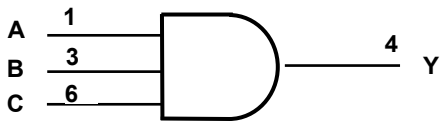
Pin Descriptions

Pin Name	Function
A	Data Input
GND	Ground
B	Data Input
Y	Data Output
V_{CC}	Supply Voltage
C	Data Input

Logic Diagram



Function Table

Inputs			Output
A	**B**	**C**	**Y**
H	H	H	H
L	X	X	L
X	L	X	L
X	X	L	L

Absolute Maximum Ratings (Note 4) (@T_A = +25°C, unless otherwise specified.)

Symbol	Parameter	Rating	Unit
ESD HBM	Human Body Model ESD Protection	2	kV
ESD MM	Machine Model ESD Protection	200	V
V_{CC}	Supply Voltage Range	-0.5 to 6.5	V
V_I	Input Voltage Range	-0.5 to 6.5	V
V_O	Voltage applied to output in high impedance or I_{OFF} state	-0.5 to 6.5	V
V_O	Voltage applied to output in high or low state	-0.3 to V_{CC} +0.5	V
I_{IK}	Input Clamp Current V_I<0	-50	mA
I_{OK}	Output Clamp Current	-50	mA
I_O	Continuous output current	±50	mA
$I_{CC\ MAX\ CONT}$	Continuous current through Vcc or GND	±100	mA
T_J	Operating Junction Temperature	-40 to +150	°C
T_{STG}	Storage Temperature	-65 to +150	°C

Note: 4. Stresses beyond the absolute maximum may result in immediate failure or reduced reliability. These are stress values and device operation should be within recommend values.

Recommended Operating Conditions (Note 5) (@T_A = +25°C, unless otherwise specified.)

Symbol	Parameter		Min	Max	Unit
V_{CC}	Operating Voltage	Operating	1.65	5.5	V
		Data Retention Only	1.5		V
V_{IH}	High-Level Input Voltage	V_{CC} = 1.65V to 1.95V	0.65 X V_{CC}		V
		V_{CC} = 2.3V to 2.7V	1.7		
		V_{CC} = 3V to 3.6V	2		
		V_{CC} = 4.5V to 5.5V	0.7 X V_{CC}		
V_{IL}	Low-Level Input Voltage	V_{CC} = 1.65V to 1.95V		0.35 X V_{CC}	V
		V_{CC} = 2.3V to 2.7V		0.7	
		V_{CC} = 3V to 3.6V		0.8	
		V_{CC} = 4.5V to 5.5V		0.3 X V_{CC}	
V_I	Input Voltage		0	5.5	V
V_O	Output Voltage		0	V_{CC}	V
I_{OH}	High-Level Output Current	V_{CC} = 1.65V		-4	mA
		V_{CC} = 2.3V		-8	
		V_{CC} = 3V		-16	
				-24	
		V_{CC} = 4.5V		-32	
I_{OL}	Low-Level Output Current	V_{CC} = 1.65V		4	mA
		V_{CC} = 2.3V		8	
		V_{CC} = 3V		16	
				24	
		V_{CC} = 4.5V		32	
$\Delta t/\Delta V$	Input Transition Rise or Fall Rate	V_{CC} = 1.8V ± 0.15V, 2.5V ± 0.2V		20	ns/V
		V_{CC} = 3.3V ± 0.3V		10	
		V_{CC} = 5V ± 0.5V		5	
T_A	Operating Free-Air Temperature		-40	+125	°C

Note: 5. Unused inputs should be held at V_{CC} or Ground.

Electrical Characteristics T_A = -40°C to +85°C (All typical values are at V_{CC} = 3.3V, T_A = +25°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	V_{CC}	Min	Typ	Max	Unit
V_{OH}	High-Level Output Voltage	I_{OH} = -100µA	1.65V to 5.5V	V_{CC} – 0.1			V
		I_{OH} = -4mA	1.65V	1.2			
		I_{OH} = -8mA	2.3V	1.9			
		I_{OH} = -16mA	3V	2.4			
		I_{OH} = -24mA		2.3			
		I_{OH} = -32mA	4.5V	3.8			
V_{OL}	Low-Level Output Voltage	I_{OL} = 100µA	1.65V to 5.5V			0.1	V
		I_{OL} = 4mA	1.65V			0.45	
		I_{OL} = 8mA	2.3V			0.3	
		I_{OL} = 16mA	3V			0.4	
		I_{OL} = 24mA				0.55	
		I_{OL} = 32mA	4.5V			0.55	
I_I	Input Current	V_I = 5.5 V or GND	0 to 5.5V			± 5	µA
I_{OFF}	Power Down Leakage Current	V_I or V_O = 5.5V	0			± 10	µA
I_{CC}	Supply Current	V_I = 5.5V of GND, I_O = 0	1.65V to 5.5V			10	µA
ΔI_{CC}	Additional Supply Current	Input at V_{CC} –0.6V	3V to 5.5V			500	µA

Electrical Characteristics T_A = -40°C to +125°C (All typical values are at V_{CC} = 3.3V, T_A = +25°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	V_{CC}	Min	Typ	Max	Unit
V_{OH}	High-Level Output Voltage	I_{OH} = -100µA	1.65V to 5.5V	V_{CC} – 0.1			V
		I_{OH} = -4mA	1.65V	0.95			
		I_{OH} = -8mA	2.3V	1.7			
		I_{OH} = -16mA	3V	1.9			
		I_{OH} = -24mA		2.0			
		I_{OH} = -32mA	4.5V	3.4			
V_{OL}	Low-Level Output Voltage	I_{OL} = 100µA	1.65V to 5.5V			0.1	V
		I_{OL} = 4mA	1.65V			0.70	
		I_{OL} = 8mA	2.3V			0.45	
		I_{OL} = 16mA	3V			0.60	
		I_{OL} = 24mA				0.80	
		I_{OL} = 32mA	4.5V			0.80	
I_I	Input Current	V_I = 5.5 V or GND	0 to 5.5V			± 20	µA
I_{OFF}	Power Down Leakage Current	V_I or V_O = 5.5V	0			± 20	µA
I_{CC}	Supply Current	V_I = 5.5V of GND, I_O = 0	1.65V to 5.5V			40	µA
ΔI_{CC}	Additional Supply Current	Input at V_{CC} –0.6 V	3V to 5.5V			5000	µA

Package Characteristics (All typical values are at V_{CC} = 3.3V, T_A = +25°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	V_{CC}	Min	Typ	Max	Unit
C_I	Input Capacitance	V_I = V_{CC} – or GND	3.3		3.5		pF
θ_{JA}	Thermal Resistance Junction-to-Ambient	SOT26	(Note 6)		204		°C/W
		SOT363			371		
		X2-DFN1410-6			430		
		X2-DFN1010-6			510		
θ_{JC}	Thermal Resistance Junction-to-Case	SOT26	(Note 6)		52		°C/W
		SOT363			143		
		X2-DFN1410-6			190		
		X2-DFN1010-6			250		

Note: 6. Test condition for SOT26, SOT363, X2-DFN1410-6 and X2-DFN1010-6 : Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

Switching Characteristics

T_A = -40°C to +85°C, C_L = 15pF (see Figure 1)

Parameter	From (Input)	TO (OUTPUT)	V_{CC} = 1.8V ± 0.15V		V_{CC} = 2.5V ± 0.2V		V_{CC} = 3.3V ± 0.3V		V_{CC} = 5V ± 0.5V		Unit
			Min	Max	Min	Max	Min	Max	Min	Max	
t_{pd}	Any	Y	1.0	15.2	0.7	5.6	0.7	4.1	0.7	3.1	ns

T_A = -40°C to +85°C, C_L = 30 or 50pF (see Figure 2)

Parameter	From (Input)	TO (OUTPUT)	V_{CC} = 1.8V ± 0.15V		V_{CC} = 2.5V ± 0.2V		V_{CC} = 3.3V ± 0.3V		V_{CC} = 5V ± 0.5V		Unit
			Min	Max	Min	Max	Min	Max	Min	Max	
t_{pd}	Any	Y	1.0	17.2	0.7	6.2	0.7	4.9	0.7	3.5	ns

T_A = -40°C to +125°C, C_L = 15 pF (see Figure 1)

Parameter	From (Input)	TO (OUTPUT)	V_{CC} = 1.8V ± 0.15V		V_{CC} = 2.5V ± 0.2V		V_{CC} = 3.3V ± 0.3V		V_{CC} = 5V ± 0.5V		Unit
			Min	Max	Min	Max	Min	Max	Min	Max	
t_{pd}	Any	Y	1.0	18.3	0.7	6.7	0.7	4.9	0.7	3.7	ns

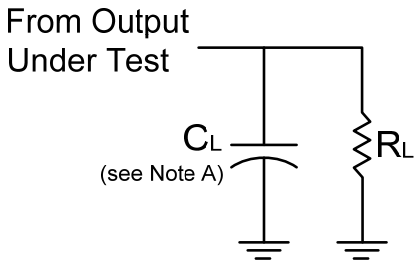
T_A = -40°C to +125°C, C_L = 30 or 50pF (see Figure 2)

Parameter	From (Input)	TO (OUTPUT)	V_{CC} = 1.8V ± 0.15V		V_{CC} = 2.5V ± 0.2V		V_{CC} = 3.3V ± 0.3V		V_{CC} = 5V ± 0.5V		Unit
			Min	Max	Min	Max	Min	Max	Min	Max	
t_{pd}	Any	Y	1.0	20.7	0.7	7.5	0.7	5.9	0.7	4.2	ns

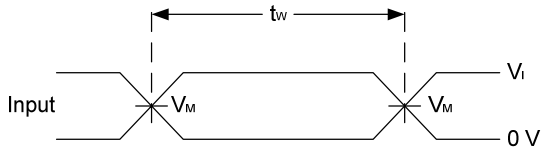
Operating Characteristics (@T_A = +25°C, unless otherwise specified.)

Parameter		Test Conditions	V_{CC} = 1.8V	V_{CC} = 2.5V	V_{CC} = 3.3V	V_{CC} = 5V	Unit
			Typ	Typ	Typ	Typ	
C_{pd}	Power dissipation capacitance	f = 10 MHz	17	18	19	22	pF

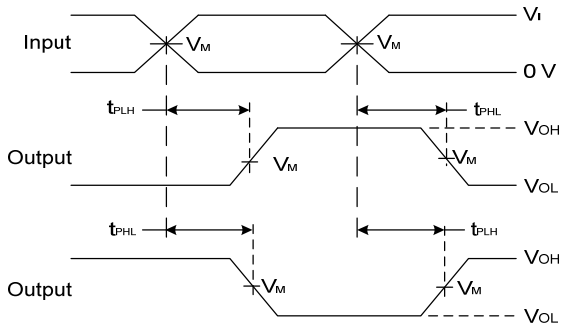
Parameter Measurement Information



V_{CC}	Inputs		V_M	C_L	R_L
	V_I	t_r/t_f			
1.8V±0.15V	V_{CC}	≤2ns	$V_{CC}/2$	15pF	1MΩ
2.5V±0.2V	V_{CC}	≤2ns	$V_{CC}/2$	15pF	1MΩ
3.3V±0.3V	3V	≤2.5ns	1.5V	15pF	1MΩ
5V±0.5V	V_{CC}	≤2.5ns	$V_{CC}/2$	15pF	1MΩ



Voltage Waveform
Pulse Duration

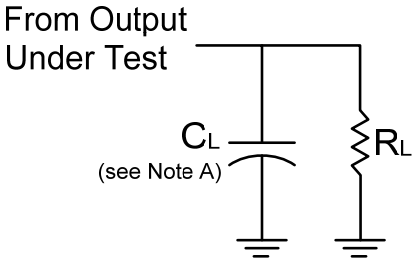


Voltage Waveform
Propagation Delay Times
Inverting and Non Inverting Outputs

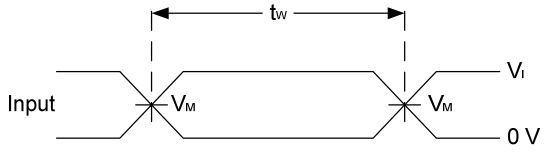
Notes:
A. Includes test lead and test apparatus capacitance.
B. All pulses are supplied at pulse repetition rate ≤ 10MHz
C. Inputs are measured separately one transition per measurement
D. t_{PLH} and t_{PHL} are the same as t_{PD}

Figure 1 Load Circuit and Voltage Waveforms

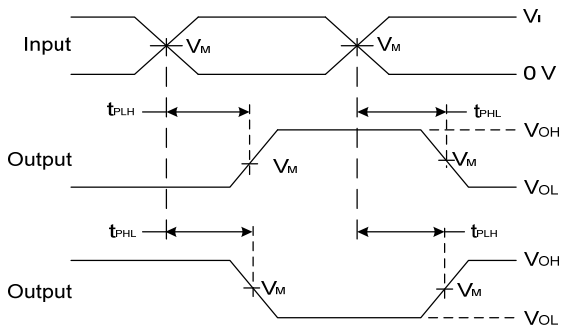
Parameter Measurement Information (cont.)



V_{CC}	Inputs		V_M	C_L	R_L
	V_I	t_r/t_f			
1.8V±0.15V	V_{CC}	≤2ns	$V_{CC}/2$	30pF	1kΩ
2.5V±0.2V	V_{CC}	≤2ns	$V_{CC}/2$	30pF	500Ω
3.3V±0.3V	3V	≤2.5ns	1.5V	50pF	500Ω
5V±0.5V	V_{CC}	≤2.5ns	$V_{CC}/2$	50pF	500Ω



Voltage Waveform
Pulse Duration

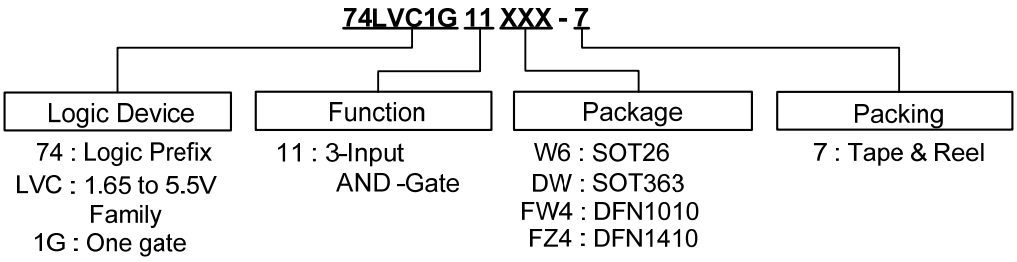


Voltage Waveform
Propagation Delay Times
Inverting and Non Inverting Outputs

Notes:
A. Includes test lead and test apparatus capacitance.
B. All pulses are supplied at pulse repetition rate ≤ 10MHz
C. Inputs are measured separately one transition per measurement
D. t_{PLH} and t_{PHL} are the same as t_{PD}

Figure 2 Load Circuit and Voltage Waveforms

Ordering Information

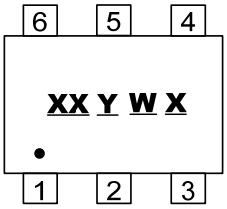


Part Number	Package Code	Packaging (Note 7)	7" Tape and Reel	
			Quantity	Part Number Suffix
74LVC1G11W6-7	W6	SOT26	3000/Tape & Reel	-7
74LVC1G11DW-7	DW	SOT363	3000/Tape & Reel	-7
74LVC1G11FW4-7	FW4	X2-DFN1010-6	5000/Tape & Reel	-7
74LVC1G11FZ4-7	FW4	X2-DFN1410-6	5000/Tape & Reel	-7

Note: 7. The taping orientation is located on our website at http://www.diodes.com/datasheets/ap02007.pdf

Marking Information

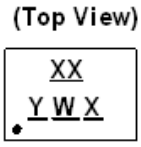
(1) SOT26, SOT363



XX : Identification code
Y : Year 0~9
W : Week : A~Z : 1~26 week;
a~z : 27~52 week; z represents 52 and 53 week
X : A~Z : Internal Code

Part Number	Package	Identification Code
74LVC1G11W6	SOT26	TV
74LVC1G11DW	SOT363	TV

(2) X2-DFN1010-6, X2-DFN1410-6



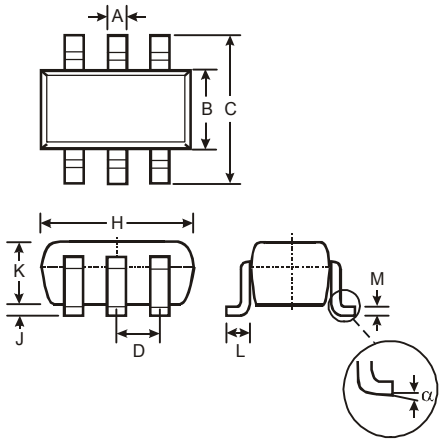
XX : Identification Code
Y : Year : 0~9
W : Week : A~Z : 1~26 week;
a~z : 27~52 week; z represents 52 and 53 week
X : A~Z : Internal code

Part Number	Package	Identification Code
74LVC1G11FW4	X2-DFN1010-6	TV
74LVC1G11FZ4	X2-DFN1410-6	TV

Package Outline Dimensions (All dimensions in mm.)

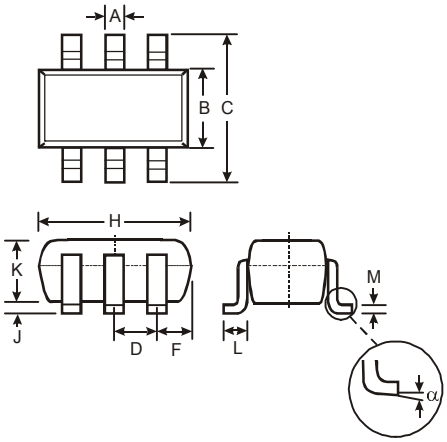
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.

(1) Package Type: SOT26



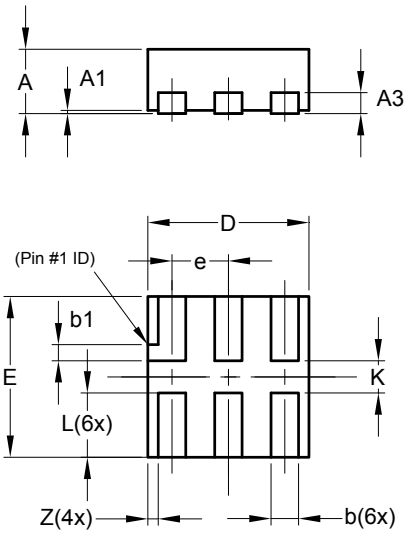
SOT26			
Dim	Min	Max	Typ
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	—	—	0.95
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
α	0°	8°	—
All Dimensions in mm			

(2) Package Type: SOT363



SOT363		
Dim	Min	Max
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Typ	
F	0.40	0.45
H	1.80	2.20
J	0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.22
α	0°	8°
All Dimensions in mm		

(3) Package Type: DFN1010

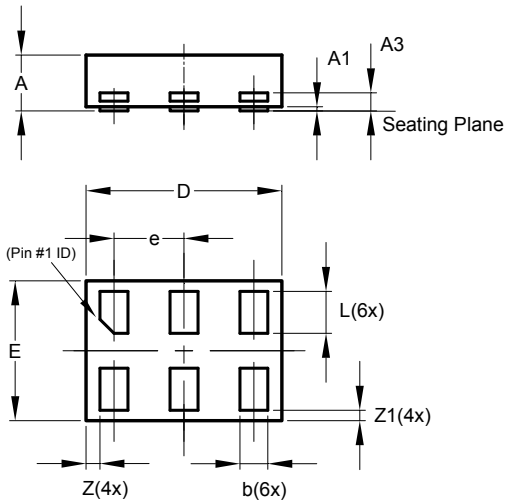


X2-DFN1010-6			
Dim	Min	Max	Typ
A	—	0.40	0.39
A1	0.00	0.05	0.02
A3	—	—	0.13
b	0.14	0.20	0.17
b1	0.05	0.15	0.10
D	0.95	1.05	1.00
E	0.95	1.05	1.00
e	—	—	0.35
L	0.35	0.45	0.40
K	0.15	—	—
Z	—	—	0.065
All Dimensions in mm			

Package Outline Dimensions (cont.) (All dimensions in mm.)

Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.

(4) Package Type X2-DFN1410-6

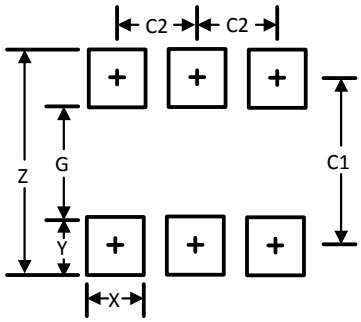


X2-DFN1410-6			
Dim	**Min**	**Max**	**Typ**
A	—	0.40	0.39
A1	0.00	0.05	0.02
A3	—	—	0.13
b	0.15	0.25	0.20
D	1.35	1.45	1.40
E	0.95	1.05	1.00
e	—	—	0.50
L	0.25	0.35	0.30
Z	—	—	0.10
Z1	0.045	0.105	0.075
All Dimensions in mm			

Suggested Pad Layout (All dimensions in mm.)

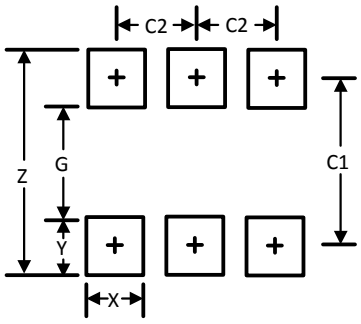
Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.

(1) Package Type: SOT26



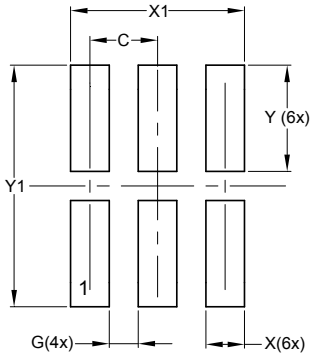
Dimensions	Value (in mm)
Z	3.20
G	1.60
X	0.55
Y	0.80
C1	2.40
C2	0.95

(2) Package Type: SOT363



Dimensions	Value (in mm)
Z	2.5
G	1.3
X	0.42
Y	0.6
C1	1.9
C2	0.65

(3) Package Type X2-DFN1010-6

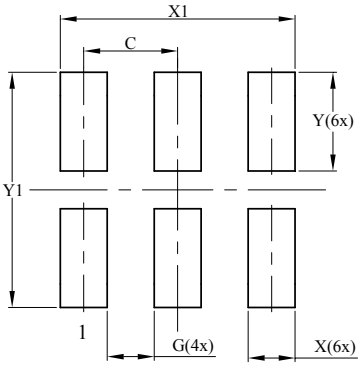


Dimensions	Value (in mm)
C	0.350
G	0.150
X	0.200
X1	0.900
Y	0.550
Y1	1.250

Suggested Pad Layout (cont.)

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.

(4) Package Type: X2-DFN1410-6



Dimensions	Value (in mm)
C	0.500
G	0.250
X	0.250
X1	1.250
Y	0.525
Y1	1.250