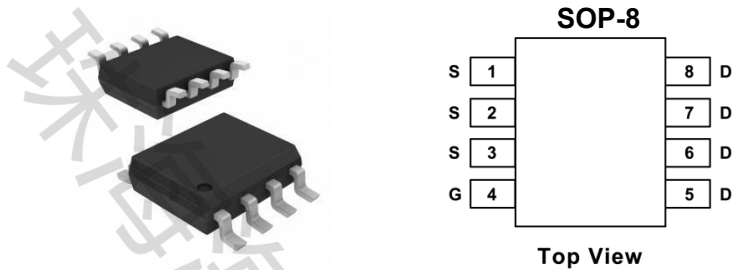


## APM4953KC-TRG-HX

## Dual P-Channel 30-V (D-S) MOSFET

## PRODUCT SUMMARY

V <sub>DS</sub> (V)	R <sub>DS(on)</sub> (Ω)	I <sub>D</sub> (A)
-30	53m@V <sub>GS</sub> = -10V	-4.9
	80m@V <sub>GS</sub> = -4.5V	



## FEATURES

- TrenchFET® Power MOSFET
- Super High Dense Cell Design
- Reliable and Rugged

## APPLICATIONS

- Power Management in Notebook Computer, Portable Equipment and Battery Powered Systems

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

Symbol	Parameter	Rating	Unit
V <sub>DSS</sub>	Drain-Source Voltage	-30	V
V <sub>GSS</sub>	Gate-Source Voltage	±25	
I <sub>D</sub> *	Continuous Drain Current	-4.9	A
I <sub>DM</sub> *	Pulsed Drain Current		
I <sub>S</sub> *	Diode Continuous Forward Current	-20	A
T <sub>J</sub>	Maximum Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature Range	-55 to 150	
P <sub>D</sub> *	Power Dissipation for Single Operation	2	W
		0.8	
R <sub>θJA</sub> *	Thermal Resistance-Junction to Ambient	62.5	°C/W

## Notes

\*Surface Mounted on 1in2 pad area, t ≤ 10sec.

Electrical Characteristics (TA = 25°C unless otherwise noted)						
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
B <sub>VDS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>DS</sub> =250μA	-30			V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =-24V, V <sub>GS</sub> =0V T <sub>J</sub> =85°C			-1 -30	μA
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>DS</sub> =250μA	-1	-1.5	-2	V
I <sub>GS</sub>	Gate Leakage Current	V <sub>GS</sub> =±25V, V <sub>DS</sub> =0V			±100	nA
R <sub>DS(ON)</sub> ①	Drain-Source On-state Resistance	V <sub>GS</sub> =-10V, I <sub>DS</sub> =-4.9A		53	60	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>DS</sub> =-3.6A		80	95	
V <sub>SD</sub> ①	Diode Forward Voltage	I <sub>SD</sub> =-1.7A, V <sub>GS</sub> =0V		-0.7	-1.3	V
<b>Gate Charge Characteristics</b> ②						
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =-15V		22.6	30	nC
Q <sub>gs</sub>	Gate-Source Charge	V <sub>GS</sub> =-10V		4.7		
Q <sub>gd</sub>	Gate-Drain Charge	I <sub>DS</sub> =-4.9A		2		

Electrical Characteristics (TA = 25°C unless otherwise noted)						
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
<b>Dynamic Characteristics</b> ②						
R <sub>G</sub>	Gate Resistance	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, F=1MHz		11		Ω
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> =0V, V <sub>DS</sub> =-25V, Frequency=1.0MHz		1260		pF
C <sub>oss</sub>	Output Capacitance			400		
C <sub>rss</sub>	Reverse Transfer Capacitance			220		
t <sub>d(ON)</sub>	Turn-on Delay Time	V <sub>DD</sub> =-15V, R <sub>L</sub> =15Ω, I <sub>DS</sub> =-1A, V <sub>GEN</sub> =-10V, R <sub>G</sub> =6Ω		10	18	ns
T <sub>r</sub>	Turn-on Rise Time			15	20	
t <sub>d(OFF)</sub>	Turn-off Delay Time			22	38	
T <sub>f</sub>	Turn-off Fall Time			15	25	

**Notes**

① Pulse test ; pulse width≤300μs, duty cycles≤2%.

② Guaranteed by design, not subject to production testing.

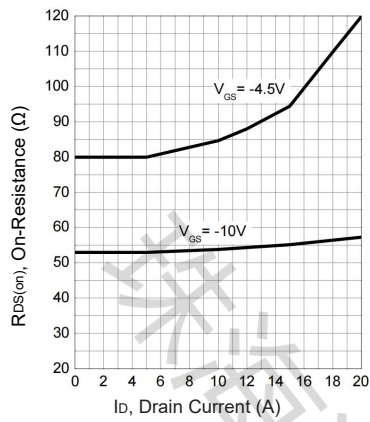


Fig 1. On-Resistance vs. Drain Current

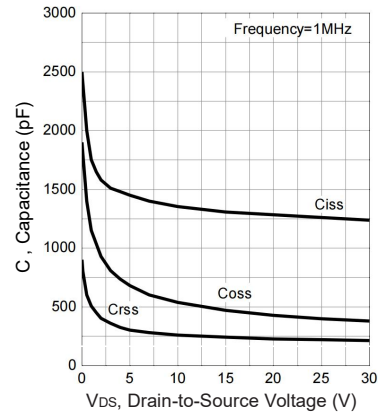


Fig 2. Capacitance

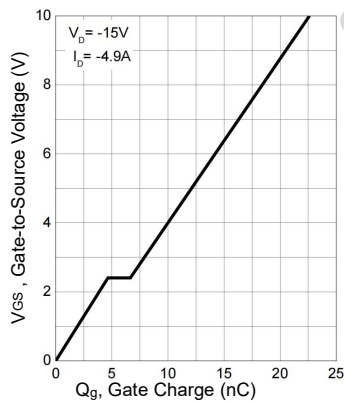


Fig 3. Gate Charge

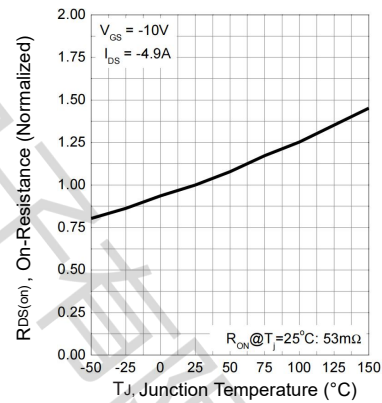


Fig 4. On-Resistance

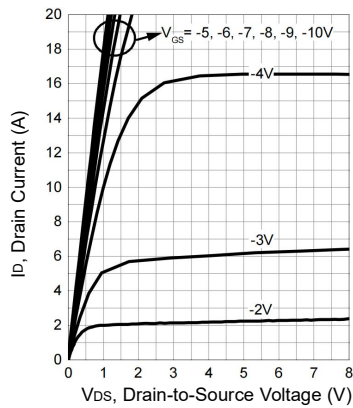


Fig 5. Output Characteristics

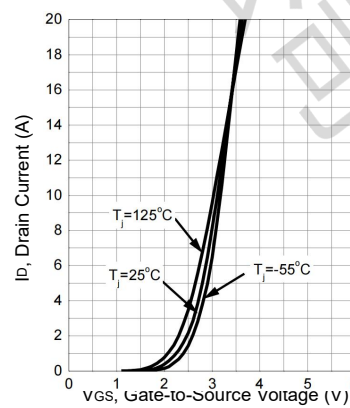


Fig 6. Transfer Characteristics

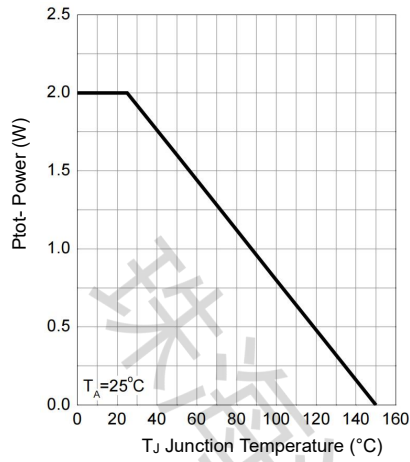


Fig 7. Power Dissipation

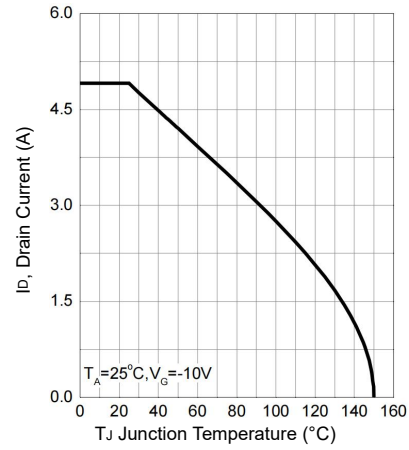


Fig 8. Drain Current

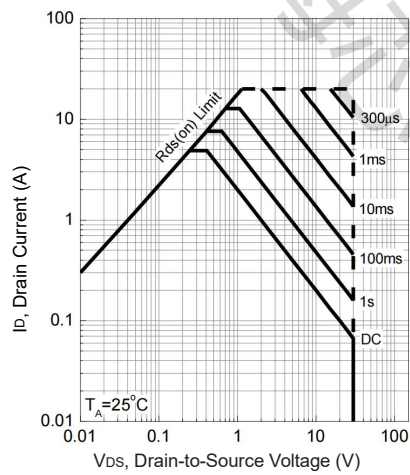


Fig 9. Safe Operating Area,

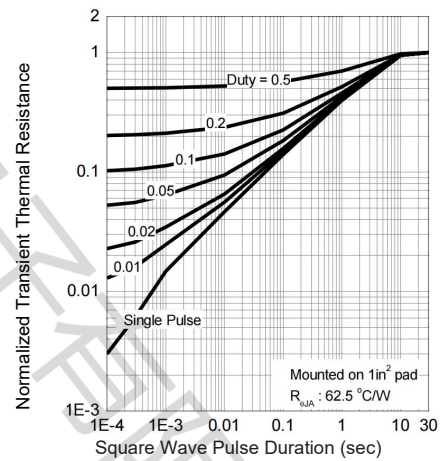


Fig 10. Transient Impedance

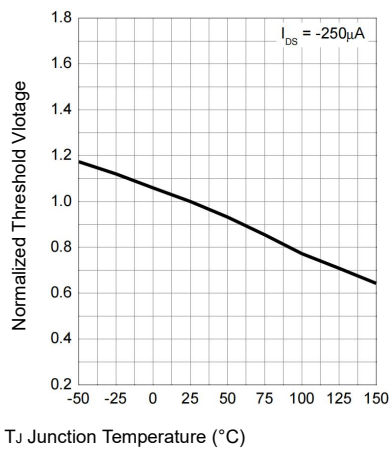


Fig 11. Gate Threshold Voltage

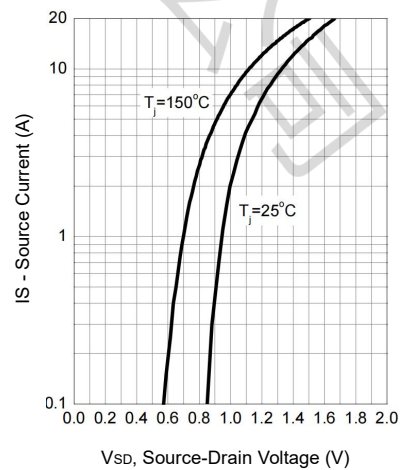
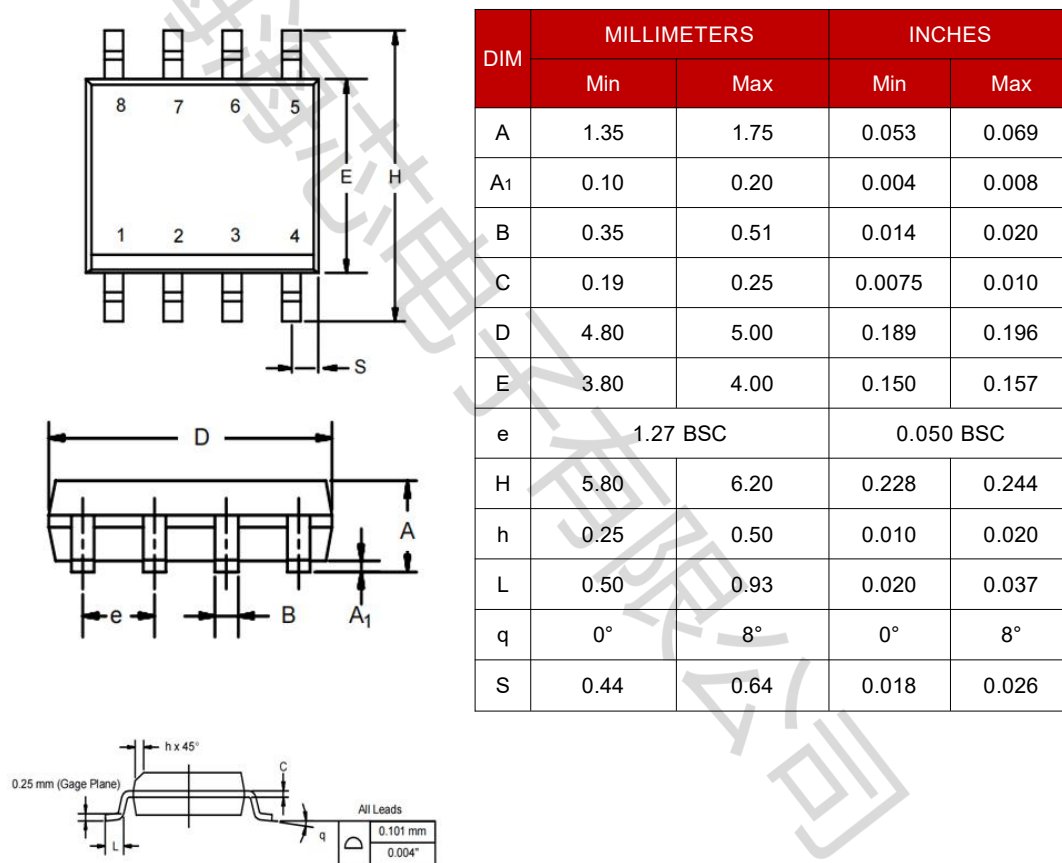


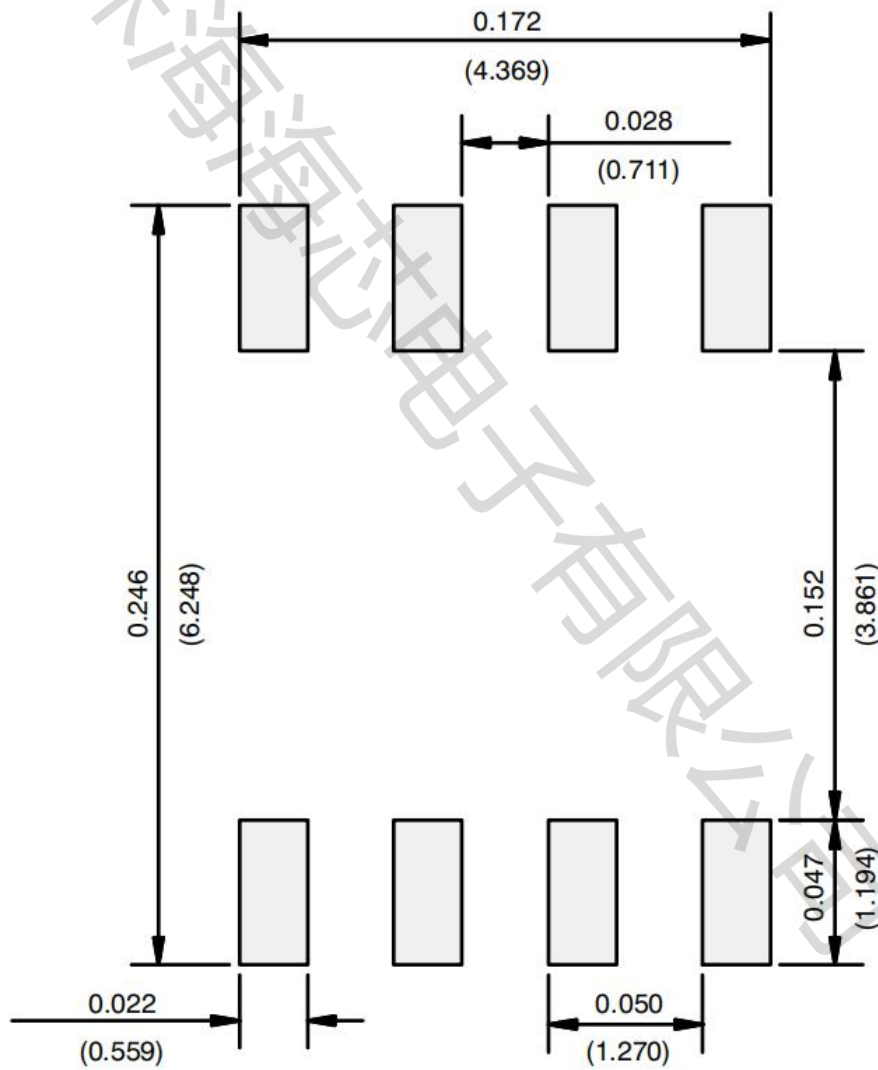
Fig 12. Source-Drain Diode Forward

## SOP-8 Package Outline

Dimensions are shown in millimeters (inches)

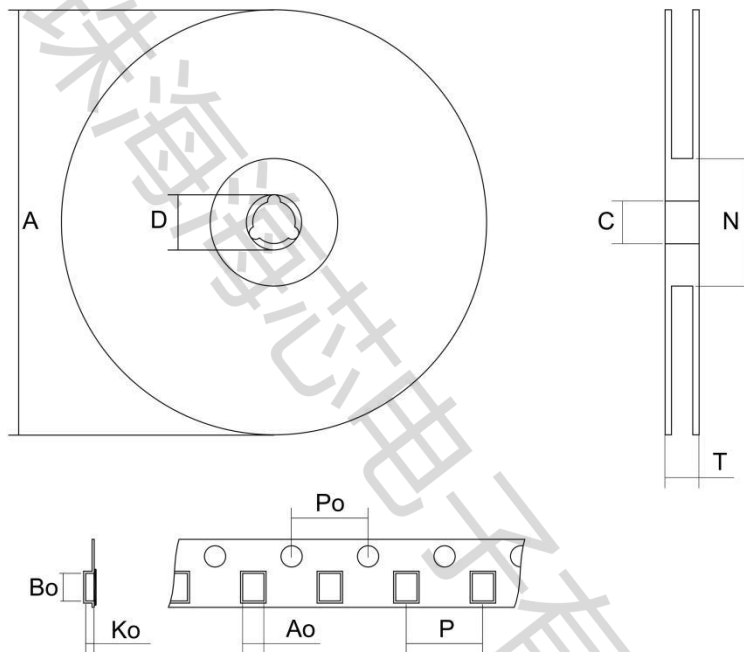


**RECOMMENDED MINIMUM PADS FOR SOP-8**

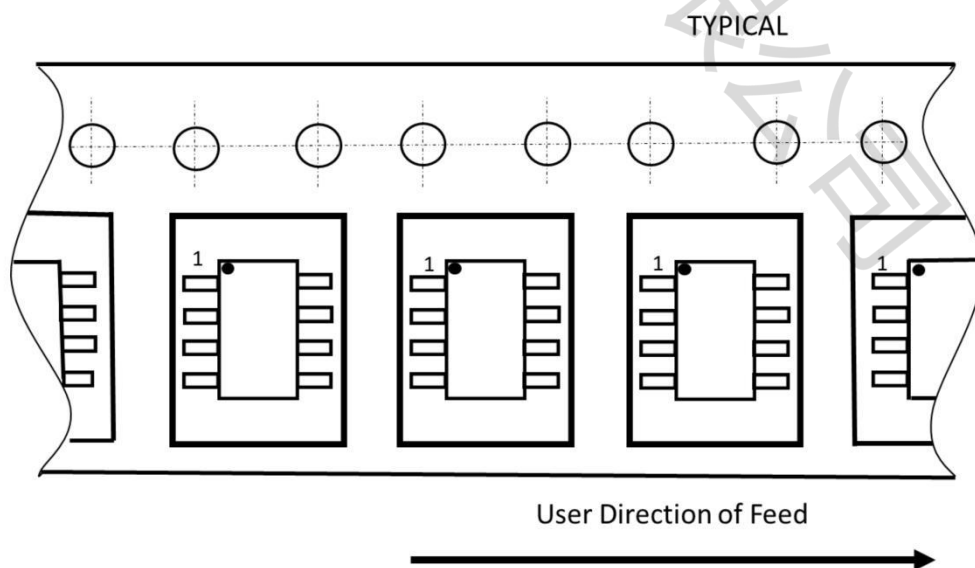


## SOP-8 packing information

### SOP-8 tape and reel



### Tape orientation



## Disclaimer

All products due to improve reliability, function or design or for other reasons, product specifications and data are subject to change without notice.

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