UMW APM4953

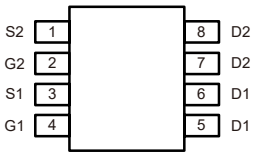
Dual -30V P-Channel MOSFET

1.Features

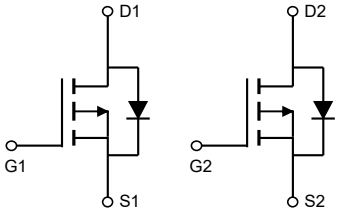
- $V_{DS\ (V)}$=-30V
- I_D=-5.3A
- $R_{DS(ON)}$<38mΩ(V_{GS}=-10V)
- $R_{DS(ON)}$<59mΩ(V_{GS}=-4.5V)

2.Pinning Information

Pin	Symbol	Description
1,3	S2,S1	SOURCE
2,4	G2,G1	GATE
5,6,7,8	D2,D1	DRAIN



Top View



3.Absolute Maximum Ratings T_A= 25°C

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	
Drain Current (Continuous)	I_D	-5.3	A
Drain Current (Pulsed) [a]	I_{DM}	-20	
Total Power Dissipation @T_A=25°C	P_D	2	W
Maximum Diode Forward Current	I_S	-1.9	A
Storage Temperature Range	T_J, T_{STG}	-55 to 150	°C
Thermal Resistance Junction to Ambient (PCB mounted) [b]	$R_{\theta JA}$	50	°C/W

Notes:

a: Repetitive Rating: Pulse width limited by the maximum junction temperation.

b: 1-in^2 2oz Cu PCB board.

4.Electrical Characteristic (T_A=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Off Characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS}=0V, I_D=-250μA	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-24V, V_{GS}=0V			-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V			±100	nA
On Characteristics [b]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-1	-1.5	-2.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-5.3A		38	41	mΩ
		V_{GS}=-4.5V, I_D=-3.9A		59	75	mΩ
Forward Transconductance	g_{FS}	V_{DS}=-10V, I_D=-5.3A		11		S
Dynamic Characteristics [c]						
Input Capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz		504		pF
Output Capacitance	C_{oss}			68		pF
Reverse Transfer Capacitance	C_{rss}			56		pF
Switching Characteristics [c]						
Total Gate Charge	Q_g	V_{DS}=-15V, I_D=-3.6A V_{GS}=-10V		12		nC
Gate-Source Charge	Q_{gs}			2.3		nC
Gate-Drain Charge	Q_{gd}			1.4		nC
Turn-on Delay Time	$t_{D(on)}$	V_{DD}=-15V, R_L=5Ω, I_D=-3A V_{GEN}=-10Ω, R_G=6Ω		8.1		ns
Turn-on Rise Time	t_r			3.3		ns
Turn-Off Delay Time	$t_{D(off)}$			29.3		ns
Turn-Off Fall Time	t_f			5.6		ns
Drain-Source Diode Characteristics						
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=-1.9A			-1.3	V

Notes: Pulse Test: Pulse Width ≤300us, Duty Cycle ≤ 2%.

5.1Typical Characteristic

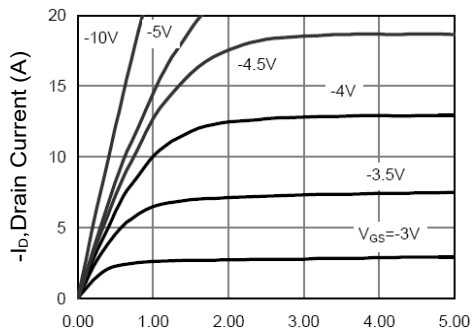


Figure 1: Output Characteristics

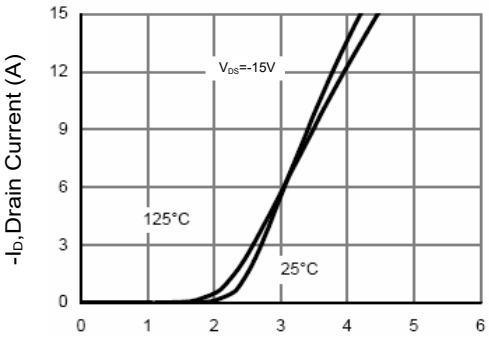


Figure 2: Transfer Characteristics

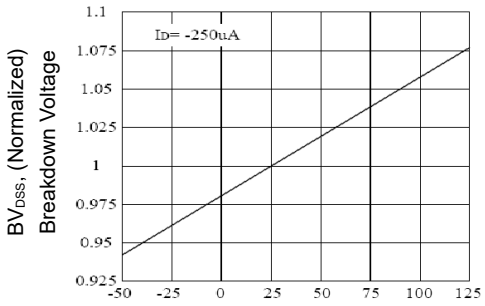


Figure 3: Breakdown Voltage Variation withTemperature

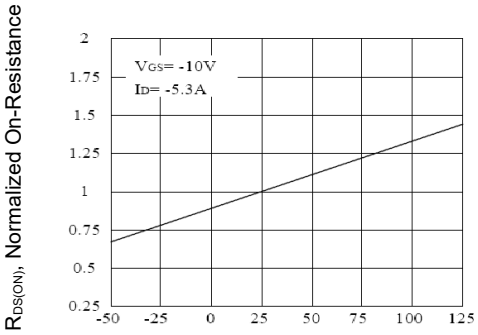


Figure 4: On-Resistance Variation with Temperature

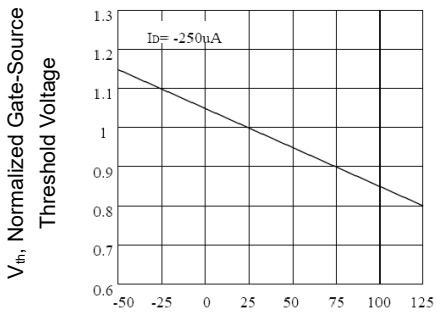


Figure 5: Gate Threshold Variation with Temperature

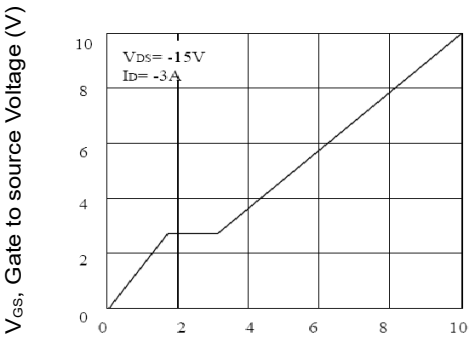


Figure 6: Gate Charge

5.2Typical Characteristic

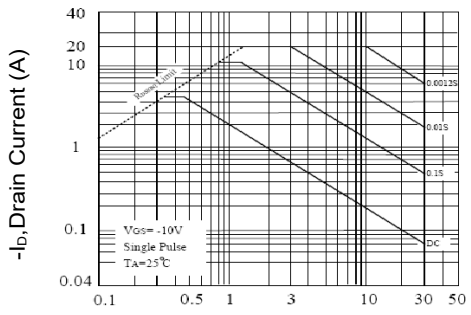


Figure 7: Maximum Safe Operating Area

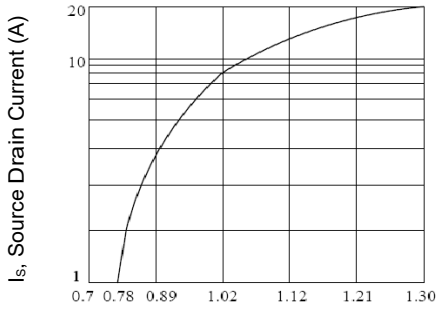


Figure 8: Body Diode Forward Voltage Variationwith Source Curent

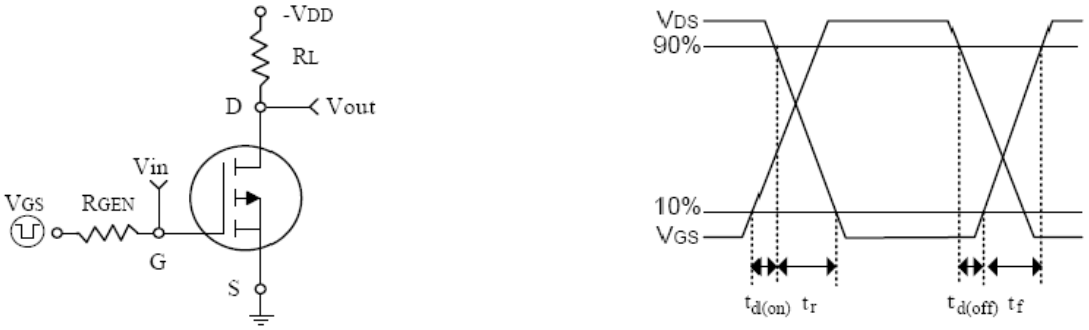
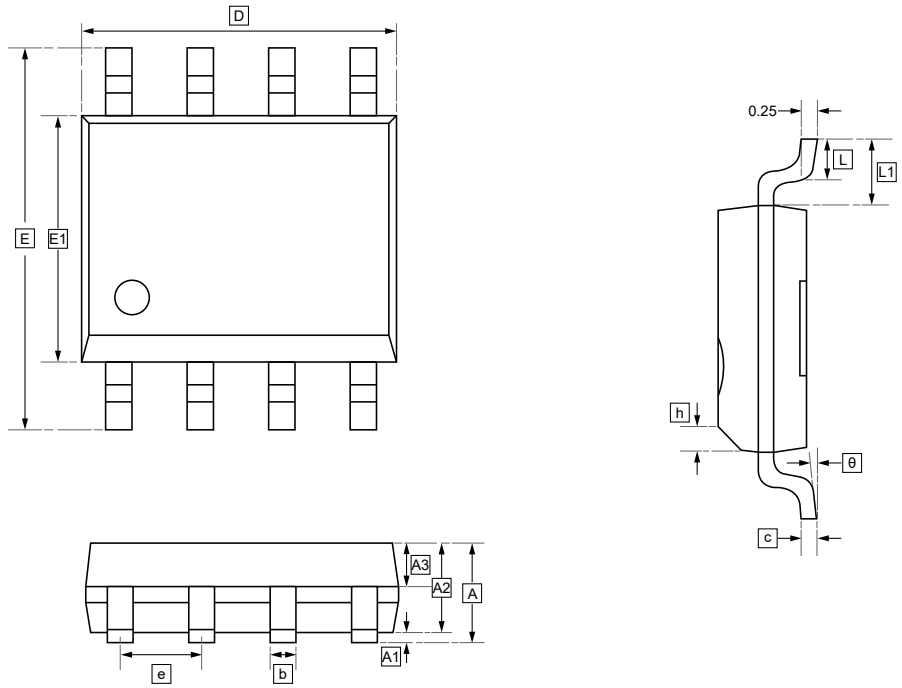


Figure 9: Switching Test Circuit and SwitchingWaveforms

6.SOP-8 Package Outline Dimensions

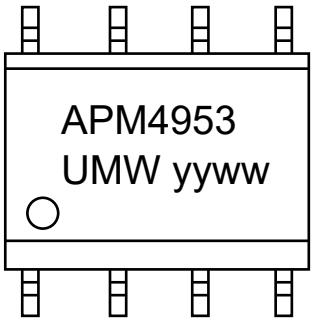


DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	A3	b	c	D	E	E1	e	h	L
Min	-	0.05	1.30	0.60	0.39	0.20	4.70	5.80	3.80	1.24	0.30	0.50
Max	1.75	0.20	1.50	0.70	0.47	0.24	5.10	6.20	4.00	1.30	0.50	0.80

Symbol	L1	θ
Min	1.00	0°
Max	1.10	8°

7.Ordering Information



yy: Year Code
ww: Week Code

Order Code	Package	Base QTY	Delivery Mode
UMW APM4953	SOP-8	3000	Tape and reel

8.Disclaimer

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