

# **Product Specification**

## XBLW APM4953

Dual P-Channel Enhancement Mode MOSFET

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## Description

The APM4953 uses advanced trench technology and design to provide excellent RDS(ON) with low gate charge. It can be used in a wide variety of applications.

## **General Features**

- ➤ VDS = -30V,ID = -5.3A
- ➢ RDS(ON) < 42mΩ@ VGS=-10V</p>
- > RDS(ON) < 85mΩ@ VGS=-4.5V</p>

**Package Marking and Ordering Information** 

## Application

- > PWM application
- Load switch





#### Dual P-Channel MOSFET

Product Model	Package Type	Marking	Packing	Packing Qty
XBLW APM4953	SOP-8	APM4953	Таре	3000Pcs/Reel

## Absolute Maximum Ratings (TA=25°Cunless otherwise noted)

Symbol	Parameter	Limit	Unit
VDS	Drain-Source Voltage	-30	V
Vgs	Gate-Source Voltage	±20	V
lD	Drain Current-Continuous	-5.3	A
Ісм	Drain Current-Pulsed (Note 1)	-20	A
PD	Maximum Power Dissipation	2.6	W
Тյ,Тѕтс	Operating Junction and Storage Temperature Range	-55 To 150	°C
Reja	Thermal Resistance, Junction-to-Ambient (Note 2)	49	°C/W



## **Electrical Characteristics TA=25°Cunless otherwise noted**

Parameter	Parameter Symbol Condition		Min	Тур	Max	Unit
Off Characteristics		·	_			
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V I <sub>D</sub> =-250µA	-30	-33	-	V
Zero Gate Voltage Drain Current	loss	V <sub>DS</sub> =-24V,V <sub>GS</sub> =0V	-	-	-1	μA
		1				
Gate-Body Leakage Current	lgss	$V_{GS}$ =±20V, $V_{DS}$ =0V	-	-	±100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	VGS(th)	$V_{DS}=V_{GS}$ , ID=-250µA	-1	-1.6	-3	V
		V <sub>GS</sub> =-10V, I <sub>D</sub> =-5.3A	-	35	42	m
Drain-Source On-State Resistance	Rds(on)	RDS(ON) VGS=-4.5V, ID=-4.2A	-	70	85	m
Forward Transconductance	<b>g</b> fs	V <sub>DS</sub> =-15V,I <sub>D</sub> =-4.5A	4	7	-	S
Dynamic Characteristics (Note4)			_	I		
Input Capacitance	Clss		-	540	-	PF
Output Capacitance	Coss	V <sub>DS</sub> =-15V,V <sub>GS</sub> =0V,	-	150	-	PF
Reverse Transfer Capacitance	Crss	- F=1.0MHZ	-	75	-	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	td(on)		-	8	-	nS
Turn-on Rise Time	tr	Vpp=-15V ID=-1A	-	14	-	nS
Turn-Off Delay Time	td(off)	V <sub>GS</sub> =-10V,R <sub>GEN</sub> =6	-	18	-	nS
Turn-Off Fall Time	tr		-	10	-	nS
Total Gate Charge	Qg		-	12	-	nC
Gate-Source Charge	Qgs	V <sub>DS</sub> =-15V,I <sub>D</sub> =-5.3A,V <sub>GS</sub> =-	-	2.4	-	nC
Gate-Drain Charge	Q <sub>gd</sub>		-	3.2	-	nC
Drain-Source Diode Characteristics		·				
Diode Forward Voltage (Note 3)	Vsd	V <sub>GS</sub> =0V,I <sub>S</sub> =-5.3A	-	-	-1.2	V

#### Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.

**2.** Surface Mounted on FR4 Board,  $t \le 10$  sec.

**3.** Pulse Test: Pulse Width  $\leq$  300µs, Duty Cycle  $\leq$  2%.

 $\textbf{4.} \ \textbf{Guaranteed by design, not subject to production}$ 



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## **Typical Electrical and Thermal Characteristics**



Figure 1:Switching Test Circuit



t<sub>d(on)</sub> t<sub>d(off)</sub> <del>.</del> 50% 90% V<sub>OUT</sub> **INVERTED** 10% 10% 90% V<sub>IN</sub> 50% 50% 10% **PULSE WIDTH** 

Figure 2:Switching Waveforms





## XBLW APM4953 Dual P-Channel Enhancement Mode MOSFET







Figure 14 Normalized Maximum Transient Thermal Impedance



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## **Package Outline Dimensions**

SOP-8







Symbol	Dimensions I	n Millimeters	Dimensions In Inches		
	Min	Max	Min	Max	
Α	1.350	1.750	0.053	0.069	
Al	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	
с	0.170	0.250	0.007	0.010	
D	4.800	5.000	0.189	0.197	
е	1.270 (BSC)		0.050 (BSC)		
E	5.800	6.200	0.228	0.244	
El	3.800	4.000	0.150	0.157	
L	0.400	1.270	0.016	0.050	
θ	0°	8°	0 °	8°	



Note:

1.Controlling dimension: In millimeters.

2.General tolerance:± 0.05mm.

3. The pad layout is for reference purposes only.



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