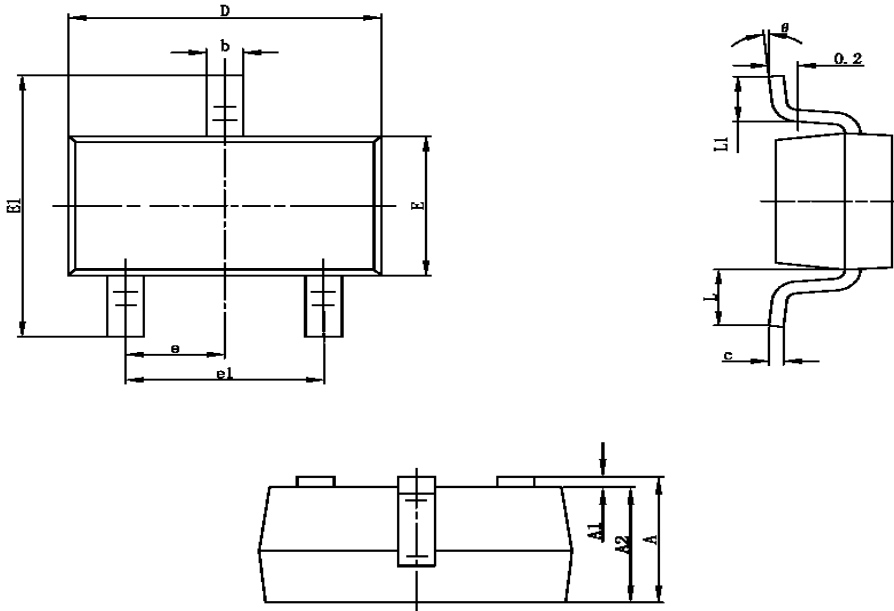


Diode Recovery Test Circuit & Waveforms





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°

©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