



AiP74LVC1G66 Bilateral Switch

Product Specification

Specification Revision History:

Version	Date	Description
2022-10-A1	2022-10	New
2023-11-A2	2023-11	Internal structure block diagram modified
2026-07-A3	2026-07	Add XSON6 package form; update package information



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1、General Description

The AiP74LVC1G66 provides one single pole, single-throw analog switch function. It has two input/output terminals (Y and Z) and an active HIGH enable input pin (E). When E is LOW, the analog switch is turned off.

Features:

- Wide supply voltage range from 1.65 V to 5.5 V
- Very low ON resistance:
- Switch current capability of 32 mA
- CMOS low power consumption
- Specified from -40℃ to +125℃
- Packaging information: SOT23-5/SOT353/XSON6

Ordering Information:

Reel packing specifications:

Part number	Packaging form	Marking code	Reel quantity	Boxed reel quantity	Notes
AiP74LVC1G66GB235.TR	SOT23-5	DRXX	3000 PCS/reel	30000 PCS/box	Dimensions of plastic enclosure: 2.9mm×1.6mm Pin spacing:0.95mm
AiP74LVC1G66GC353.TR	SOT353	DRXX	3000 PCS/reel	30000 PCS/box	Dimensions of plastic enclosure: 2.1mm×1.3mm Pin spacing:0.65mm
AiP74LVC1G66EA6.TR	XSON6	DR XX	5000 PCS/reel	25000 PCS/box	Dimensions of plastic enclosure: 1.45mm×1.0mm Pin spacing:0.5mm
AiP74LVC1G66ED6.TR	XSON6	DR XX	5000 PCS/reel	25000 PCS/box	Dimensions of plastic enclosure: 1.0mm×1.0mm Pin spacing:0.35mm

Note 1: “XX” refers to variable content, meaning package batch serial number.

Note 2: If the physical information is inconsistent with the ordering information, please refer to the actual product.



2、Block Diagram And Pin Description

2.1、Block Diagram

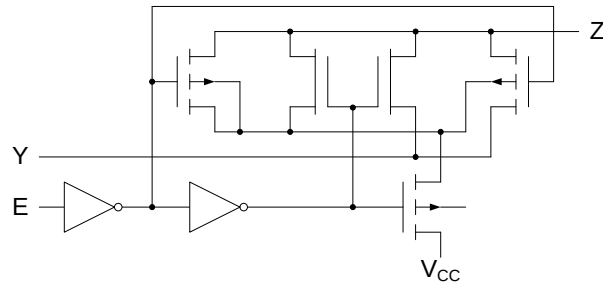
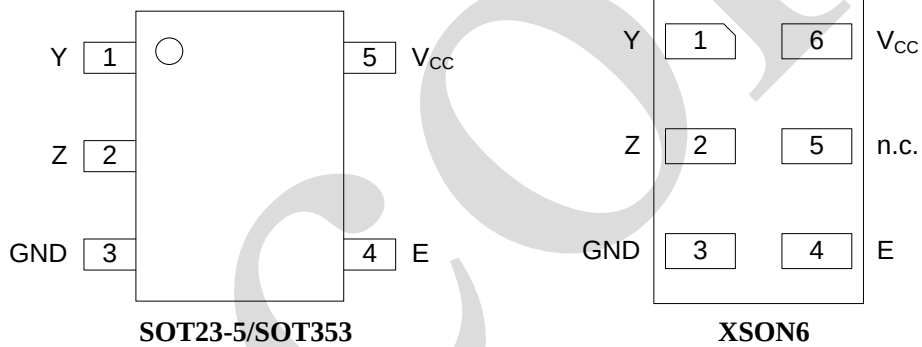


Figure 3. Logic diagram

2.2、Pin Configurations



2.3、Pin Description

Pin No.		Pin Name	Description
SOT23-5/SOT353	XSON6		
1	1	Y	independent input or output
2	2	Z	independent output or input
3	3	GND	ground (0V)
4	4	E	enable input (active HIGH)
-	5	n.c.	not connected
5	6	V _{CC}	supply voltage



2.4、Function Table

Input E	Switch
L	OFF-state
H	ON-state

Note: H=HIGH voltage level; L=LOW voltage level.

3、Electrical Parameter

3.1、Absolute Maximum Ratings

($T_{amb}=25^{\circ}\text{C}$, voltages are referenced to GND (ground=0V), unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Max.	Unit
supply voltage	V_{CC}	-	-0.5	+6.5	V
input clamping current	I_{IK}	$V_I < -0.5\text{V}$ or $V_I > V_{CC} + 0.5\text{V}$	-50	-	mA
input voltage	V_I	-	-0.5	+6.5	V
switch clamping current	I_{SK}	$V_I < -0.5\text{V}$ or $V_I > V_{CC} + 0.5\text{V}$	-50	-	mA
switch voltage	V_{SW}	enable and disable mode	-0.5	$V_{CC} + 0.5$	V
switch current	I_{SW}	$V_{SW} > -0.5\text{V}$ or $V_{SW} < V_{CC} + 0.5\text{V}$	-	± 50	mA
supply current	I_{CC}	-	-	100	mA
ground current	I_{GND}	-	-100	-	mA
storage temperature	T_{stg}	-	-65	+150	$^{\circ}\text{C}$
total power dissipation	P_{tot}	-	-	250	mW
soldering temperature	T_L	10s	260		$^{\circ}\text{C}$

3.2、Recommended Operating Conditions

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
supply voltage	V_{CC}	-	1.65	-	5.5	V
input voltage	V_I	-	0	-	5.5	V
switch voltage	V_{SW}	-	0	-	V_{CC}	V
ambient temperature	T_{amb}	-	-40	-	+125	$^{\circ}\text{C}$



3.3、Electrical Characteristics

3.3.1、DC Characteristics 1

($T_{amb}=-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$, voltages are referenced to GND (ground=0V), unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ. ^[1]	Max.	Unit
HIGH-level input voltage	V_{IH}	$V_{CC}=1.65\text{V}$ to 1.95V	$0.65 \times V_{CC}$	-	-	V
		$V_{CC}=2.3\text{V}$ to 2.7V	1.7	-	-	V
		$V_{CC}=2.7\text{V}$ to 3.6V	2.0	-	-	V
		$V_{CC}=4.5\text{V}$ to 5.5V	$0.7 \times V_{CC}$	-	-	V
LOW-level input voltage	V_{IL}	$V_{CC}=1.65\text{V}$ to 1.95V	-	-	$0.35 \times V_{CC}$	V
		$V_{CC}=2.3\text{V}$ to 2.7V	-	-	0.7	V
		$V_{CC}=2.7\text{V}$ to 3.6V	-	-	0.8	V
		$V_{CC}=4.5\text{V}$ to 5.5V	-	-	$0.3 \times V_{CC}$	V
input leakage current	I_I	pin E; $V_I=5.5\text{V}$ or GND; $V_{CC}=0\text{V}$ to $5.5\text{V}^{[2]}$	-	± 0.1	± 1	μA
OFF-state leakage current	$I_{(S)OFF}$	$V_{CC}=5.5\text{V}$; see Figure 4 ^[2]	-	± 0.1	± 0.2	μA
ON-state leakage current	$I_{(S)ON}$	$V_{CC}=5.5\text{V}$; see Figure 5 ^[2]	-	± 0.1	± 1	μA
supply current	I_{CC}	$V_I=5.5\text{V}$ or GND; $V_{SW}=\text{GND}$ or V_{CC} ; $V_{CC}=1.65\text{V}$ to $5.5\text{V}^{[2]}$	-	0.1	4	μA
additional supply current	ΔI_{CC}	pin E; $V_I=V_{CC}-0.6\text{V}$; $V_{SW}=\text{GND}$ or V_{CC} ; $V_{CC}=5.5\text{V}^{[2]}$	-	5	500	μA
input capacitance	C_I	-	-	2.0	-	pF
OFF-state capacitance	$C_{S(OFF)}$	-	-	6.5	-	pF
ON-state capacitance	$C_{S(ON)}$	-	-	11	-	pF

Note:

[1] All typical values are measured at $T_{amb}=25^{\circ}\text{C}$.

[2] These typical values are measured at $V_{CC}=3.3\text{V}$.



3.3.2、DC Characteristics 2

($T_{amb} = -40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$, voltages are referenced to GND (ground=0V), unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
HIGH-level input voltage	V_{IH}	$V_{CC}=1.65\text{V}$ to 1.95V	$0.65 \times V_{CC}$	-	-	V
		$V_{CC}=2.3\text{V}$ to 2.7V	1.7	-	-	V
		$V_{CC}=2.7\text{V}$ to 3.6V	2.0	-	-	V
		$V_{CC}=4.5\text{V}$ to 5.5V	$0.7 \times V_{CC}$	-	-	V
LOW-level input voltage	V_{IL}	$V_{CC}=1.65\text{V}$ to 1.95V	-	-	$0.35 \times V_{CC}$	V
		$V_{CC}=2.3\text{V}$ to 2.7V	-	-	0.7	V
		$V_{CC}=2.7\text{V}$ to 3.6V	-	-	0.8	V
		$V_{CC}=4.5\text{V}$ to 5.5V	-	-	$0.3 \times V_{CC}$	V
input leakage current	I_I	pin E; $V_I=5.5\text{V}$ or GND; $V_{CC}=0\text{V}$ to $5.5\text{V}^{[1]}$	-	-	± 1	μA
OFF-state leakage current	$I_{(S)OFF}$	$V_{CC}=5.5\text{V}$; see Figure 4 ^[1]	-	-	± 0.5	μA
ON-state leakage current	$I_{(S)ON}$	$V_{CC}=5.5\text{V}$; see Figure 5 ^[1]	-	-	± 2	μA
supply current	I_{CC}	$V_I=5.5\text{V}$ or GND; $V_{SW}=\text{GND}$ or V_{CC} ; $V_{CC}=1.65\text{V}$ to $5.5\text{V}^{[1]}$	-	-	4	μA
additional supply current	ΔI_{CC}	pin E; $V_I=V_{CC}-0.6\text{V}$; $V_{SW}=\text{GND}$ or V_{CC} ; $V_{CC}=5.5\text{V}^{[1]}$	-	-	500	μA

Note:

[1] These typical values are measured at $V_{CC}=3.3\text{V}$.



3.3.3、ON Resistance 1

($T_{amb}=-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$, voltages are referenced to GND (ground=0V), unless otherwise specified)

Parameter	Symbol	Conditions		Min.	Typ. ^[1]	Max.	Unit
ON resistance (peak)	$R_{ON(peak)}$	$V_I=\text{GND to } V_{CC};$ see Figure 6	$I_{SW} = 4\text{ mA};$ $V_{CC}=1.65\text{V to } 1.95\text{V}$	-	34.0	130	Ω
			$I_{SW}=8\text{mA};$ $V_{CC}=2.3\text{V to } 2.7\text{V}$	-	12.0	30	Ω
			$I_{SW}=12\text{mA};$ $V_{CC}=2.7\text{V}$	-	10.4	25	Ω
			$I_{SW}=24\text{mA};$ $V_{CC}=3\text{V to } 3.6\text{V}$	-	7.8	20	Ω
			$I_{SW}=32\text{mA};$ $V_{CC}=4.5\text{V to } 5.5\text{V}$	-	6.2	15	Ω
ON resistance (rail)	$R_{ON(rail)}$	$V_I=\text{GND};$ see Figure 6	$I_{SW} = 4\text{ mA};$ $V_{CC}=1.65\text{V to } 1.95\text{V}$	-	8.2	18	Ω
			$I_{SW}=8\text{mA};$ $V_{CC}=2.3\text{V to } 2.7\text{V}$	-	7.1	16	Ω
			$I_{SW}=12\text{mA};$ $V_{CC}=2.7\text{V}$	-	6.9	14	Ω
			$I_{SW}=24\text{mA};$ $V_{CC}=3\text{V to } 3.6\text{V}$	-	6.5	12	Ω
			$I_{SW}=32\text{mA};$ $V_{CC}=4.5\text{V to } 5.5\text{V}$	-	5.8	10	Ω
		$V_I=V_{CC};$ see Figure 6	$I_{SW} = 4\text{ mA};$ $V_{CC}=1.65\text{V to } 1.95\text{V}$	-	10.4	30	Ω
			$I_{SW}=8\text{mA};$ $V_{CC}=2.3\text{V to } 2.7\text{V}$	-	7.6	20	Ω
			$I_{SW}=12\text{mA};$ $V_{CC}=2.7\text{V}$	-	7.0	18	Ω
			$I_{SW}=24\text{mA};$ $V_{CC}=3\text{V to } 3.6\text{V}$	-	6.1	15	Ω
			$I_{SW}=32\text{mA};$ $V_{CC}=4.5\text{V to } 5.5\text{V}$	-	4.9	10	Ω
ON resistance (flatness)	$R_{ON(flatness)}$	$V_I=\text{GND to } V_{CC}^{[2]}$	$I_{SW} = 4\text{ mA};$ $V_{CC}=1.65\text{V to } 1.95\text{V}$	-	26.0	-	Ω
			$I_{SW}=8\text{mA};$ $V_{CC}=2.3\text{V to } 2.7\text{V}$	-	5.0	-	Ω
			$I_{SW}=12\text{mA};$ $V_{CC}=2.7\text{V}$	-	3.5	-	Ω
			$I_{SW}=24\text{mA};$ $V_{CC}=3\text{V to } 3.6\text{V}$	-	2.0	-	Ω
			$I_{SW}=32\text{mA};$ $V_{CC}=4.5\text{V to } 5.5\text{V}$	-	1.5	-	Ω

Note:

[1] Typical values are measured at $T_{amb}=25^{\circ}\text{C}$ and nominal V_{CC} .

[2] Flatness is defined as the difference between the maximum and minimum value of ON resistance



measured at identical V_{CC} and temperature.

3.3.4、ON Resistance 2

($T_{amb}=-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$, voltages are referenced to GND (ground=0V), unless otherwise specified)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
ON resistance (peak)	$R_{ON(peak)}$	$V_I=\text{GND to } V_{CC};$ see Figure 6	$I_{SW} = 4 \text{ mA};$ $V_{CC}=1.65\text{V to } 1.95\text{V}$	-	-	195	Ω
			$I_{SW}=8\text{mA};$ $V_{CC}=2.3\text{V to } 2.7\text{V}$	-	-	45	Ω
			$I_{SW}=12\text{mA};$ $V_{CC}=2.7\text{V}$	-	-	38	Ω
			$I_{SW}=24\text{mA};$ $V_{CC}=3\text{V to } 3.6\text{V}$	-	-	30	Ω
			$I_{SW}=32\text{mA};$ $V_{CC}=4.5\text{V to } 5.5\text{V}$	-	-	23	Ω
ON resistance (rail)	$R_{ON(rail)}$	$V_I=\text{GND};$ see Figure 6	$I_{SW} = 4 \text{ mA};$ $V_{CC}=1.65\text{V to } 1.95\text{V}$	-	-	27	Ω
			$I_{SW}=8\text{mA};$ $V_{CC}=2.3\text{V to } 2.7\text{V}$	-	-	24	Ω
			$I_{SW}=12\text{mA};$ $V_{CC}=2.7\text{V}$	-	-	21	Ω
			$I_{SW}=24\text{mA};$ $V_{CC}=3\text{V to } 3.6\text{V}$	-	-	18	Ω
			$I_{SW}=32\text{mA};$ $V_{CC}=4.5\text{V to } 5.5\text{V}$	-	-	15	Ω
		$V_I=V_{CC};$ see Figure 6	$I_{SW} = 4 \text{ mA};$ $V_{CC}=1.65\text{V to } 1.95\text{V}$	-	-	45	Ω
			$I_{SW}=8\text{mA};$ $V_{CC}=2.3\text{V to } 2.7\text{V}$	-	-	30	Ω
			$I_{SW}=12\text{mA};$ $V_{CC}=2.7\text{V}$	-	-	27	Ω
			$I_{SW}=24\text{mA};$ $V_{CC}=3\text{V to } 3.6\text{V}$	-	-	23	Ω
			$I_{SW}=32\text{mA};$ $V_{CC}=4.5\text{V to } 5.5\text{V}$	-	-	15	Ω



3.3.5、AC Characteristics 1

($T_{amb}=-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$, voltages are referenced to GND (ground=0V), unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ. ^[1]	Max.	Unit
propagation delay	t_{PHL}, t_{PLH}	Y to Z or Z to Y; see Figure 13 ^[2]				
		$V_{CC}=1.65\text{V to }1.95\text{V}$	-	0.8	2.0	ns
		$V_{CC}=2.3\text{V to }2.7\text{V}$	-	0.4	1.2	ns
		$V_{CC}=2.7\text{V}$	-	0.4	1.0	ns
		$V_{CC}=3.0\text{V to }3.6\text{V}$	-	0.3	0.8	ns
		$V_{CC}=4.5\text{V to }5.5\text{V}$	-	0.2	0.6	ns
enable time	t_{PZH}, t_{PZL}	E to Y or Z; see Figure 14				
		$V_{CC}=1.65\text{V to }1.95\text{V}$	1.0	5.3	12	ns
		$V_{CC}=2.3\text{V to }2.7\text{V}$	1.0	3.0	6.5	ns
		$V_{CC}=2.7\text{V}$	1.0	2.6	6.0	ns
		$V_{CC}=3.0\text{V to }3.6\text{V}$	1.0	2.5	5.0	ns
		$V_{CC}=4.5\text{V to }5.5\text{V}$	1.0	1.9	4.2	ns
disable time	t_{PLZ}, t_{PHZ}	E to Y or Z; see Figure 14				
		$V_{CC}=1.65\text{V to }1.95\text{V}$	1.0	4.2	10	ns
		$V_{CC}=2.3\text{V to }2.7\text{V}$	1.0	2.4	6.9	ns
		$V_{CC}=2.7\text{V}$	1.0	3.6	7.5	ns
		$V_{CC}=3.0\text{V to }3.6\text{V}$	1.0	3.4	6.5	ns
		$V_{CC}=4.5\text{V to }5.5\text{V}$	1.0	2.5	5.0	ns

Note:

[1] Typical values are measured at $T_{amb}=25^{\circ}\text{C}$ and nominal V_{CC} .

[2] Propagation delay is the calculated RC time constant of the typical ON resistance of the switch and the specified capacitance when driven by an ideal voltage source (zero output impedance).



3.3.6、AC Characteristics 2

($T_{amb}=-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$, voltages are referenced to GND (ground=0V), unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
propagation delay	t_{PHL}, t_{PLH}	Y to Z or Z to Y; see Figure 13 ^[1]				
		$V_{CC}=1.65\text{V}$ to 1.95V	-	-	3.0	ns
		$V_{CC}=2.3\text{V}$ to 2.7V	-	-	2.0	ns
		$V_{CC}=2.7\text{V}$	-	-	1.5	ns
		$V_{CC}=3.0\text{V}$ to 3.6V	-	-	1.5	ns
		$V_{CC}=4.5\text{V}$ to 5.5V	-	-	1.0	ns
enable time	t_{PZH}, t_{PZL}	E to Y or Z; see Figure 14				
		$V_{CC}=1.65\text{V}$ to 1.95V	1.0	-	15.5	ns
		$V_{CC}=2.3\text{V}$ to 2.7V	1.0	-	8.5	ns
		$V_{CC}=2.7\text{V}$	1.0	-	8.0	ns
		$V_{CC}=3.0\text{V}$ to 3.6V	1.0	-	6.5	ns
		$V_{CC}=4.5\text{V}$ to 5.5V	1.0	-	5.5	ns
disable time	t_{PLZ}, t_{PHZ}	E to Y or Z; see Figure 14				
		$V_{CC}=1.65\text{V}$ to 1.95V	1.0	-	13	ns
		$V_{CC}=2.3\text{V}$ to 2.7V	1.0	-	9.0	ns
		$V_{CC}=2.7\text{V}$	1.0	-	9.5	ns
		$V_{CC}=3.0\text{V}$ to 3.6V	1.0	-	8.5	ns
		$V_{CC}=4.5\text{V}$ to 5.5V	1.0	-	6.5	ns

Note:

[1] Propagation delay is the calculated RC time constant of the typical ON resistance of the switch and the specified capacitance when driven by an ideal voltage source (zero output impedance).

3.3.7、Additional AC Characteristics

($T_{amb}=25^{\circ}\text{C}$, voltages are referenced to GND (ground=0V), unless otherwise specified)

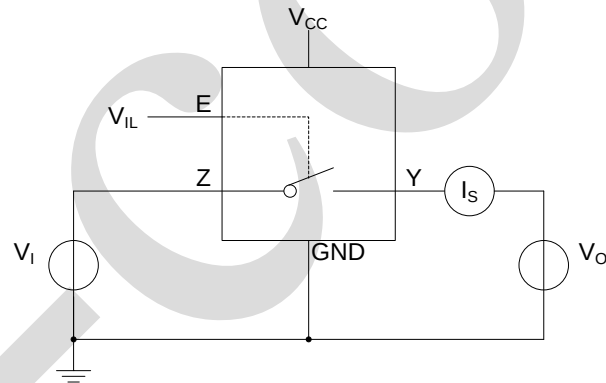
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
total harmonic distortion	THD	$R_L=10\text{k}\Omega$; $C_L=50\text{pF}$; $f_i=1\text{kHz}$; see Figure 7	$V_{CC}=1.65\text{V}$	-	0.032	%
			$V_{CC}=2.3\text{V}$	-	0.008	%
			$V_{CC}=3.0\text{V}$	-	0.006	%
			$V_{CC}=4.5\text{V}$	-	0.001	%
		$R_L=10\text{k}\Omega$; $C_L=50\text{pF}$; $f_i=10\text{kHz}$; see Figure 7	$V_{CC}=1.65\text{V}$	-	0.068	%
			$V_{CC}=2.3\text{V}$	-	0.009	%
			$V_{CC}=3.0\text{V}$	-	0.008	%
			$V_{CC}=4.5\text{V}$	-	0.006	%
-3dB frequency response	$f_{(-3\text{dB})}$	$R_L=600\Omega$; $C_L=50\text{pF}$; see Figure 8	$V_{CC}=1.65\text{V}$	-	135	MHz
			$V_{CC}=2.3\text{V}$	-	145	MHz
			$V_{CC}=3.0\text{V}$	-	150	MHz
			$V_{CC}=4.5\text{V}$	-	155	MHz
		$R_L=50\Omega$; $C_L=5\text{pF}$; see Figure 8	$V_{CC}=1.65\text{V}$	-	>500	MHz
			$V_{CC}=2.3\text{V}$	-	>500	MHz
			$V_{CC}=3.0\text{V}$	-	>500	MHz
			$V_{CC}=4.5\text{V}$	-	>500	MHz
		$R_L=50\Omega$; $C_L=10\text{pF}$; see Figure 8	$V_{CC}=1.65\text{V}$	-	200	MHz
			$V_{CC}=2.3\text{V}$	-	350	MHz



isolation (OFF-state)	α_{iso}	$R_L=600\Omega$; $C_L=50pF$; $f_i=1MHz$; see Figure 9	$V_{CC}=3.0V$	-	410	-	MHz
			$V_{CC}=4.5V$	-	440	-	MHz
			$V_{CC}=1.65V$	-	-46	-	dB
			$V_{CC}=2.3V$	-	-46	-	dB
			$V_{CC}=3.0V$	-	-46	-	dB
			$V_{CC}=4.5V$	-	-46	-	dB
		$R_L=50\Omega$; $C_L=5pF$; $f_i=1MHz$; see Figure 9	$V_{CC}=1.65V$	-	-37	-	dB
			$V_{CC}=2.3V$	-	-37	-	dB
			$V_{CC}=3.0V$	-	-37	-	dB
			$V_{CC}=4.5V$	-	-37	-	dB
crosstalk voltage	V_{ct}	between digital input and switch; $R_L=600\Omega$; $C_L=50pF$; $f_i=1MHz$; $t_r=t_f=2ns$; see Figure 10	$V_{CC}=1.65V$	-	69	-	mV
			$V_{CC}=2.3V$	-	87	-	mV
			$V_{CC}=3.0V$	-	156	-	mV
			$V_{CC}=4.5V$	-	302	-	mV
charge injection	Q_{inj}	$C_L=0.1nF$; $V_{gen}=0V$; $R_{gen}=0\Omega$; $f_i=1MHz$; $R_L=1M\Omega$; see Figure 11	$V_{CC}=1.8V$	-	3.3	-	pC
			$V_{CC}=2.5V$	-	4.1	-	pC
			$V_{CC}=3.3V$	-	5.0	-	pC
			$V_{CC}=4.5V$	-	6.4	-	pC
			$V_{CC}=5.5V$	-	7.5	-	pC

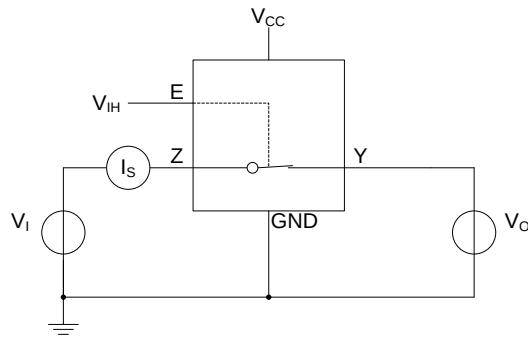
4、Testing Circuit

4.1、DC Testing Circuit



$V_I=V_{CC}$ or GND and $V_O=GND$ or V_{CC} .

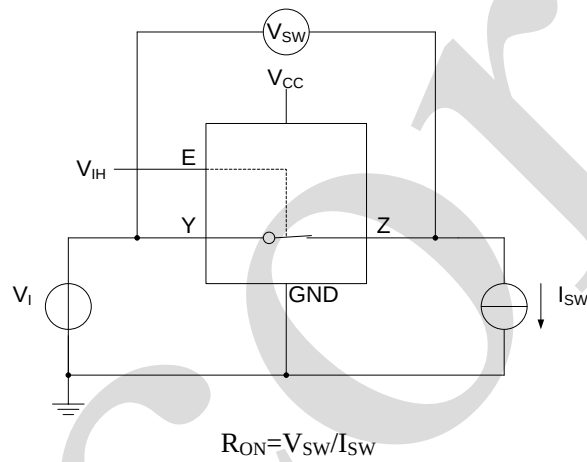
Figure 4. Test circuit for measuring OFF-state leakage current



$V_I = V_{CC}$ or GND and $V_O = \text{open circuit}$.

Figure 5. Test circuit for measuring ON-state leakage current

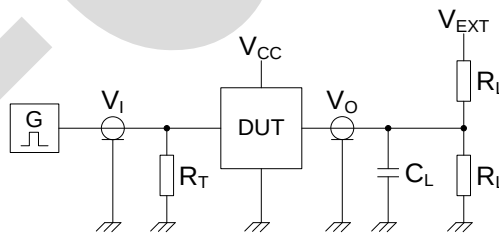
4.2、ON Resistance Test Circuit



$$R_{ON} = V_{SW} / I_{SW}$$

Figure 6. Test circuit for measuring ON resistance

4.3、AC Testing Circuit



Definitions for test circuit:

R_L =Load resistance.

C_L =Load capacitance including jig and probe capacitance.

R_T =Termination resistance should be equal to the output impedance Z_o of the pulse generator.

V_{EXT} =External voltage for measuring switching times.

Figure 7. Test circuit for measuring switching times



4.4、AC Testing Circuit

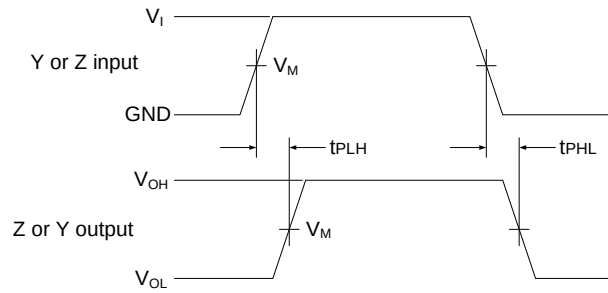


Figure 8. Input (Y or Z) to output (Z or Y) propagation delays

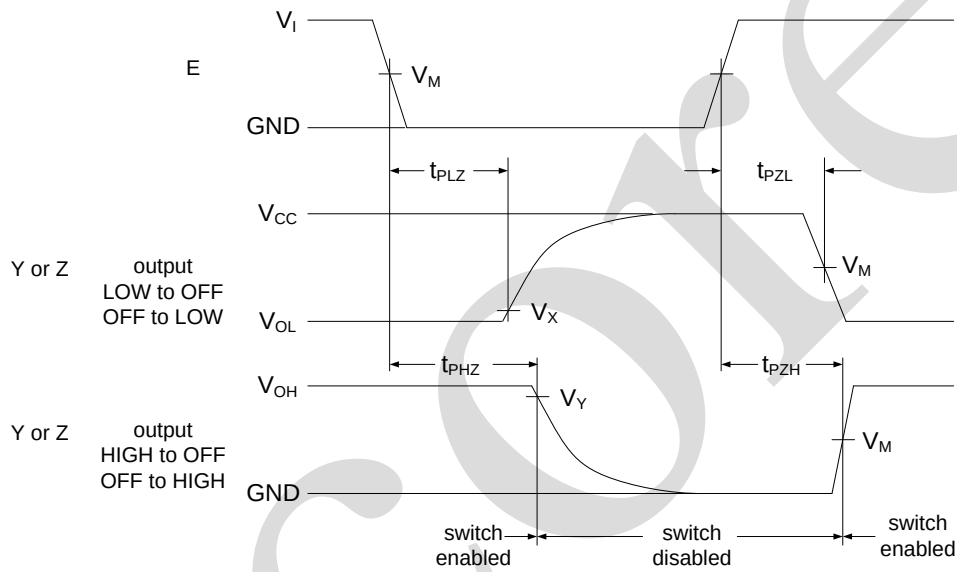
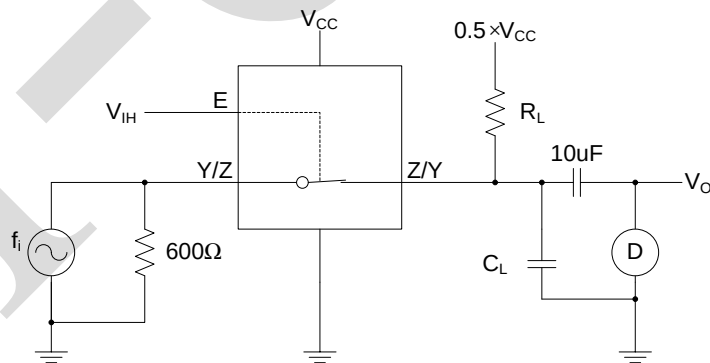


Figure 9. Enable and disable times

4.5、Additional AC Testing Circuit



Test conditions:

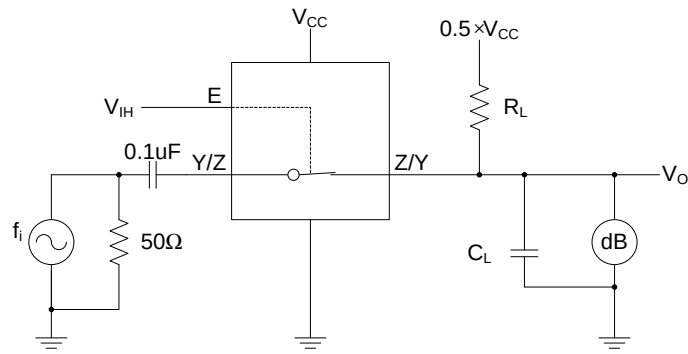
$V_{CC}=1.65V$: $V_i=1.4V$ (p-p).

$V_{CC}=2.3V$: $V_i=2V$ (p-p).

$V_{CC}=3V$: $V_i=2.5V$ (p-p).

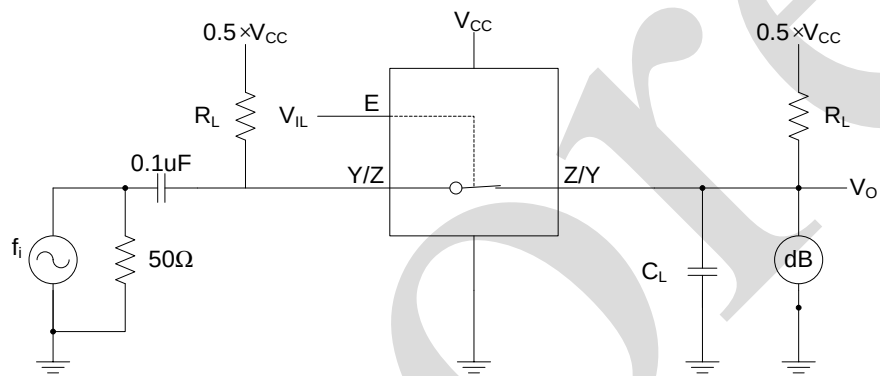
$V_{CC}=4.5V$: $V_i=4V$ (p-p).

Figure 10. Test circuit for measuring total harmonic distortion



Adjust f_i voltage to obtain 0dBm level at output. Increase f_i frequency until dB meter reads -3dB.

Figure 11. Test circuit for measuring the frequency response when switch is in ON-state



Adjust f_i voltage to obtain 0dBm level at input.

Figure 12. Test circuit for measuring isolation (OFF-state)

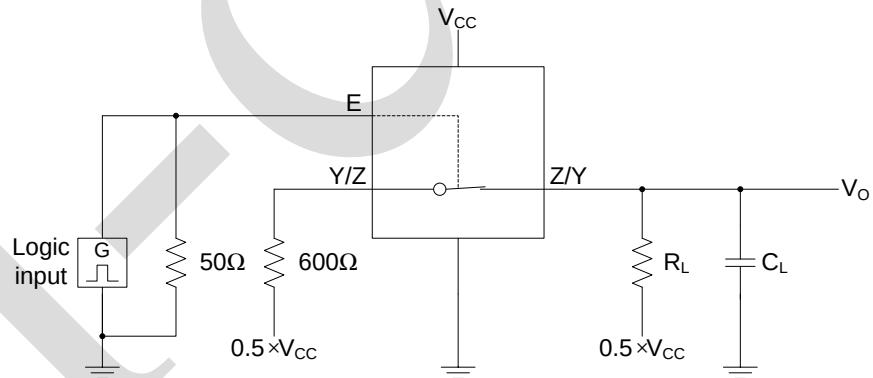
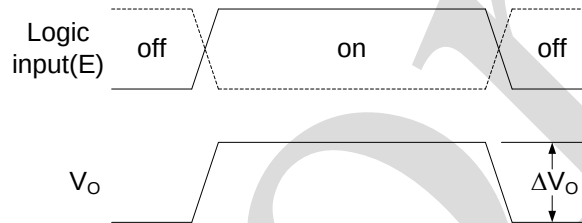
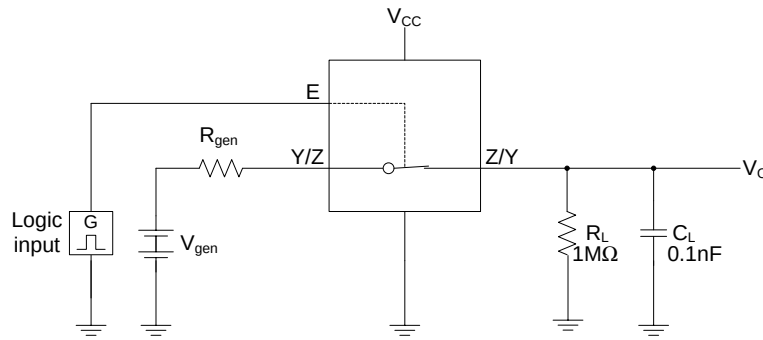


Figure 13. Test circuit for measuring crosstalk between digital input and switch



$$Q_{inj} = \Delta V_O \times C_L.$$

ΔV_O = output voltage variation.

R_{gen} = generator resistance.

V_{gen} = generator voltage.

Figure 14. Test circuit for measuring charge injection

4.6、Measurement Points

Supply voltage	Input	Output		
V_{CC}	V_M	V_M	V_X	V_Y
1.65V to 1.95V	$0.5 \times V_{CC}$	$0.5 \times V_{CC}$	$V_{OL} + 0.15V$	$V_{OH} - 0.15V$
2.3V to 2.7V	$0.5 \times V_{CC}$	$0.5 \times V_{CC}$	$V_{OL} + 0.15V$	$V_{OH} - 0.15V$
2.7V	1.5V	1.5V	$V_{OL} + 0.3V$	$V_{OH} - 0.3V$
3V to 3.6V	1.5V	1.5V	$V_{OL} + 0.3V$	$V_{OH} - 0.3V$
4.5V to 5.5V	$0.5 \times V_{CC}$	$0.5 \times V_{CC}$	$V_{OL} + 0.3V$	$V_{OH} - 0.3V$

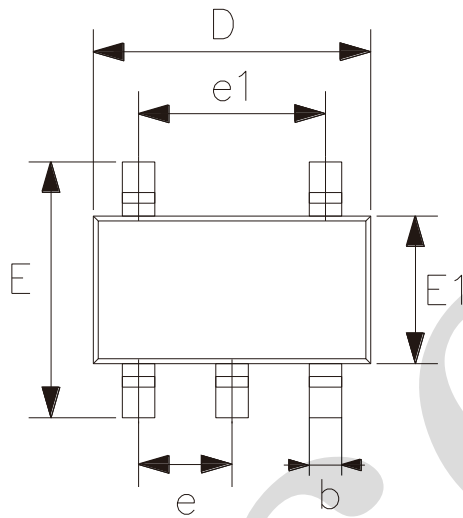
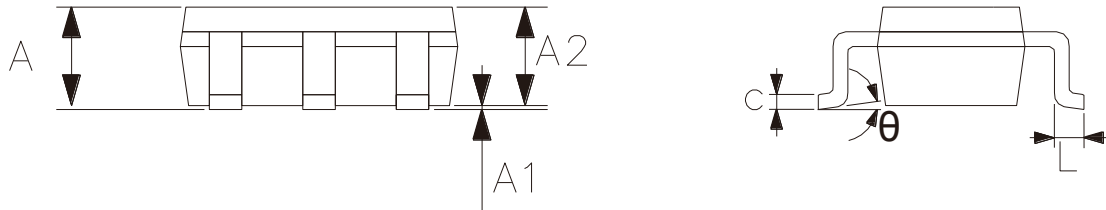
4.7、Test Data

Supply voltage	Input		Load		V_{EXT}		
V_{CC}	V_I	t_r, t_f	C_L	R_L	t_{PLH}, t_{PHL}	t_{PZH}, t_{PHZ}	t_{PZL}, t_{PLZ}
1.65V to 1.95V	V_{CC}	$\leq 2.0ns$	30pF	1kΩ	open	GND	$2 \times V_{CC}$
2.3V to 2.7V	V_{CC}	$\leq 2.0ns$	30pF	500Ω	open	GND	$2 \times V_{CC}$
2.7V	2.7V	$\leq 2.5ns$	50pF	500Ω	open	GND	$2 \times V_{CC}$
3V to 3.6V	2.7V	$\leq 2.5ns$	50pF	500Ω	open	GND	$2 \times V_{CC}$
4.5V to 5.5V	V_{CC}	$\leq 2.5ns$	50pF	500Ω	open	GND	$2 \times V_{CC}$



5、Package Information

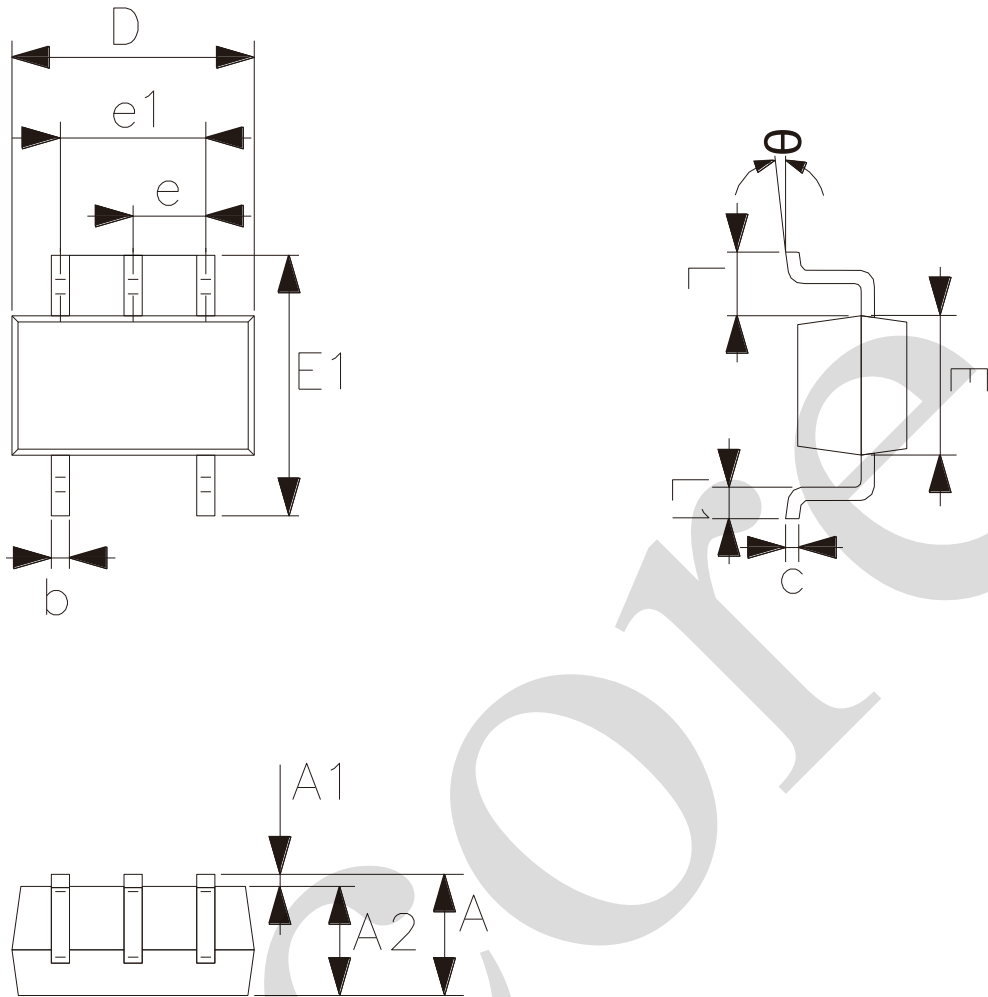
5.1、SOT23-5



2023/12/A	Dimensions In Millimeters	
Symbol	Min.	Max.
A	—	1.26
A1	0.00	0.12
A2	1.00	1.20
b	0.30	0.50
c	0.10	0.20
D	2.82	3.02
E	2.60	3.00
E1	1.50	1.70
e	0.95	
e1	1.80	2.00
L	0.30	0.60
θ	0°	8°



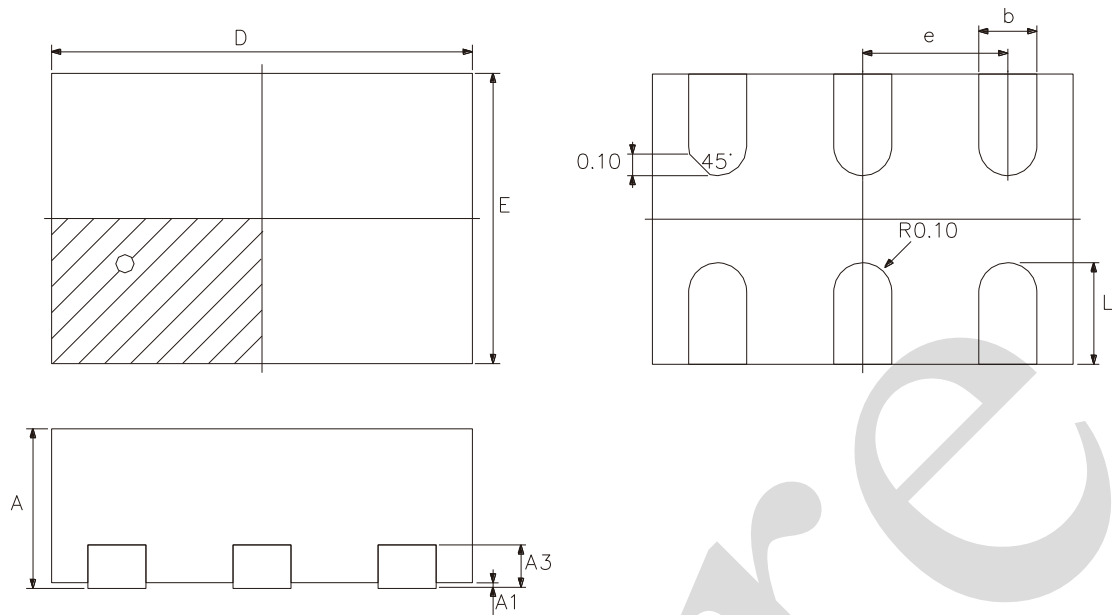
5.2、SOT353



2023/12/A Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.10
A1	0.00	0.10
A2	0.90	1.00
b	0.15	0.35
c	0.11	0.175
D	2.00	2.20
E	1.15	1.35
E1	2.15	2.45
e	0.65	
e1	1.20	1.40
L	0.525	
L1	0.26	0.46
θ	0°	8°



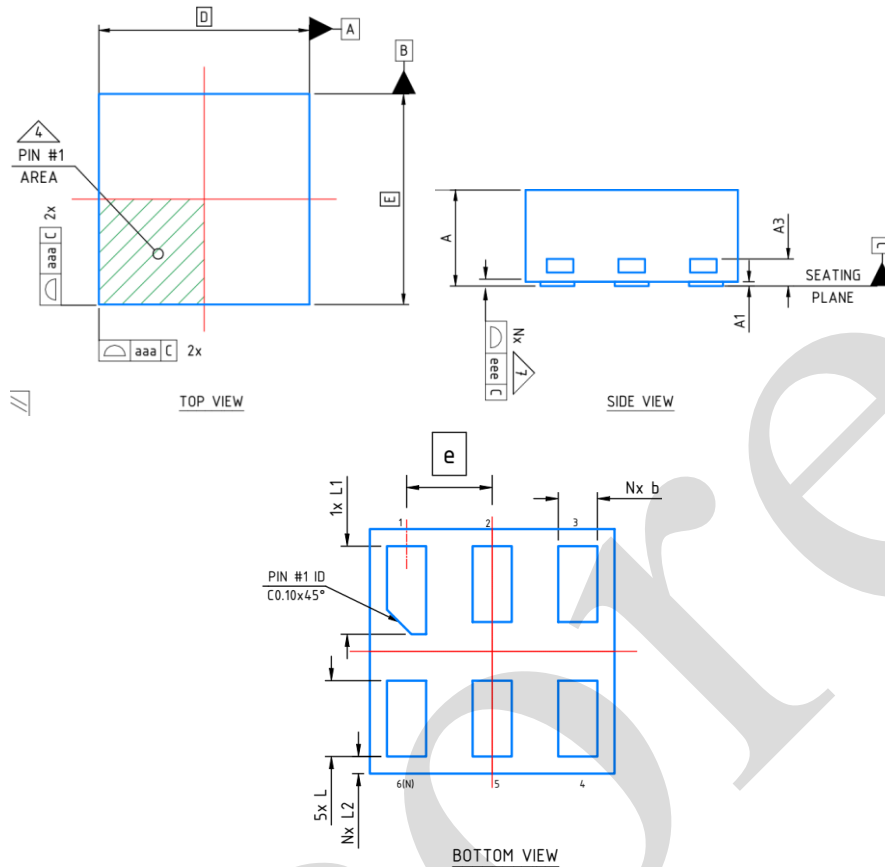
5.3、XSON6(1*1.45*0.55-0.5)



2023/12/A	Dimensions In Millimeters	
Symbol	Min	Max
A	0.51	0.60
A1	0.00	0.05
A3	0.15	
b	0.15	0.25
D	1.45	
E	1.00	
e	0.50	
L	0.25	0.45



5.4、XSON6(1*1*0.45-0.35)



2025/03/B	Dimensions In Millimeters	
Symbol	Min	Max
A	0.32	0.50
A1	0	0.05
A3	0.1-0.13 REF	
b	0.10	0.21
D	1.00	
E	1.00	
e	0.35	
L	0.25	0.36
L1	0.30	0.41
L2	0.02	0.12



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、Notes

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