



SN74HC/HCT266 (LX)

Quad 2-Input Exclusive-Nor Gate with Open-Drain Output

Product Specification

Specification Revision History:

Version	Date	Description
2023-10-A0	2023-10	New
2024-02-A1	2024-02	Modify the parameters



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1、General Description

The SN74HC/HCT266 contains four independent 2-input XNOR Gates with open-drain outputs.

Features:

- Supply voltage range:
SN74HC266: 2V to 6V
SN74HCT266: 4.5V to 5.5V
- Input levels:
SN74HC266: CMOS level
SN74HCT266: TTL level
- Temperature range: -40°C to +125°C
- Packaging information: DIP14/SOP14/TSSOP14

Ordering Information:

Tube packing specifications:

Part number	Packaging form	Marking code	Tube quantity	Boxed tube quantity	Boxed quantity	Notes
SN74HC266N(LX)	DIP14	SN74HC266N	25 PCS/tube	40 tube/box	1000 PCS/box	Dimensions of plastic enclosure: 19.0mm×6.4mm Pin spacing: 2.54mm
SN74HCT266N(LX)	DIP14	SN74HCT266N	25 PCS/tube	40 tube/box	1000 PCS/box	Dimensions of plastic enclosure: 19.0mm×6.4mm Pin spacing: 2.54mm
SN74HC266DR(LX)	SOP14	HC266	50 PCS/tube	200 tube/box	10000 PCS/box	Dimensions of plastic enclosure: 8.7mm×3.9mm Pin spacing: 1.27mm
SN74HCT266DR(LX)	SOP14	HCT266	50 PCS/tube	200 tube/box	10000 PCS/box	Dimensions of plastic enclosure: 8.7mm×3.9mm Pin spacing: 1.27mm
SN74HC266PW(LX)	TSSOP14	HC266	96 PCS/tube	200 tube/box	19200 PCS/box	Dimensions of plastic enclosure: 5.0mm×4.4mm Pin spacing: 0.65mm
SN74HCT266PW(LX)	TSSOP14	HCT266	96 PCS/tube	200 tube/box	19200 PCS/box	Dimensions of plastic enclosure: 5.0mm×4.4mm Pin spacing: 0.65mm



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Reel packing specifications:

Part number	Packaging form	Marking code	Reel quantity	Boxed reel quantity	Notes
SN74HC266DR(LX)	SOP14	HC266	4000 PCS/reel	8000 PCS/box	Dimensions of plastic enclosure: 8.7mm×3.9mm Pin spacing: 1.27mm
SN74HCT266DR(LX)	SOP14	HCT266	4000 PCS/reel	8000 PCS/box	Dimensions of plastic enclosure: 8.7mm×3.9mm Pin spacing: 1.27mm
SN74HC266PW(LX)	TSSOP14	HC266	5000 PCS/reel	10000 PCS/box	Dimensions of plastic enclosure: 5.0mm×4.4mm Pin spacing: 0.65mm
SN74HCT266PW(LX)	TSSOP14	HCT266	5000 PCS/reel	10000 PCS/box	Dimensions of plastic enclosure: 5.0mm×4.4mm Pin spacing: 0.65mm

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、Block Diagram

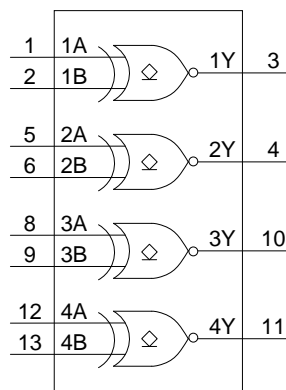


Figure 1. Logic symbol

2.2、Pin Configurations

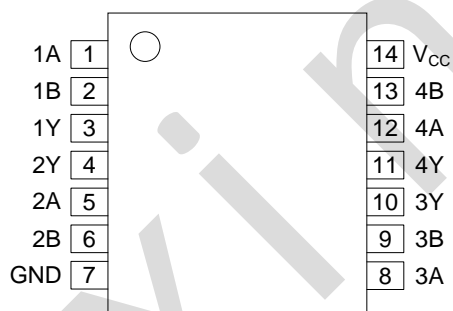


Figure 2. Pin Configurations

2.3、Pin Description

Pin No.	Pin Name	Description
1	1A	data input
2	1B	data input
3	1Y	data output
4	2Y	data output
5	2A	data input
6	2B	data input
7	GND	ground (0V)
8	3A	data input
9	4B	data input
10	3Y	data output
11	4Y	data output
12	4A	data input
13	4B	data input
14	V _{CC}	supply voltage



2.4、Function Table

Input		Output
A	B	Y
L	L	Z
L	H	L
H	L	L
H	H	Z

Note: H= HIGH voltage level; L=LOW voltage level; Z=high-impedance OFF-state.

3、Electrical Parameter

3.1、Absolute Maximum Ratings

(Voltages are referenced to GND (ground=0V), unless otherwise specified.)

Parameter	Symbol	Conditions	Min.	Max.	Unit	
supply voltage	V_{CC}	-	-0.5	+7	V	
supply current	I_{CC}	-	-	50	mA	
ground current	I_{GND}	-	-50	-	mA	
input clamping current	I_{IK}	$V_I < -0.5V$ or $V_I > V_{CC}+0.5V$	-	± 20	mA	
output clamping current	I_{OK}	$V_O < -0.5V$ or $V_O > V_{CC}+0.5V$	-	± 20	mA	
output current	I_O	$-0.5V < V_O < V_{CC}+0.5V$	-	± 25	mA	
storage temperature	T_{stg}	-	-65	+150	$^{\circ}C$	
soldering temperature	T_L	10s	DIP		245	$^{\circ}C$
			SOP/TSSOP		260	

3.2、Recommended Operating Conditions

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
SN74HC266						
supply voltage	V_{CC}	-	2.0	5.0	6.0	V
input voltage	V_I	-	0	-	V_{CC}	V
output voltage	V_O	-	0	-	V_{CC}	V
ambient temperature	T_{amb}	-	-40	-	+125	$^{\circ}C$
SN74HCT266						
supply voltage	V_{CC}	-	4.5	5.0	5.5	V
input voltage	V_I	-	0	-	V_{CC}	V
output voltage	V_O	-	0	-	V_{CC}	V
ambient temperature	T_{amb}	-	-40	-	+125	$^{\circ}C$



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	V_{CC}	Conditions	Min.	Typ.	Max.	Unit
SN74HC266							
HIGH-level input voltage	V_{IH}	2.0V	-	1.5	1.2	-	V
		4.5V	-	3.15	2.4	-	V
		6.0V	-	4.2	3.2	-	V
LOW-level input voltage	V_{IL}	2.0V	-	-	0.8	0.5	V
		4.5V	-	-	2.1	1.35	V
		6.0V	-	-	2.8	1.8	V
LOW-level output voltage	V_{OL}	2.0V	$I_O=20\mu\text{A}$	-	0.002	0.1	V
		4.5V	$I_O=20\mu\text{A}$	-	0.001	0.1	V
		6.0V	$I_O=20\mu\text{A}$	-	0.001	0.1	V
		4.5V	$I_O=4.0\text{mA}$	-	0.17	0.33	V
		6.0V	$I_O=5.2\text{mA}$	-	0.15	0.33	V
input leakage current	I_I	6.0V	$V_I=V_{CC}$ or GND	-	-	± 1	μA
OFF-state output current	I_{OZ}	6.0V	$V_I=V_{IH}$ or V_{IL} ; $V_O=V_{CC}$ or GND	-	-	± 5	μA
supply current	I_{CC}	6.0V	$V_I=V_{CC}$ or GND; $I_O=0\text{A}$	-	-	10	μA
SN74HCT266							
HIGH-level input voltage	V_{IH}	4.5~5.5V	-	2.0	1.6	-	V
LOW-level input voltage	V_{IL}	4.5~5.5V	-	-	1.2	0.8	V
LOW-level output voltage	V_{OL}	4.5V	$I_O=20\mu\text{A}$	-	0	0.1	V
			$I_O=4.0\text{mA}$	-	0.15	0.33	V
input leakage current	I_I	5.5V	$V_I=V_{CC}$ or GND	-	-	± 1	μA
OFF-state output current	I_{OZ}	5.5V	$V_I=V_{IH}$ or V_{IL} ; $V_O=V_{CC}$ or GND	-	-	± 5	μA
supply current	I_{CC}	5.5V	$V_I=V_{CC}$ or GND; $I_O=0\text{A}$	-	-	80	μA
additional supply current	ΔI_{CC}	4.5~5.5V	One input at $V_I=V_{CC}-2.1\text{V}$; Other inputs at V_{CC} or GND; $I_O=0\text{A}$	-	-	135	μA



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	V _{CC}	Conditions	Min.	Typ.	Max.	Unit
SN74HC266							
HIGH-level input voltage	V _{IH}	2.0V	-	1.5	-	-	V
		4.5V	-	3.15	-	-	V
		6.0V	-	4.2	-	-	V
LOW-level input voltage	V _{IL}	2.0V	-	-	-	0.5	V
		4.5V	-	-	-	1.35	V
		6.0V	-	-	-	1.8	V
LOW-level output voltage	V _{OL}	2.0V	I _O =20uA	-	-	0.1	V
		4.5V	I _O =20uA	-	-	0.1	V
		6.0V	I _O =20uA	-	-	0.1	V
		4.5V	I _O =4.0mA	-	-	0.4	V
		6.0V	I _O =5.2mA	-	-	0.4	V
input leakage current	I _I	6.0V	V _I =V _{CC} or GND	-	-	±1	uA
OFF-state output current	I _{OZ}	6.0V	V _I =V _{IH} or V _{IL} ; V _O =V _{CC} or GND	-	-	±10	uA
supply current	I _{CC}	6.0V	V _I =V _{CC} or GND; I _O =0A	-	-	20	uA
SN74HCT266							
HIGH-level input voltage	V _{IH}	4.5~5.5V	-	2.0	-	-	V
LOW-level input voltage	V _{IL}	4.5~5.5V	-	-	-	0.8	V
LOW-level output voltage	V _{OL}	4.5V	I _O =20uA	-	-	0.1	V
			I _O =4.0mA	-	-	0.4	V
input leakage current	I _I	5.5V	V _I =V _{CC} or GND	-	-	±1	uA
OFF-state output current	I _{OZ}	5.5V	V _I =V _{IH} or V _{IL} ; V _O =V _{CC} or GND	-	-	±10	uA
supply current	I _{CC}	5.5V	V _I =V _{CC} or GND; I _O =0A	-	-	160	uA
additional supply current	ΔI _{CC}	4.5~5.5V	One input at V _I =V _{CC} -2.1V; Other inputs at V _{CC} or GND; I _O =0A	-	-	147	uA



3.3.3、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	V_{CC}	Conditions	Min.	Typ.	Max.	Unit	
SN74HC266								
propagation delay	t_{PLZ}, t_{PZL}	2.0V	$C_L=50\text{pF}$	see Figure 4	-	60	155	ns
		4.5V	$C_L=50\text{pF}$		-	13	31	ns
		6.0V	$C_L=50\text{pF}$		-	10	26	ns
transition time	t_{THL}	2.0V	$C_L=50\text{pF}$	see Figure 4	-	28	95	ns
		4.5V	$C_L=50\text{pF}$		-	8	19	ns
		6.0V	$C_L=50\text{pF}$		-	6	16	ns
SN74HCT266								
propagation delay	t_{PLZ}, t_{PZL}	4.5V	$C_L=50\text{pF}$	see Figure 4	-	20	43	ns
		5.0V	$C_L=15\text{pF}$		-	17	-	ns
transition time	t_{THL}	4.5V	$C_L=50\text{pF}$	see Figure 4	-	7	19	ns

3.3.4、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	V_{CC}	Conditions	Min.	Typ.	Max.	Unit	
SN74HC266								
propagation delay	t_{PLZ}, t_{PZL}	2.0V	$C_L=50\text{pF}$	see Figure 4	-	-	135	ns
		4.5V	$C_L=50\text{pF}$		-	-	27	ns
		6.0V	$C_L=50\text{pF}$		-	-	23	ns
transition time	t_{THL}	2.0V	$C_L=50\text{pF}$	see Figure 4	-	-	110	ns
		4.5V	$C_L=50\text{pF}$		-	-	22	ns
		6.0V	$C_L=50\text{pF}$		-	-	19	ns
SN74HCT266								
propagation delay	t_{PLZ}, t_{PZL}	4.5V	$C_L=50\text{pF}$	see Figure 4	-	-	51	ns
transition time	t_{THL}	4.5V	$C_L=50\text{pF}$	see Figure 4	-	-	22	ns



4、Testing Circuit

4.1、AC Testing Circuit

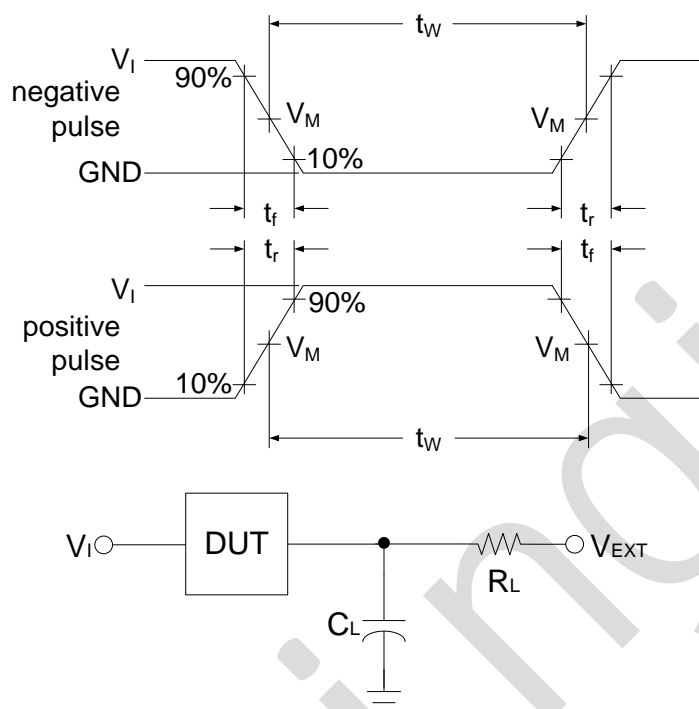


Figure 3. Test circuit for measuring switching times

C_L includes probe and jig capacitance.

4.2、Test Data

Type	Input		Load		V_{EXT}		
	V_I	$t_r = t_f$	C_L	R_L	t_{PLH}/t_{PHL}	t_{PLZ}/t_{PZL}	t_{PHZ}/t_{PZH}
SN74HC266	V_{CC}	3.0ns	15pF, 50pF	1K Ω	Open	V_{CC}	GND
SN74HCT266	3.0V	3.0ns	15pF, 50pF	1K Ω	Open	V_{CC}	GND



4.3、AC Testing Waveforms

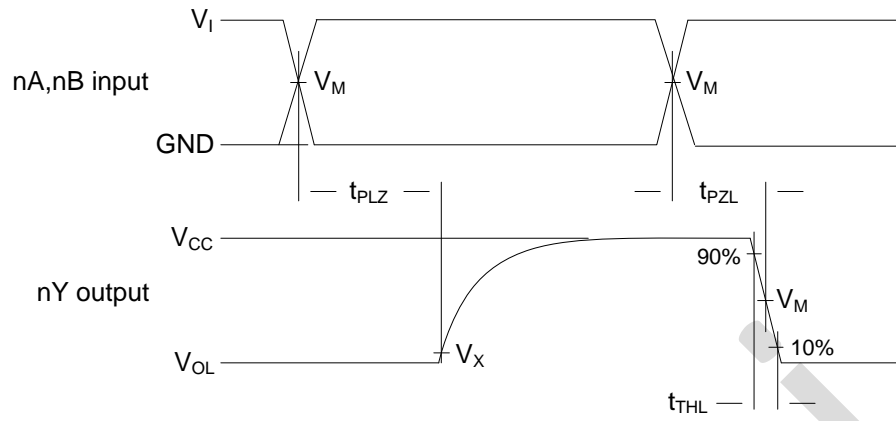


Figure 4. Input to output propagation delays

4.4、Measurement Points

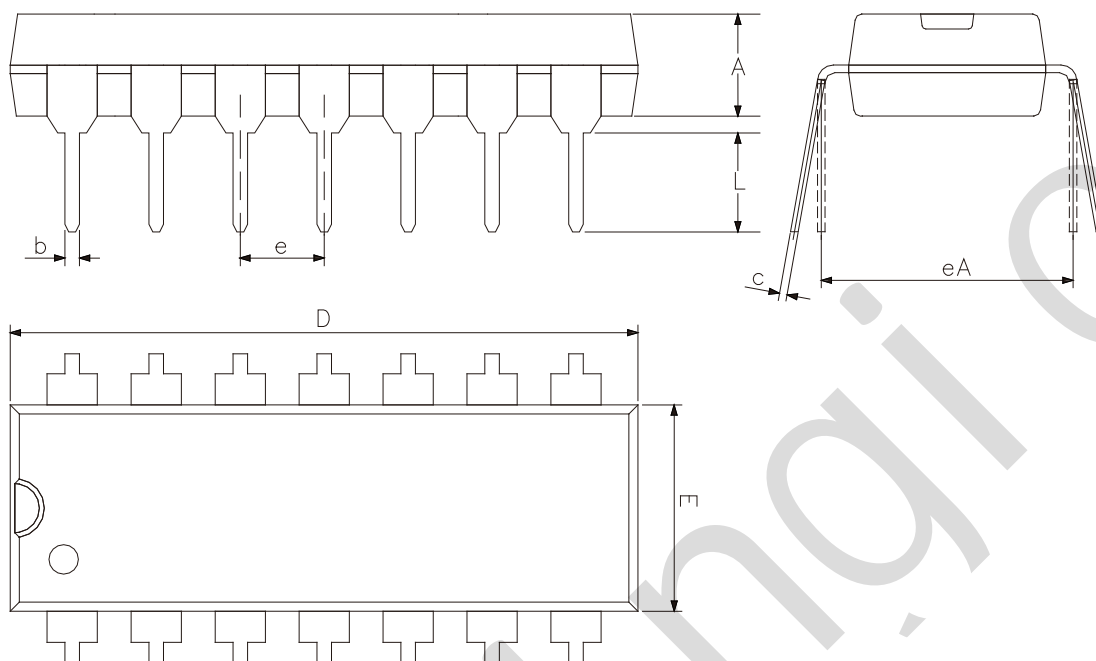
Type	Input	Output		
	V_M	V_M	V_X	V_Y
SN74HC266	$0.5 \times V_{CC}$	$0.5 \times V_{CC}$	$0.1 \times V_{CC}$	$0.9 \times V_{CC}$
SN74HCT266	1.3V	1.3V	$0.1 \times V_{CC}$	$0.9 \times V_{CC}$



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5、Package Information

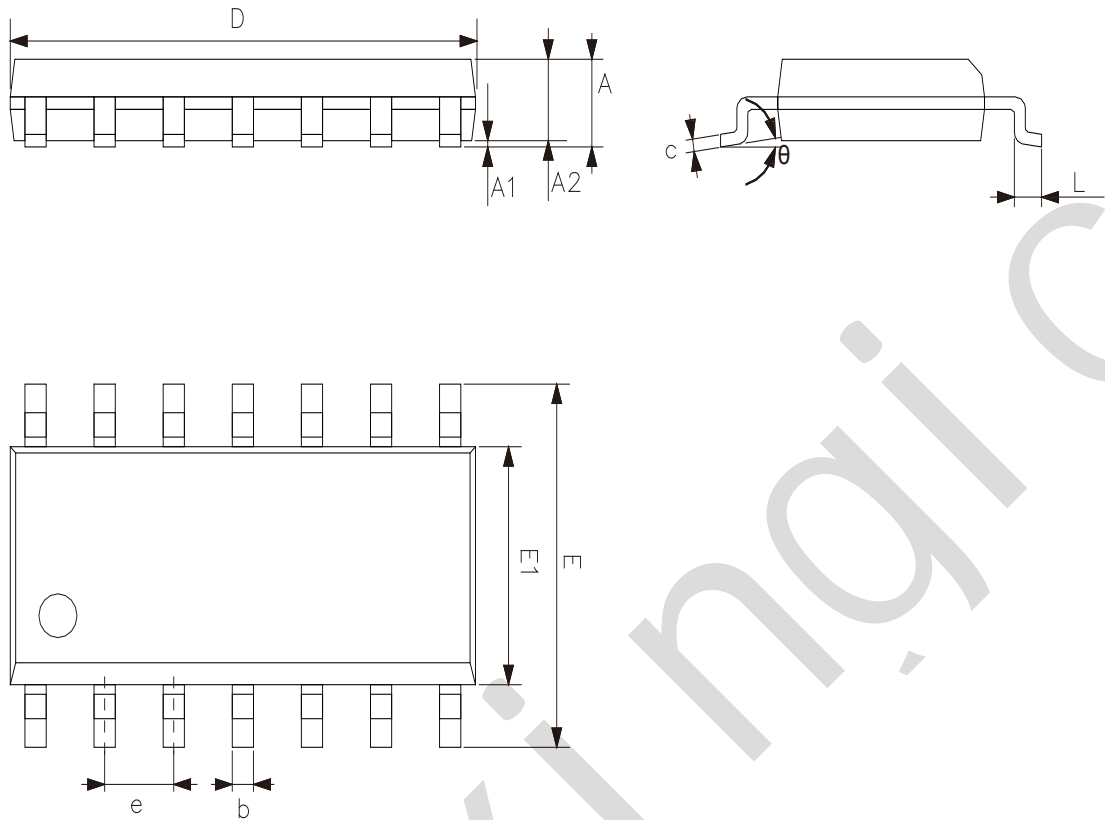
5.1、DIP14



2023/12/A	Dimensions In Millimeters	
Symbol	Min	Max
A	3.05	3.60
b	0.33	0.56
c	0.20	0.36
D	18.80	19.40
E	6.20	6.60
e	2.54	
eA	7.62	10.90
L	2.92	—



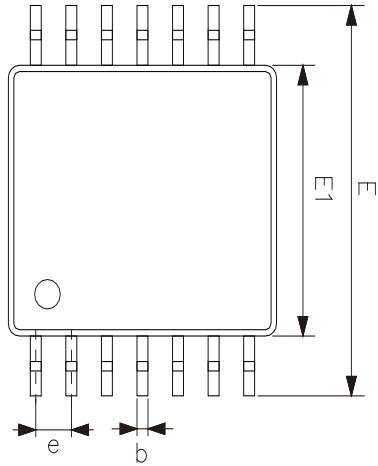
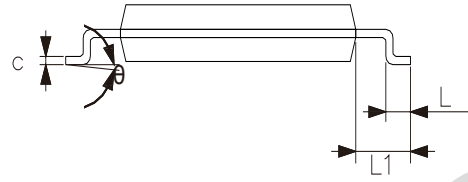
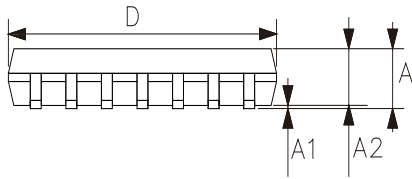
5.2、SOP14



2023/12/A	Dimensions In Millimeters	
Symbol	Min.	Max.
A	1.50	1.75
A1	0.05	0.25
A2	1.30	—
b	0.33	0.50
c	0.19	0.25
D	8.43	8.76
E	5.80	6.25
E1	3.75	4.00
e	1.27	
L	0.40	0.89
θ	0°	8°



5.3、TSSOP14



2023/12/A	Dimensions In Millimeters		
	Symbol	Min	Max
	A	—	1.20
	A1	0.05	0.15
	A2	0.80	1.05
	b	0.19	0.30
	c	0.09	0.20
	D	4.90	5.10
	E1	4.30	4.50
	E	6.20	6.60
	e	0.65	
	L	0.45	0.75
	L1	1.00	
	θ	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、 Notes

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