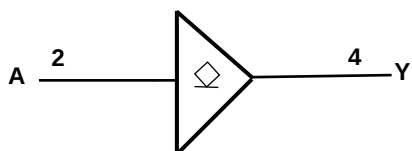


Pin Descriptions

Pin Name	Description
NC	No connection
A	Data Input
GND	Ground
Y	Data Output Open Drain
Vcc	Supply Voltage

Logic Diagram



Function Table

Inputs	Output
A	Y
H	Z
L	L

Absolute Maximum Ratings (Note 3)

Symbol	Description	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
	Continuous current through Vdd or GND	± 100	mA
T_J	Operating Junction Temperature	-40 to 150	°C
T_{STG}	Storage Temperature	-65 to 150	°C

Notes: 3. 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 4)

Symbol	Parameter		Min	Max	Unit
V_{CC}	Operating Voltage	Operating	1.4	5.5	V
		Data retention only	1.2		V
V_{IH}	High-level Input Voltage	$V_{CC} = 1.4 \text{ V to } 1.95 \text{ V}$	$0.65 \times V_{CC}$		V
		$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$	1.7		
		$V_{CC} = 3 \text{ V to } 3.6 \text{ V}$	2		
		$V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$	$0.7 \times V_{CC}$		
V_{IL}	Low-level input voltage	$V_{CC} = 1.4 \text{ V to } 1.95 \text{ V}$		$0.35 \times V_{CC}$	V
		$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$		0.7	
		$V_{CC} = 3 \text{ V to } 3.6 \text{ V}$		0.8	
		$V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$		$0.3 \times V_{CC}$	
V_I	Input Voltage		0	5.5	V
V_O	Output Voltage		0	V_{CC}	V
I_{OL}	Low-level output current	$V_{CC} = 1.4 \text{ V}$		3	mA
		$V_{CC} = 1.65 \text{ V}$		4	
		$V_{CC} = 2.3 \text{ V}$		8	
		$V_{CC} = 3 \text{ V}$		16	
				24	
		$V_{CC} = 4.5 \text{ V}$		32	
$\Delta t/\Delta V$	Input transition rise or fall rate	$V_{CC} = 1.4 \text{ V to } 3.0 \text{ V}$		20	ns/V
		$V_{CC} = 3.3 \text{ V} \pm 0.3 \text{ V}$		10	
		$V_{CC} = 5 \text{ V} \pm 0.5 \text{ V}$		5	
T_A	Operating free-air temperature		-40	85	°C

Notes: 4. Unused inputs should be held at V_{CC} or Ground.

Electrical Characteristics (All typical values are at $V_{CC} = 3.3V$, $T_A = 25^\circ C$)

Over recommended free-air temperature range (unless otherwise noted)

Symbol	Parameter	Test Conditions	Vcc	Min	Typ	Max	Unit
V_{OL}	Low Level Output Voltage	$I_{OL} = 100 \mu A$	1.4 V to 5.5 V			0.1	V
		$I_{OL} = 3 \text{ mA}$	1.4 V			0.4	
		$I_{OL} = 4 \text{ mA}$	1.65 V			0.45	
		$I_{OL} = 8 \text{ mA}$	2.3 V			0.3	
		$I_{OL} = 16 \text{ mA}$	3 V			0.4	
		$I_{OL} = 24 \text{ mA}$				0.55	
		$I_{OL} = 32 \text{ mA}$	4.5 V			0.55	
I_I	Input Current	$V_I = 5.5 \text{ V}$ or GND	0 to 5.5 V			± 5	μA
I_{OZ}	Z State Leakage Current	$V_O = 5.5V$	3.6 V			± 10	μA
I_{OFF}	Power Down Leakage Current	V_I or $V_O = 5.5V$	0 V			± 10	μA
I_{CC}	Supply Current	$V_I = 5.5 \text{ V}$ or GND $I_O = 0$	1.4 V to 5.5 V			10	μA
ΔI_{CC}	Additional Supply Current	Input at $V_{CC} - 0.6 \text{ V}$	3 V to 5.5 V			500	μA
C_{ii}	Input Capacitance	$V_I = V_{CC}$ or GND	3.3V		4		pF
C_O	Output Capacitance	$V_O = V_{CC}$ or GND	3.3V		5		pF
θ_{JA}	Thermal Resistance Junction-to-Case	SOT25	(Note 5)		204		$^\circ C/W$
		SOT353	(Note 5)		371		
		DFN1410	(Note 5)		430		
θ_{JC}	Thermal Resistance Junction-to-Case	SOT25	(Note 5)		52		$^\circ C/W$
		SOT353	(Note 5)		143		
		DFN1410	(Note 5)		190		

Notes: 5. Test condition for SOT25, SOT353, and DFN1410: Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

Switching Characteristics

Over recommended free-air temperature range, $C_L = 15\text{pF}$ (see Figure 1)

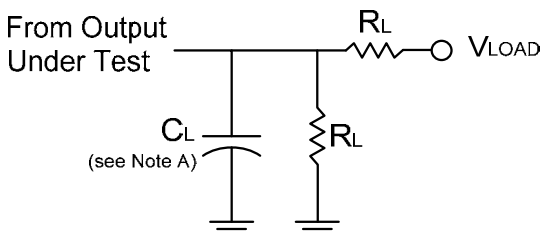
Parameter	From (Input)	TO (OUTPUT)	Vcc = 1.5 V ± 0.1V		Vcc = 1.8 V ± 0.15V		Vcc = 2.5 V ± 0.2V		Vcc = 3.3 V ± 0.3V		Vcc = 5 V ± 0.5V		Unit
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
t_{pd}	A	Y	1.5	9.9	1	5.8	0.8	4.4	0.8	3.4	0.8	3.1	ns

Operating Characteristics

$T_A = 25^\circ\text{C}$

Parameter		Test Conditions	Vcc = 1.5 V	Vcc = 1.8 V	Vcc = 2.5 V	Vcc = 3.3 V	Vcc = 5 V	Unit
			TYP	TYP	TYP	TYP	TYP	
C_{pd}	Power dissipation capacitance	f = 10 MHz	3	3	3	4	6	pF

Parameter Measurement Information



TEST	Condition
t_{PLZ} (see Notes D and E)	Vload
t_{PZL} (see Notes D and F)	Vload

Vcc	Inputs		VM	VLOAD	CL	RL	VΔ
	VI	tr/td					
1.8V±0.15V	Vcc	≤2ns	Vcc/2	2 X Vcc	30pF	1KΩ	0.15V
2.5V±0.2V	Vcc	≤2ns	Vcc/2	2 X Vcc	30pF	500Ω	0.15V
3.3V±0.3V	3V	≤2.5ns	1.5V	6V	50pF	500Ω	0.3V
5V±0.5V	Vcc	≤2.5ns	Vcc/2	2 X Vcc	50pF	500Ω	0.3V

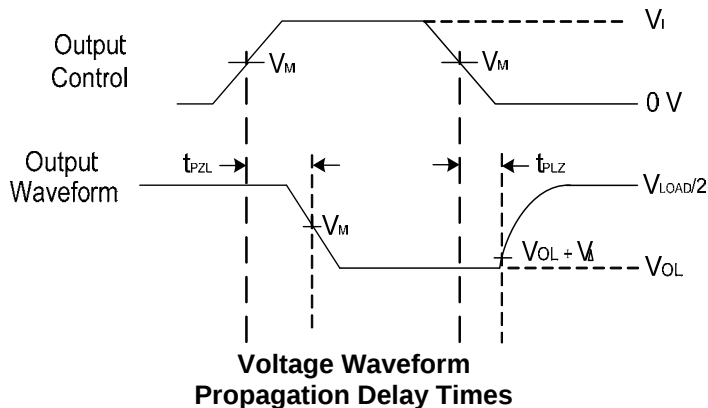
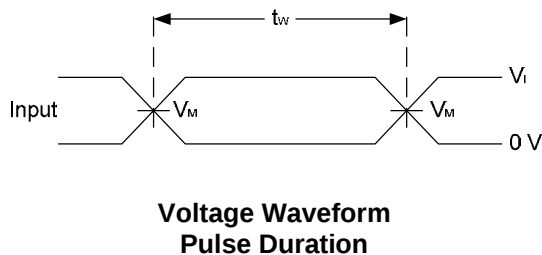
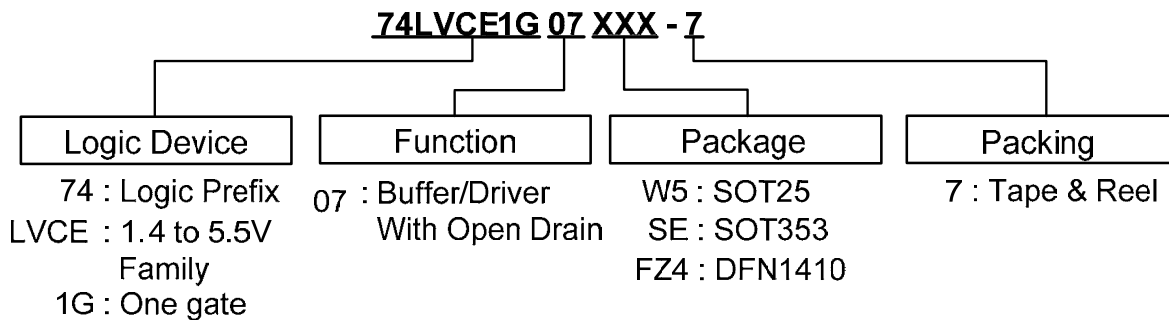


Figure 1. Load Circuit and Voltage Waveforms

- Notes:
- A. Includes test lead and test apparatus capacitance.
 - B. All pulses are supplied at pulse repetition rate ≤ 10 MHz
 - C. The inputs are measured one at a time with one transition per measurement.
 - D. For the open drain device t_{PLZ} and t_{PZL} are the same as t_{PD}
 - E. t_{PZL} is measured at V_M .
 - F. t_{PLZ} is measured at $V_{OL} + V_{\Delta}$

Ordering Information



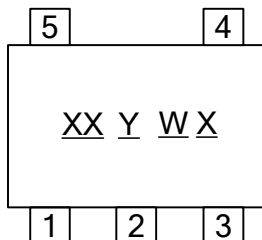
Device	Package Code	Packaging (Note 6)	7" Tape and Reel	
			Quantity	Part Number Suffix
74LVCE1G07W5-7	W5	SOT25	3000/Tape & Reel	-7
74LVCE1G07SE-7	SE	SOT353	3000/Tape & Reel	-7
74LVCE1G07FZ4-7	FZ4	DFN1410	5000/Tape & Reel	-7

Notes: 6. Pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.

Marking Information

(1) SOT25 and SOT353

(Top View)

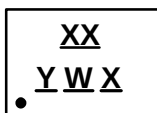


XX : Identification code
Y : Year 0~9
W : Week : A~Z : 1~26 week;
a~z : 27~52 week; z represents
52 and 53 week
X : A~Z : Internal code

Part Number	Package	Identification Code
74LVCE1G07W5	SOT25	PN
74LVCE1G07SE	SOT353	PN

(3) DFN1410

(Top View)

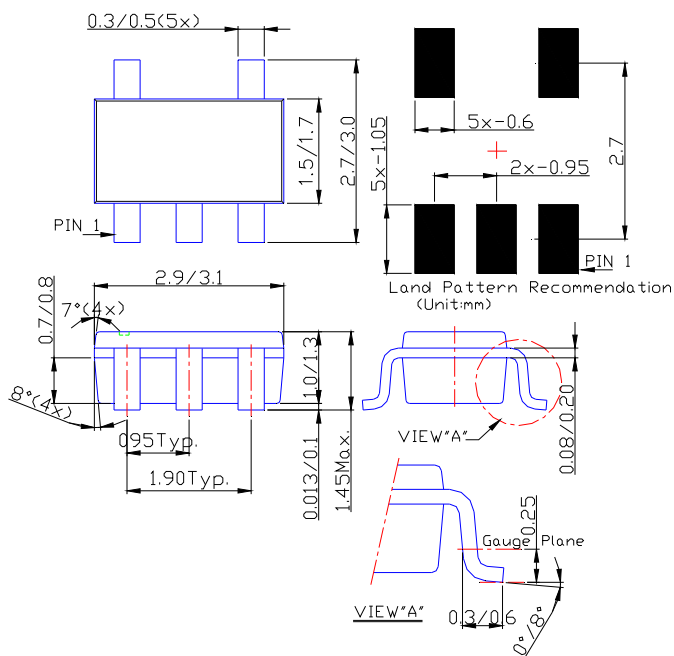


XX : Identification Code
Y : Year : 0~9
W : Week : A~Z : 1~26 week;
a~z : 27~52 week; z represents
52 and 53 week
X : A~Z : Internal code

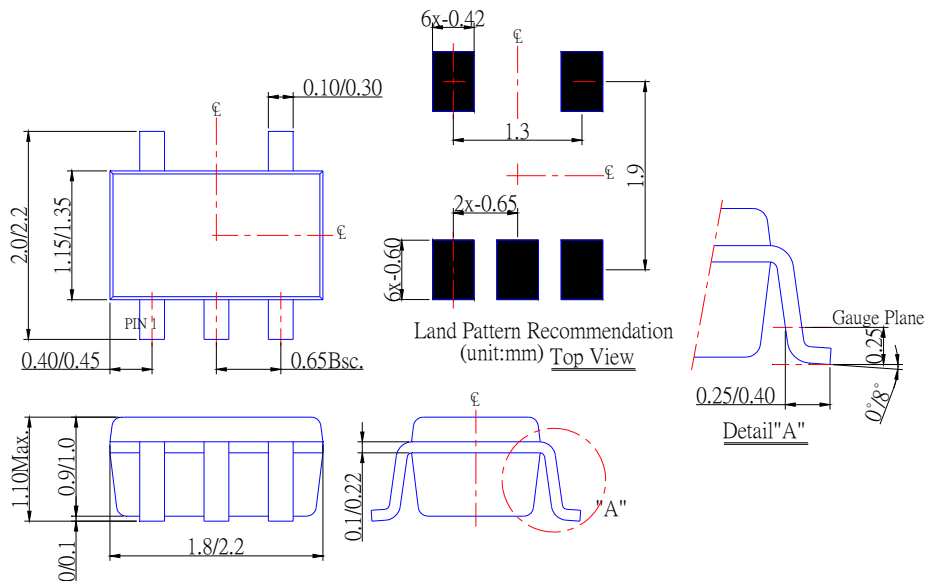
Part Number	Package	Identification Code
74LVCE1G07FZ4	DFN1410	PN

Package Outline Dimensions (All Dimensions in mm)

(1) Package Type: SOT25

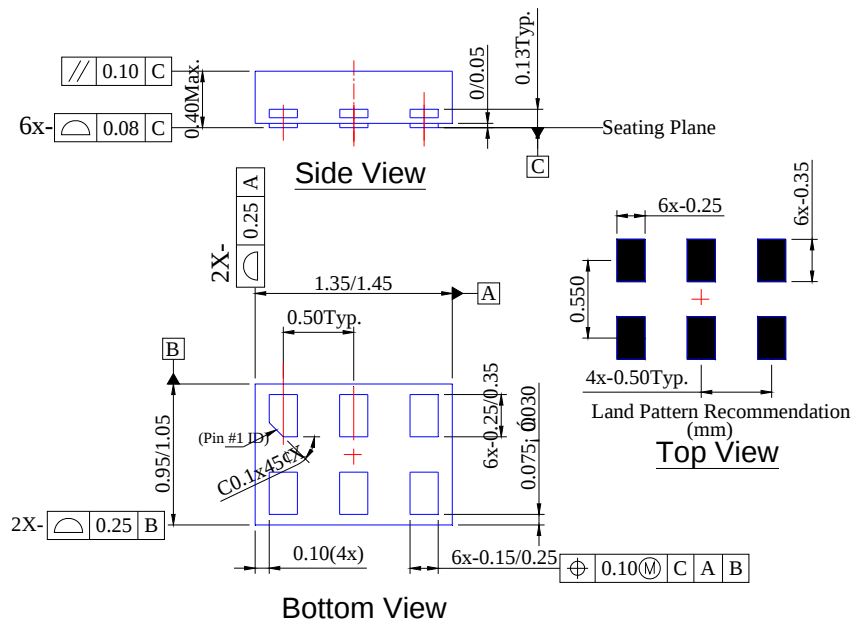


(2) Package Type: SOT353



Package Outline Dimensions (Continued)

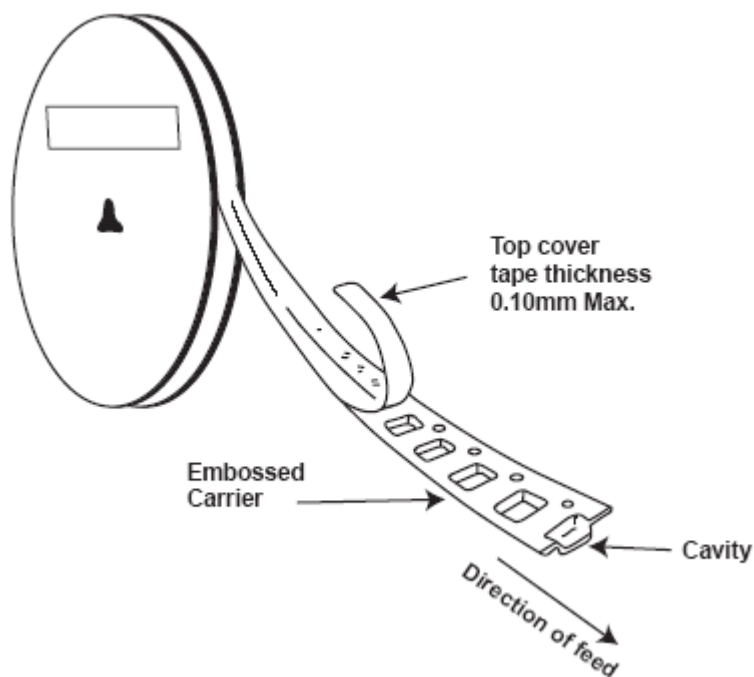
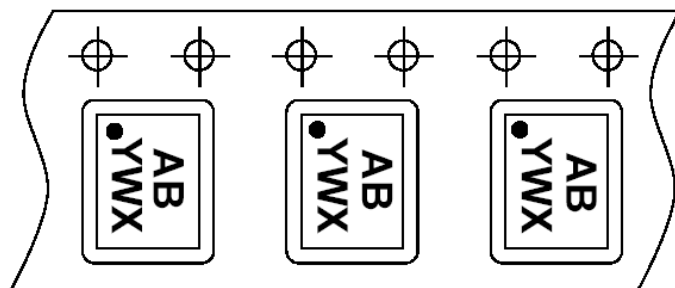
(3) Package Type: DFN1410



NEW PRODUCT

Taping Orientation (Note 7)

For DFN1410



Notes: 7. The taping orientation of the other package type can be found on our website at <http://www.diodes.com/datasheets/ap02007.pdf>

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