



AiP4953

Dual P-Channel Enhancement Mode

MOSFET

Product Specification

Specification Revision History:

Version	Data	Description
2012-08-A1	2012-08	New
2019-04-A2	2019-04	Replace the new template
2019-12-A3	2019-12	Add Ordering Information
2021-12-A4	2021-12	Modify Ordering Information



1、Applications

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

Features:

- -30V/-4.9A ,
 $R_{DS(ON)}=53m\Omega(\text{typ.}) @ V_{GS}=-10V$
 $R_{DS(ON)}=80m\Omega(\text{typ.}) @ V_{GS}=-4.5V$
- Super High Dense Cell Design
- Reliable and Rugged
- Lead Free and Green Devices Available (RoHS Compliant)
- Packaging information: SOP8

Ordering Information:

Tube packing specifications:

Part number	Packaging form	Marking code	Tube quantity	Boxed tube quantity	Boxed quantity	Notes
AiP4953SA8.TB	SOP8	AiP4953	100 PCS/tube	100 tube/box	10000 PCS/box	Dimensions of plastic enclosure: 4.9mm×3.9mm Pin spacing: 1.27mm

Reel packing specifications:

Part number	Packaging form	Marking code	Reel quantity	Boxed reel quantity	Notes
AiP4953SA8.TR	SOP8(1)	AiP4953	4000 PCS/reel	8000 PCS/box	Dimensions of plastic enclosure: 4.9mm×3.9mm Pin spacing: 1.27mm
AiP4953SA8.TR	SOP8(2)	AiP4953	2500 PCS/reel	5000 PCS/box	Dimensions of plastic enclosure: 4.9mm×3.9mm Pin spacing: 1.27mm

Note: If the physical information is inconsistent with the ordering information, please refer to the actual product.



2、Block Diagram And Pin Description

2.1、Pin Configurations

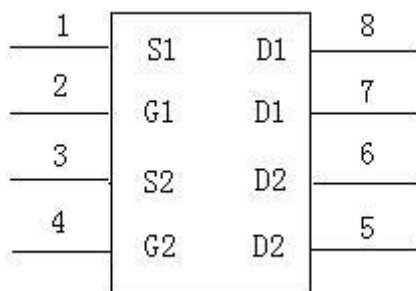


Fig.1 Pin Configurations

2.2、Block Diagram

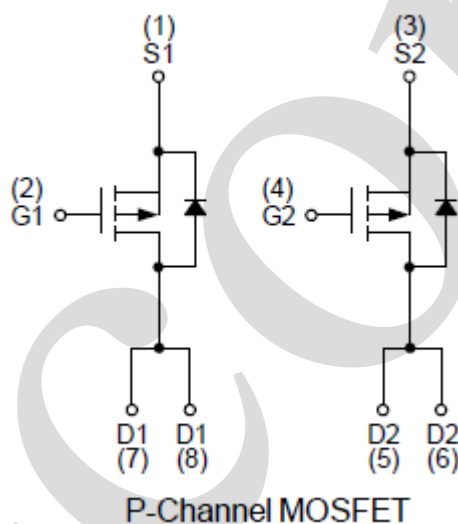


Fig.2 Block Diagram



3、Electrical Parameter

3.1、Absolute Maximum Ratings

(T_{amb}=25℃, All voltage referenced to V_{ss}, unless otherwise specified.)

Characteristic	Symbol	Conditions	Rating	Unit
Drain-Source Voltage	V _{DSS}	-	-30	V
Gate-Source Voltage	V _{GSS}	-	±25	V
Continuous Drain Current	I _D *	V _{GS} =-10V	-4.9	A
Pulsed Drain Current	I _{DM} *	V _{GS} =-10V	-20	A
Diode Continuous Forward Current	I _S *	-	-2	A
Maximum Junction Temperature	T _J	-	150	℃
Storage Temperature Range	T _{stg}	-	-55 to 150	℃
Power Dissipation for Single Operation	P _D *	T _{amb} =25℃	2	W
		T _{amb} =100℃	0.8	
Thermal Resistance-Junction to Ambient	R _{JA} *	-	62.5	℃/W

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

3.2、Electrical Characteristics

3.2.1、DC Characteristics

(T_{amb}=25℃, unless otherwise specified.)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _{DS} = 250uA	-30	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -24V, V _{GS} = 0V	-	-	-1	uA
		T _J = 85℃	-	-	-30	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _{DS} = 250uA	-1	-1.5	-2	V
Gate Leakage Current	I _{GSS}	V _{GS} = ±25V, V _{DS} = 0V	-	-	±100	nA
Drain-Source On-state Resistance	R _{DS(ON)} ^a	V _{GS} = -10V, I _{DS} = -4.9A	-	53	60	mΩ
		V _{GS} = -4.5V, I _{DS} = -3.6A	-	80	95	
Diode Forward Voltage	V _{SD} ^a	I _{SD} = -1.7A, V _{GS} = 0V	-	-0.8	-1.3	V
Gate Charge Characteristics^b						
Total Gate Charge	Q _g	V _{DS} = -15V, V _{GS} = -10V, I _{DS} = -4.9A	-	11.6	16	nC
Gate-Source Charge	Q _{gs}		-	1.3	-	
Gate-Drain Charge	Q _{gd}		-	2.5	-	



3.2.2、AC Characteristics

($T_{amb}=25^{\circ}\text{C}$, unless otherwise specified.)

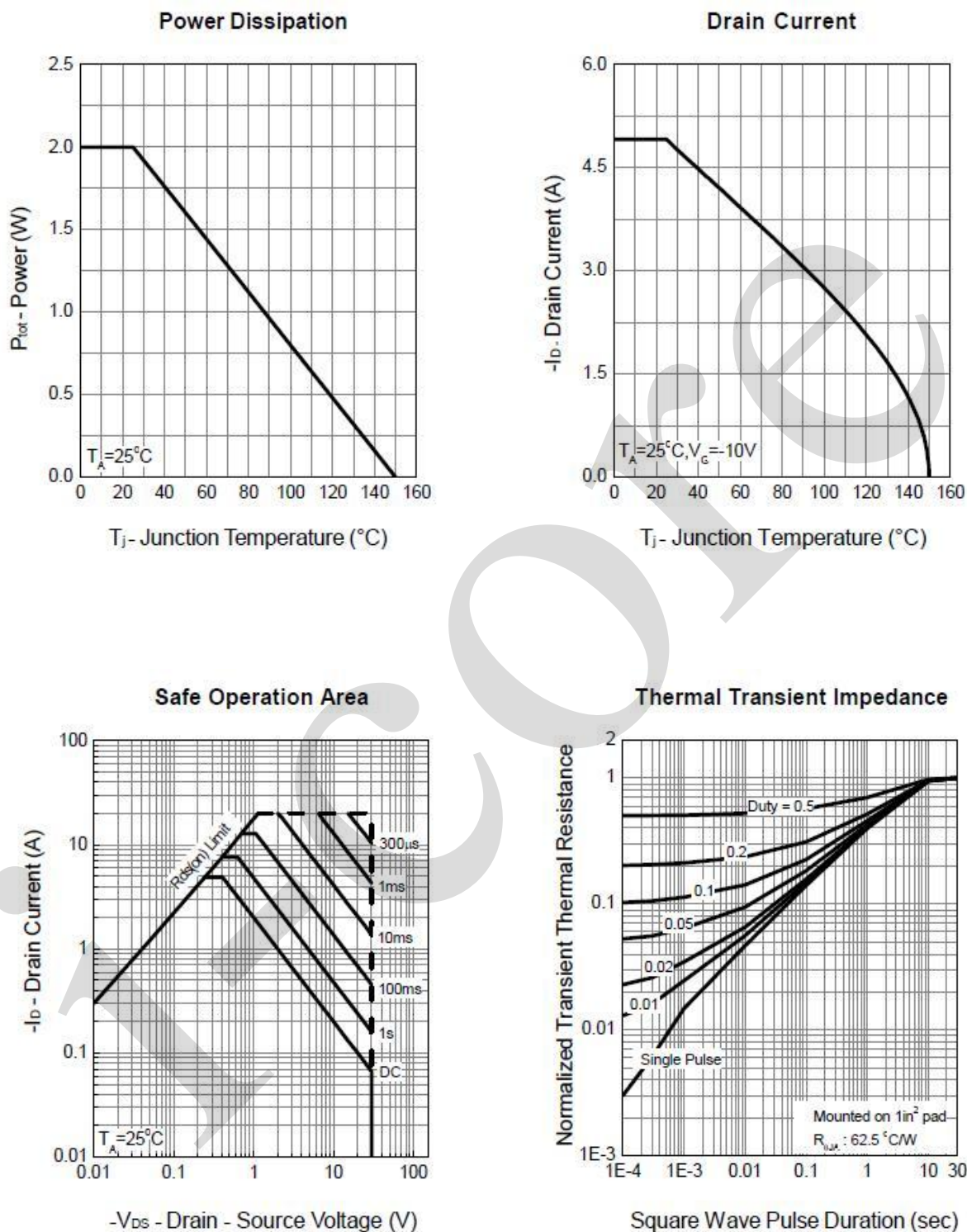
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Gate Resistance	R_G	$V_{GS}=0\text{V}, V_{DS}=0\text{V}, F=1\text{MHz}$	-	8	-	Ω
Input Capacitance	C_{iss}	$V_{GS}=0\text{V},$ $V_{DS}=-15\text{V},$ Frequency =1.0MHz	-	625	-	pF
Output Capacitance	C_{oss}		-	100	-	
Reverse Transfer Capacitance	C_{rss}		-	60	-	
Turn-on Delay Time	$t_{d(ON)}$	$V_{DD}=-15\text{V}, R_L=15\text{W},$ $I_{DS}=-1\text{A}, V_{GEN}=-10\text{V},$ $R_G=6\Omega$	-	6	12	ns
Turn-on Rise Time	t_r		-	12	23	
Turn-off Delay Time	$t_{d(OFF)}$		-	25	46	
Turn-off Fall Time	t_f		-	6	12	
Reverse Recovery Time	t_{rr}	$I_{DS}=-4.9\text{A},$ $dl_{SD}/dt=100\text{A/us}$	-	14	-	ns
Reverse Recovery Charge	Q_{rr}		-	5	-	nC

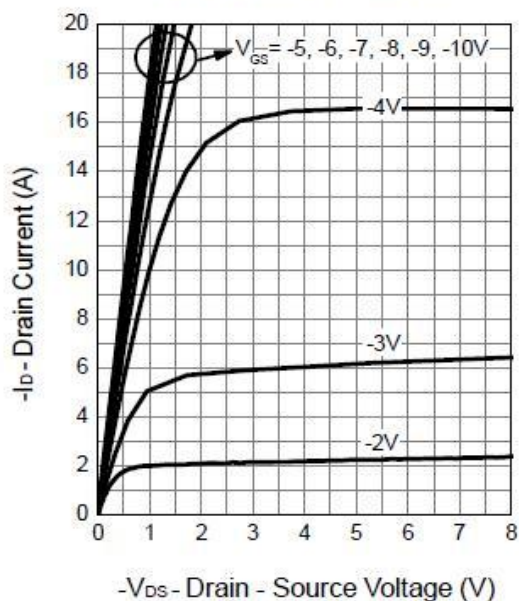
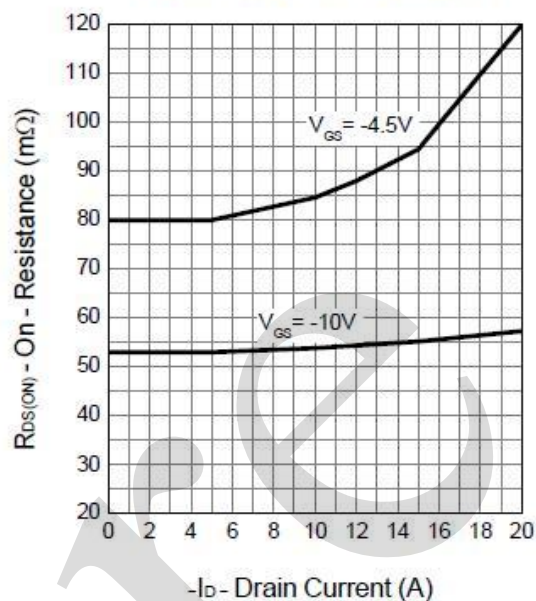
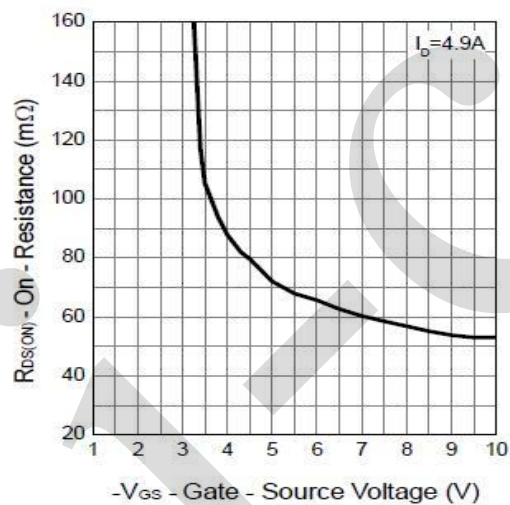
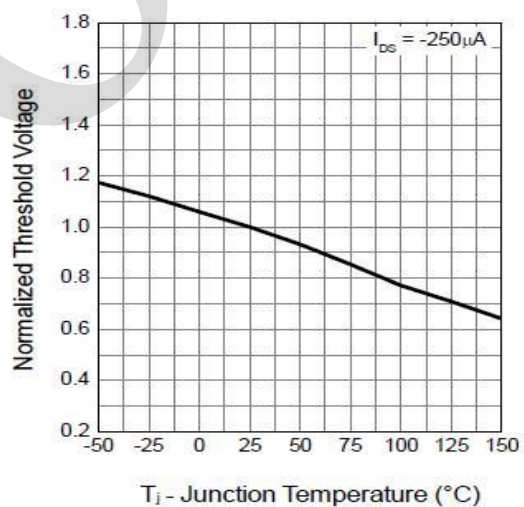
Note :

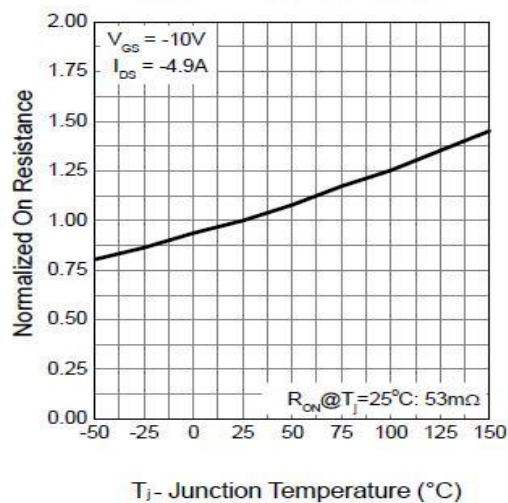
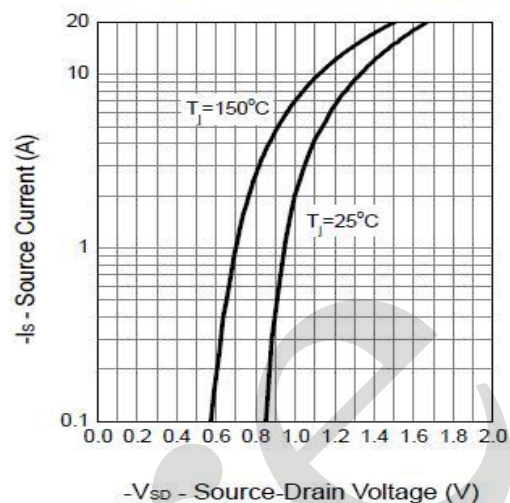
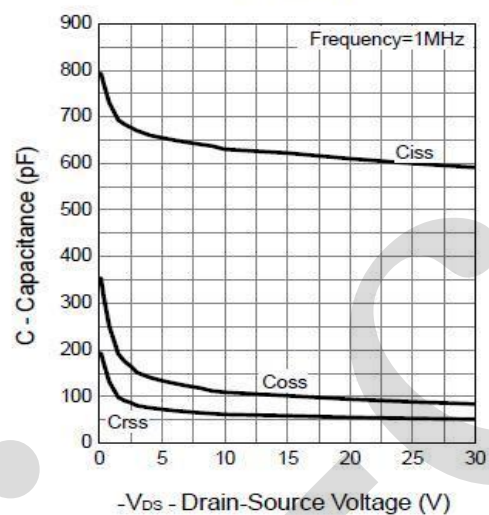
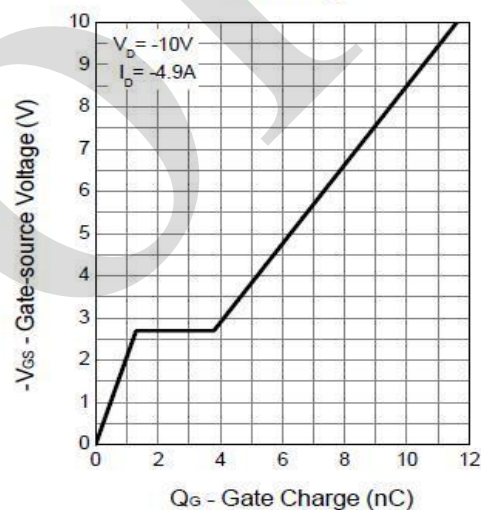
- Pulse test ; pulse width $\leq 300\text{ms}$, duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production testing.



4、Characteristic Curve



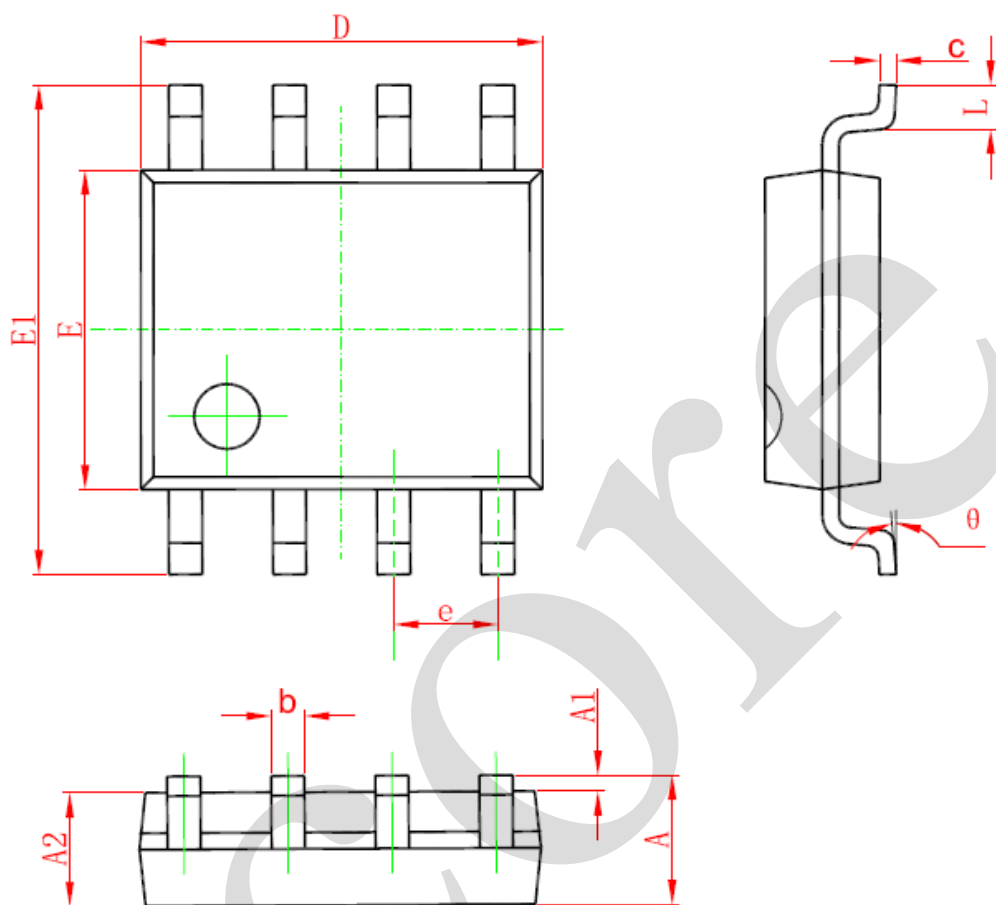
**Output Characteristics****Drain-Source On Resistance****Drain-Source On Resistance****Gate Threshold Voltage**

**Drain-Source On Resistance****Source-Drain Diode Forward****Capacitance****Gate Charge**



5、Package Information

5.1、SOP8



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
θ	0°	8°	0°	8°



6、Statements And Notes

6.1、The name and content of Hazardous substances or Elements in the product

Part name	Hazardous substances or Elements									
	Lead and lead compounds	Mercury and mercury compounds	Cadmium and cadmium compounds	Hexavalent chromium compounds	Polybrominated biphenyls	Polybrominated biphenyl ethers	Dibutyl phthalate	Butylbenzyl phthalate	Di-2-ethylhexyl phthalate	Diisobutyl phthalate
Lead frame	○	○	○	○	○	○	○	○	○	○
Plastic resin	○	○	○	○	○	○	○	○	○	○
Chip	○	○	○	○	○	○	○	○	○	○
The lead	○	○	○	○	○	○	○	○	○	○
Plastic sheet installed	○	○	○	○	○	○	○	○	○	○
explanation	○: Indicates that the content of hazardous substances or elements in the detection limit of the following the SJ/T11363-2006 standard. ×: Indicates that the content of hazardous substances or elements exceeding the SJ/T11363-2006 Standard limit requirements.									

6.2、Notion

Recommended carefully reading this information before the use of this product;

The information in this document are subject to change without notice;

This information is using to the reference only, the company is not responsible for any loss;

The company is not responsible for the any infringement of the third party patents or other rights of the responsibility.