

EVVOSEMI[®]

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

Product Specification

▶ Domestic	Part Number	APM4953
▶ Overseas	Part Number	APM4953
▶ Equivalent	Part Number	APM4953

EV is the abbreviation of name EVVO

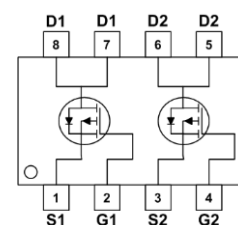
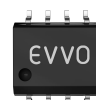
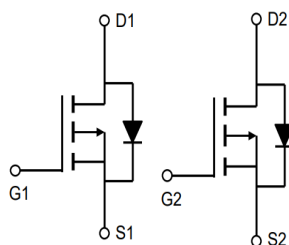
-30V P+P-Channel Enhancement Mode MOSFET

General Description

The APM4953 is the highest performance trench N-ch MOSFETs with extreme high cell density, which provide excellent R_{DS(ON)} and gate charge for most of the small power switching and load switch applications. The meet the RoHS and Product requirement with full function reliability approved.

Application

Battery protection
 Load switch
 Uninterruptible power supply



Package Marking and Ordering Information

Product ID	Package	Marking	QTY(PCS)	Packing method
APM4953	SOP-8L	EVVO APM4953	3000	Reel

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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	-30	V
Gate-Source Voltage	V _{GS}	±20	V
Drain Current-Continuous	I _D	-5.0	A
Drain Current-Pulsed (Note 1)	I _{DM}	-20	A
Maximum Power Dissipation	P _D	2.6	W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 To 150	°C
Thermal Resistance, Junction-to-Ambient (Note 2)	R _{θJA}	49	°C/W

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Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
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 (Note 3)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} ,I _D =-250μA	-1	-1.6	-3	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-4.5A	42	-	56	m
		V _{GS} =-4.5V, I _D =-3.0A	53	-	74	m
Forward Transconductance	g _{FS}	V _{DS} =-15V,I _D =-4.5A	4	7	-	S
Dynamic Characteristics (Note4)						
Input Capacitance	C _{iss}	V _{DS} =-15V,V _{GS} =0V, F=1.0MHz	-	500	-	PF
Output Capacitance	C _{oss}		-	150	-	PF
Reverse Transfer Capacitance	C _{rss}		-	75	-	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	t _{d(on)}	V _{DD} =-15V, I _D =-1A, V _{GS} =-10V,R _{GEN} =6	-	8	-	nS
Turn-on Rise Time	t _r		-	14	-	nS
Turn-Off Delay Time	t _{d(off)}		-	18	-	nS
Turn-Off Fall Time	t _f		-	10	-	nS
Total Gate Charge	Q _g	V _{DS} =-15V,I _D =-6.5A,V _{GS} =-10V	-	12	-	nC
Gate-Source Charge	Q _{gs}		-	2.4	-	nC
Gate-Drain Charge	Q _{gd}		-	3.2	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V _{SD}	V _{GS} =0V,I _S =-6.5A	-	-	-1.2	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production

Typical Electrical and Thermal Characteristics

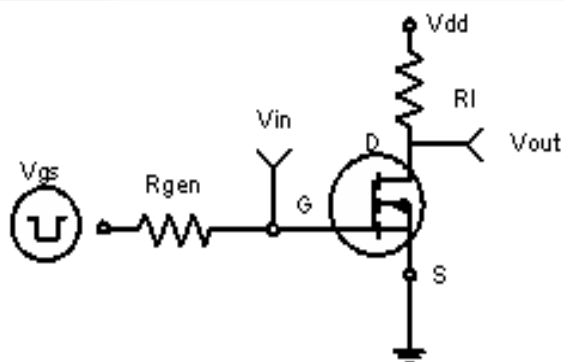


Figure 1: Switching Test Circuit

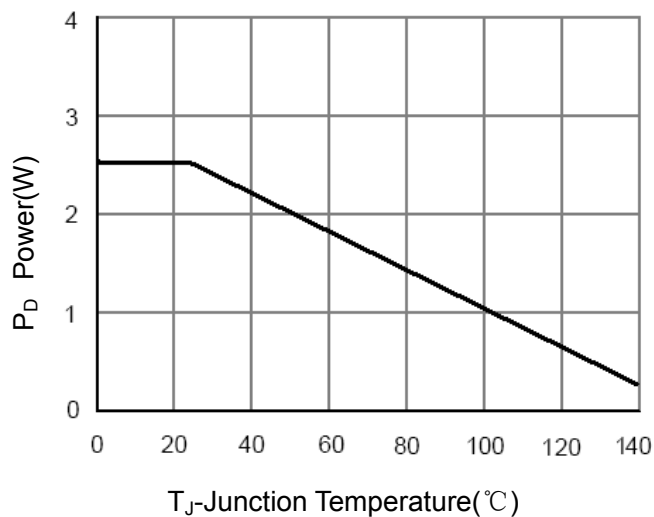


Figure 3 Power Dissipation

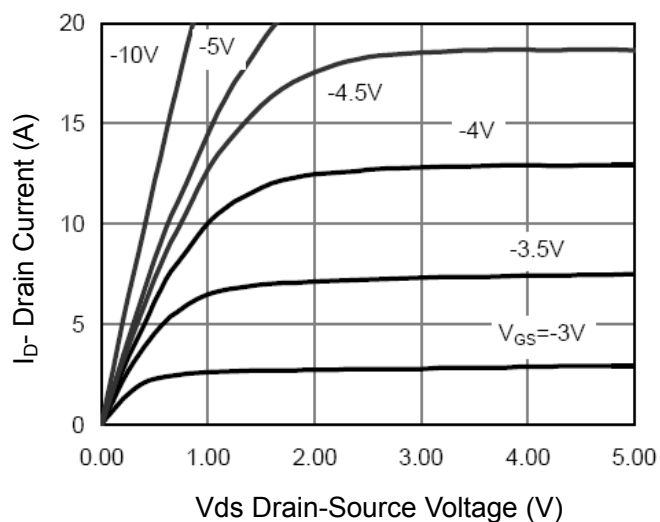


Figure 5 Output Characteristics

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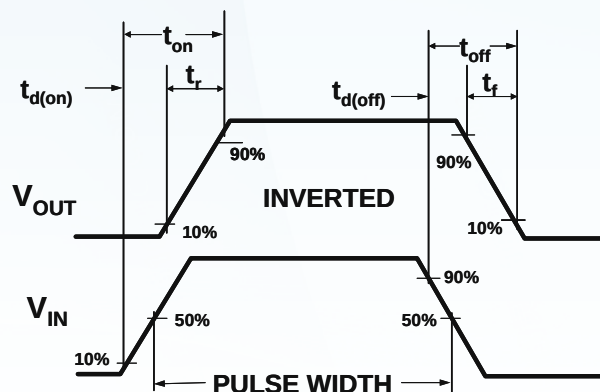


Figure 2: Switching Waveforms

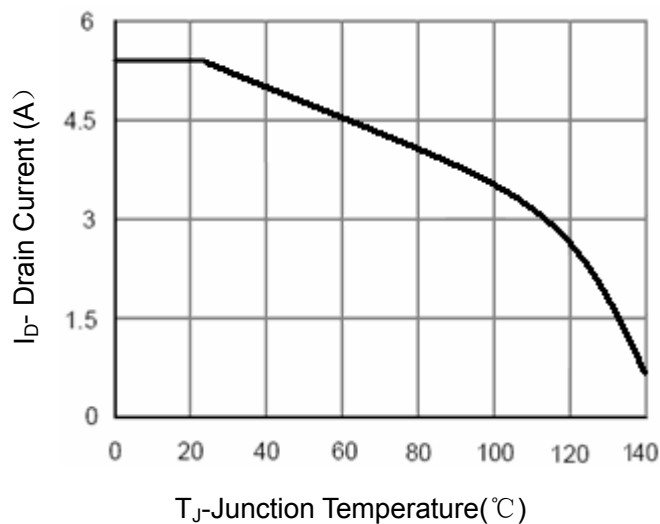


Figure 4 Drain Current

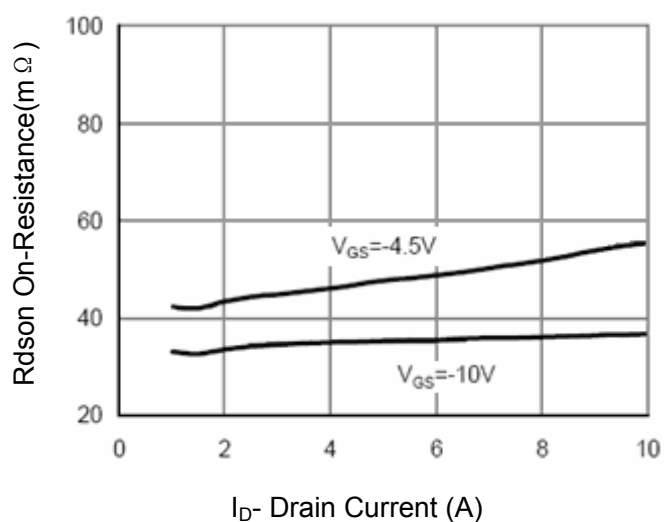


Figure 6 Drain-Source On-Resistance

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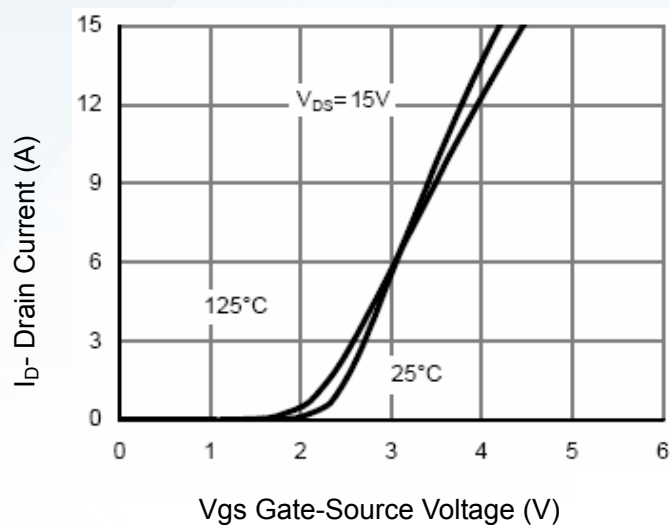


Figure 7 Transfer Characteristics

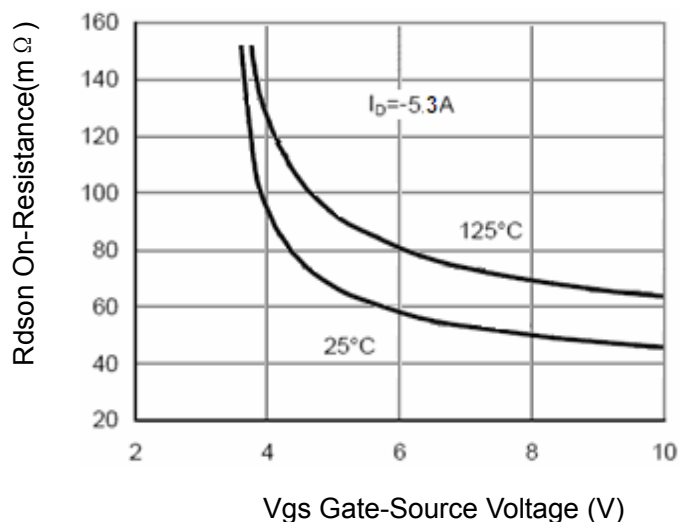


Figure 9 Rdson vs Vgs

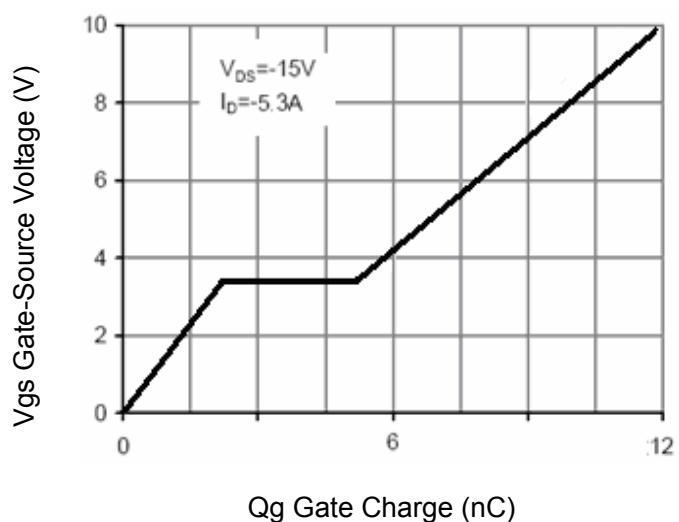


Figure 11 Gate Charge

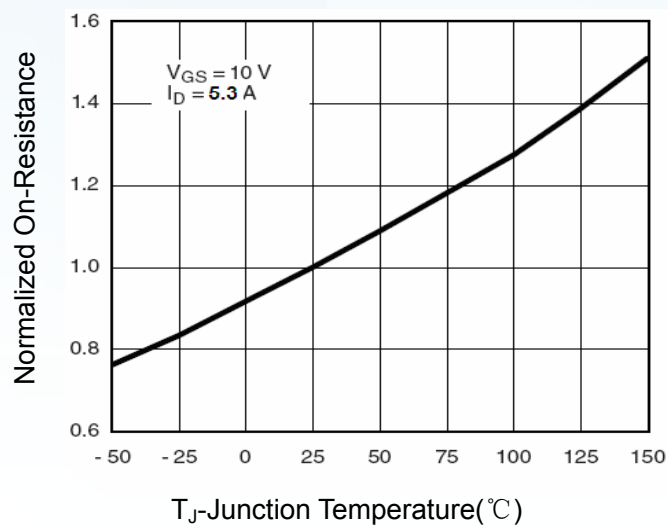


Figure 8 Drain-Source On-Resistance

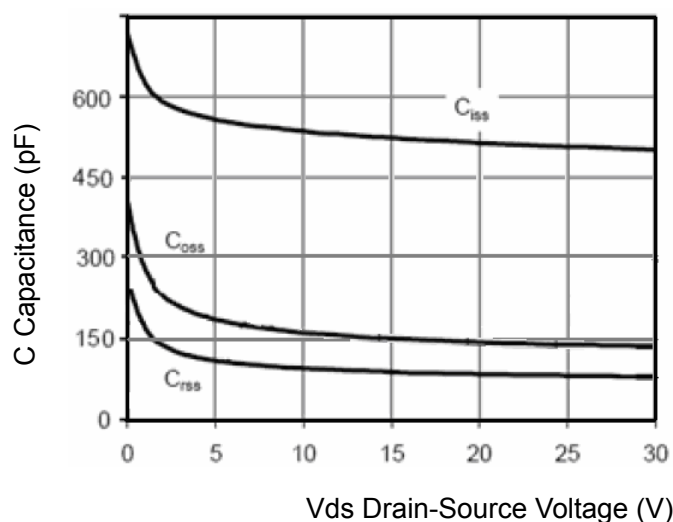


Figure 10 Capacitance vs Vds

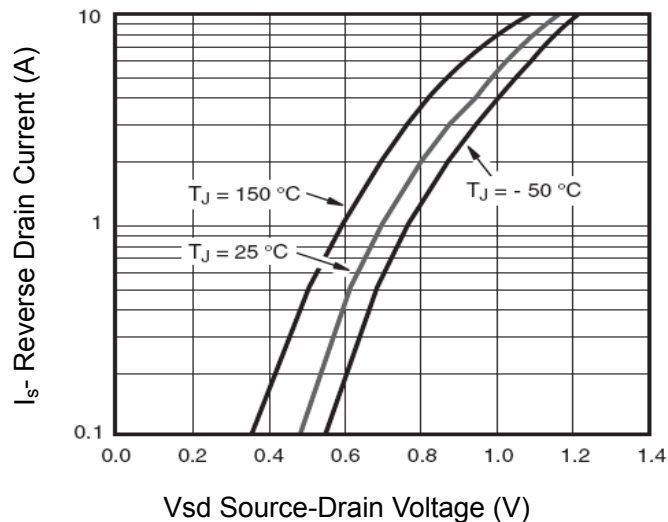
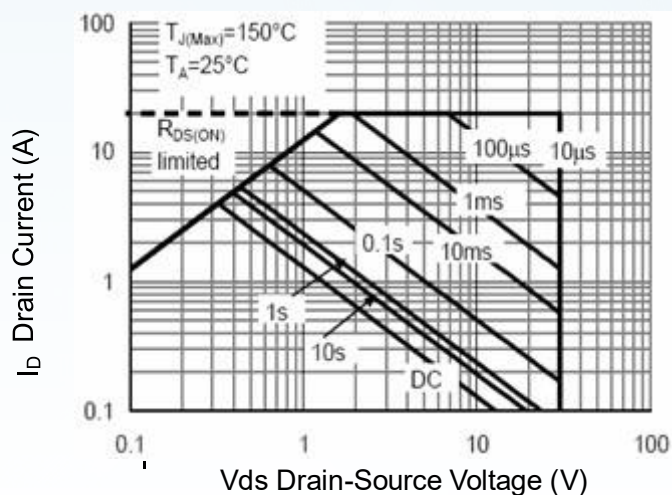
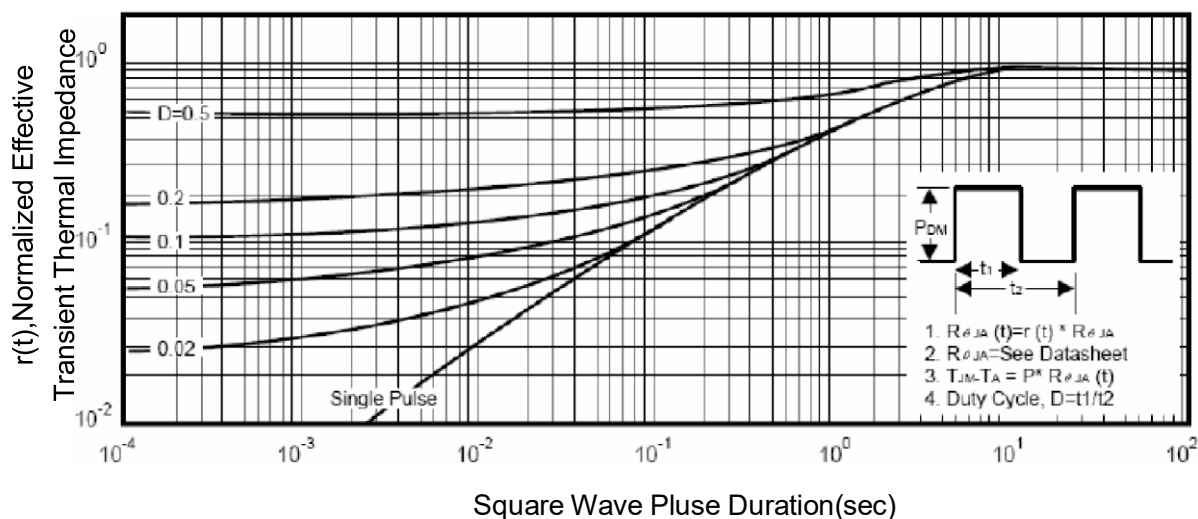
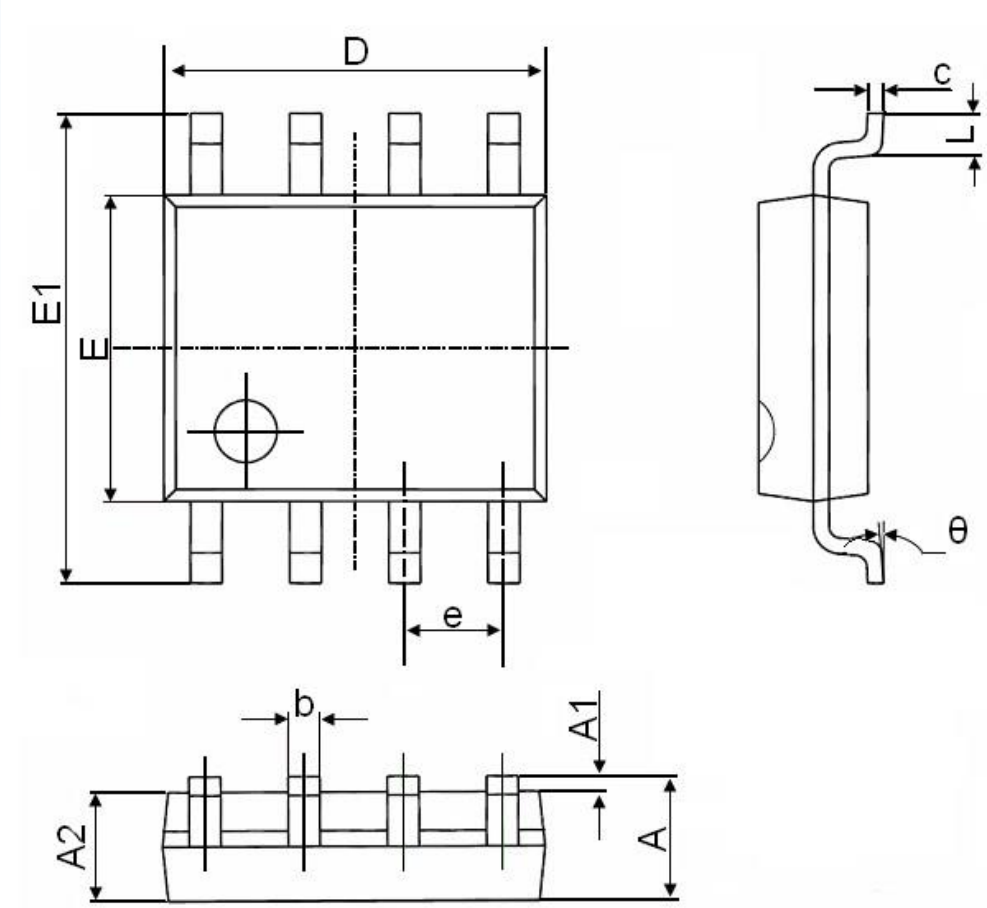


Figure 12 Source- Drain Diode Forward

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Figure 13 Safe Operation Area

Figure 14 Normalized Maximum Transient Thermal Impedance

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SOP8 PACKAGE INFORMATION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	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
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050

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