

## Description

The Advanced Ultra Low Power (AUP) CMOS logic family is designed for low power and extended battery life in portable applications.

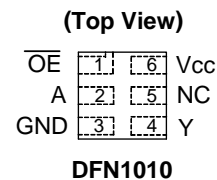
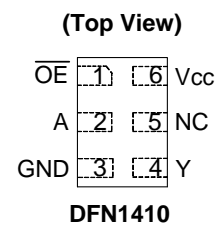
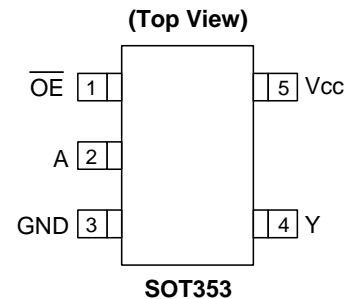
The 74AUP1G125 is a single non-inverting buffer/bus driver designed for operation over a power supply range of 0.8V to 3.6V. The device has a 3-state output that enters a high impedance state when a HIGH-level is applied to the output enable ( $\overline{OE}$ ) pin. The device is fully specified for partial power down applications using  $I_{OFF}$ . The  $I_{OFF}$  circuitry disables the output preventing damaging current backflow when the device is powered down.

## Features

- Advanced Ultra Low Power (AUP) CMOS
- Supply Voltage Range from 0.8V to 3.6V
- $\pm 4\text{mA}$  Output Drive at 3.0V
- Low Static power consumption
  - $I_{CC} < 0.9\mu\text{A}$
- Low Dynamic Power Consumption
  - $C_{PD} = 6.3\text{pF}$  (Typical at 3.6V)
- Schmitt Trigger Action at All Inputs Make the Circuit Tolerant for Slower Input Rise and Fall Time. The hysteresis is typically 250mV at  $V_{CC} = 3.0\text{V}$
- $I_{OFF}$  Supports Partial-Power-Down Mode Operation
- ESD Protection Exceeds JESD 22
  - 2000-V Human Body Model (A114-A)
  - Exceeds 1000-V Charged Device Model (C101C)
- Latch-Up Exceeds 100mA per JESD 78, Class II
- Range of Package Options SOT353, DFN1410, and DFN1010
- Leadless packages per JESD30E
  - DFN1010 denoted as X2-DFN1010-6
  - DFN1014 denoted as X2-DFN1014-6
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See <http://www.diodes.com> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

## Pin Assignments



## Applications

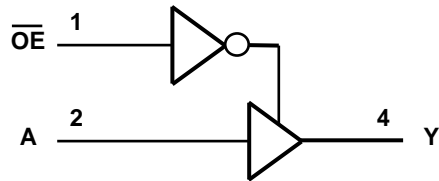
- Suited for battery and low power needs
- Wide array of products such as:
  - Tablets, E-readers
  - Cell Phones, Personal Navigation / GPS
  - MP3 players, Cameras, Video Recorders
  - PCs ultrabooks, notebooks, netbooks,
  - Computer peripherals, hard drives, CD/DVD ROM
  - TV, DVD, DVR, set top box

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**Pin Descriptions**

Pin Name	Function
$\overline{OE}$	Output Enable
A	Data Input
GND	Ground
Y	Data Output
V <sub>CC</sub>	Supply Voltage

**Logic Diagram**



**Function Table**

Inputs		Output
$\overline{OE}$	A	Y
L	H	H
L	L	L
H	X	Z

### Absolute Maximum Ratings (Note 4) (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Symbol	Parameter	Rating	Unit
ESD HBM	Human Body Model ESD Protection	2	KV
ESD CDM	Charged Device Model ESD Protection	1	KV
V <sub>CC</sub>	Supply Voltage Range	-0.5 to +4.6	V
V <sub>I</sub>	Input Voltage Range	-0.5 to +4.6	V
V <sub>O</sub>	Voltage applied to output in high or low state	-0.5 to V <sub>CC</sub> +0.5	V
I <sub>IK</sub>	Input Clamp Current V <sub>I</sub> < 0	50	mA
I <sub>OK</sub>	Output Clamp Current (V <sub>O</sub> < 0)	50	mA
I <sub>O</sub>	Continuous Output Current (V <sub>O</sub> = 0 to V <sub>CC</sub> )	±20	mA
I <sub>CC</sub>	Continuous Current Through V <sub>CC</sub>	50	mA
I <sub>GND</sub>	Continuous Current Through GND	-50	mA
T <sub>J</sub>	Operating Junction Temperature	-40 to +150	°C
T <sub>STG</sub>	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<sub>A</sub> = +25°C, unless otherwise specified.)

Symbol	Parameter	Min	Max	Unit
V <sub>CC</sub>	Operating Voltage	0.8	3.6	V
V <sub>I</sub>	Input Voltage	0	3.6	V
V <sub>O</sub>	Output Voltage	0	V <sub>CC</sub>	V
I <sub>OH</sub>	High-Level Output Current	V <sub>CC</sub> = 0.8V	-20	μA
		V <sub>CC</sub> = 1.1V	-1.1	
		V <sub>CC</sub> = 1.4V	-1.7	
		V <sub>CC</sub> = 1.65V	-1.9	
		V <sub>CC</sub> = 2.3V	-3.1	
		V <sub>CC</sub> = 3.0V	-4	
I <sub>OL</sub>	Low-Level Output Current	V <sub>CC</sub> = 0.8V	20	μA
		V <sub>CC</sub> = 1.1V	1.1	
		V <sub>CC</sub> = 1.4V	1.7	
		V <sub>CC</sub> = 1.65V	1.9	
		V <sub>CC</sub> = 2.3V	3.1	
		V <sub>CC</sub> = 3.0V	4	
Δt/ΔV	Input Transition Rise or Fall Rate	V <sub>CC</sub> = 0.8V to 3.6V	200	ns/V
T <sub>A</sub>	Operating Free-Air Temperature	-40	+125	°C

Note: 5. Unused inputs should be held at V<sub>CC</sub> or Ground.

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	V <sub>CC</sub>	T <sub>A</sub> = +25°C		T <sub>A</sub> = -40°C to +85°C		Unit
				Min	Max	Min	Max	
V <sub>IH</sub>	High-Level Input Voltage		0.8V to 1.65V	0.80 X V <sub>CC</sub>		0.80 X V <sub>CC</sub>		V
			1.65V to 1.95V	0.65 X V <sub>CC</sub>		0.65 X V <sub>CC</sub>		
			2.3V to 2.7V	1.6		1.6		
			3.0V to 3.6V	2.0		2.0		
V <sub>IL</sub>	Low-Level Input Voltage		0.8V to 1.65V		0.30 X V <sub>CC</sub>		0.30 X V <sub>CC</sub>	V
			1.65V to 1.95V		0.35 X V <sub>CC</sub>		0.35 X V <sub>CC</sub>	
			2.3V to 2.7V		0.7		0.7	
			3.0V to 3.6V		0.9		0.9	
V <sub>OH</sub>	High-Level Output Voltage	I <sub>OH</sub> = -20μA	0.8V to 3.6V	V <sub>CC</sub> - 0.1		V <sub>CC</sub> - 0.1		V
		I <sub>OH</sub> = -1.1mA	1.1V	0.75 X V <sub>CC</sub>		0.7 X V <sub>CC</sub>		
		I <sub>OH</sub> = -1.7mA	1.4V	1.11		1.03		
		I <sub>OH</sub> = -1.9mA	1.65V	1.32		1.3		
		I <sub>OH</sub> = -2.3mA	2.3V	2.05		1.97		
		I <sub>OH</sub> = -3.1mA		1.9		1.85		
		I <sub>OH</sub> = -2.7mA	3V	2.72		2.67		
		I <sub>OH</sub> = -4mA		2.6		2.55		
V <sub>OL</sub>	High-Level Input Voltage	I <sub>OL</sub> = 20μA	0.8V to 3.6V		0.1		0.1	V
		I <sub>OL</sub> = 1.1mA	1.1V		0.3 X V <sub>CC</sub>		0.3 X V <sub>CC</sub>	
		I <sub>OL</sub> = 1.7mA	1.4V		0.31		0.37	
		I <sub>OL</sub> = 1.9mA	1.65V		0.31		0.35	
		I <sub>OL</sub> = 2.3mA	2.3V		0.31		0.33	
		I <sub>OL</sub> = 3.1 mA			0.44		0.45	
		I <sub>OL</sub> = 2.7 mA	3V		0.31		0.33	
		I <sub>OL</sub> = 4 mA			0.44		0.45	
I <sub>I</sub>	Input Current	A or B Input V <sub>I</sub> = GND to 3.6V	0 to 3.6V		±0.1		±0.5	μA
I <sub>OFF</sub>	Power Down Leakage Current	V <sub>I</sub> or V <sub>O</sub> = 0V to 3.6V	0		±0.2		±0.5	μA
I <sub>OZ</sub>	Z State Leakage Current	V <sub>O</sub> = 3.6V V <sub>I</sub> = 3.6V	3.6V		±0.2		±0.5	μA
ΔI <sub>OFF</sub>	Delta Power Down Leakage Current	V <sub>I</sub> or V <sub>O</sub> = 0V to 3.6V	0 to 0.2V		0.2		0.6	μA
I <sub>CC</sub>	Supply Current	V <sub>I</sub> = GND or V <sub>CC</sub> , I <sub>O</sub> = 0	0.8V to 3.6V		0.5		0.9	μA
ΔI <sub>CC</sub>	Additional Supply Current	Data input at V <sub>CC</sub> -0.6V OE= GND I <sub>O</sub> =0 A	3.3V		40		50	μA
		OE input at V <sub>CC</sub> -0.6V Data Input = GND or V <sub>CC</sub> , I <sub>O</sub> =0 A	3.3V		110		120	μA
		OE input at V <sub>CC</sub> Data Input = GND to 3.6V I <sub>O</sub> = 0A	0.8V to 3.6V		1		1	μA

**Electrical Characteristics** (cont.) (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	V <sub>CC</sub>	T <sub>A</sub> = -40°C to +125°C		Unit
				Min	Max	
V <sub>IH</sub>	High-Level Input Voltage		0.8V to 1.65V	0.80 X V <sub>CC</sub>		V
			1.65V to 1.95V	0.70 X V <sub>CC</sub>		
			2.3V to 2.7V	1.6		
			3.0V to 3.6V	2.0		
V <sub>IL</sub>	Low-Level Input Voltage		0.8V to 1.65V		0.25X V <sub>CC</sub>	V
			1.65V to 1.95V		0.35 X V <sub>CC</sub>	
			2.3V to 2.7V		0.7	
			3.0V to 3.6V		0.9	
V <sub>OH</sub>	High-Level Output Voltage	I <sub>OH</sub> = -20μA	0.8V to 3.6V	V <sub>CC</sub> - 0.11		V
		I <sub>OH</sub> = -1.1mA	1.1V	0.6 X V <sub>CC</sub>		
		I <sub>OH</sub> = -1.7mA	1.4V	0.93		
		I <sub>OH</sub> = -1.9mA	1.65V	1.17		
		I <sub>OH</sub> = -2.3mA	2.3V	1.77		
		I <sub>OH</sub> = -3.1mA		1.67		
		I <sub>OH</sub> = -2.7mA	3V	2.40		
I <sub>OH</sub> = -4mA	2.30					
V <sub>OL</sub>	High-Level Input Voltage	I <sub>OL</sub> = 20μA	0.8V to 3.6V		0.11	V
		I <sub>OL</sub> = 1.1mA	1.1V		0.3 X V <sub>CC</sub>	
		I <sub>OL</sub> = 1.7mA	1.4V		0.41	
		I <sub>OL</sub> = 1.9mA	1.65V		0.39	
		I <sub>OL</sub> = 2.3mA	2.3V		0.36	
		I <sub>OL</sub> = 3.1mA			0.50	
		I <sub>OL</sub> = 2.7mA	3V		0.36	
		I <sub>OL</sub> = 4mA			0.50	
I <sub>I</sub>	Input Current	A or B Input V <sub>I</sub> = GND to 3.6V	0 to 3.6V		±0.75	μA
I <sub>OFF</sub>	Power Down Leakage Current	V <sub>I</sub> or V <sub>O</sub> = 0V to 3.6V	0		±3.5	μA
I <sub>OZ</sub>	Z State Leakage Current	V <sub>O</sub> = 3.6V V <sub>I</sub> = 3.6V	3.6V		±1.5	μA
ΔI <sub>OFF</sub>	Delta Power Down Leakage Current	V <sub>I</sub> or V <sub>O</sub> = 0 to 3.6V	0 to 0.2V		±2.5	μA
I <sub>CC</sub>	Supply Current	V <sub>I</sub> = GND or V <sub>CC</sub> , I <sub>O</sub> = 0	0.8V to 3.6V		3.0	μA
ΔI <sub>CC</sub>	Additional Supply Current	Data input at V <sub>CC</sub> -0.6V OE = GND I <sub>O</sub> = 0A	3.3V		75	μA
		OE input at V <sub>CC</sub> -0.6V Data Input = GND or V <sub>CC</sub> I <sub>O</sub> = 0A	3.3V		180	μA
		OE input at V <sub>CC</sub> Data Input = GND to 3.6V I <sub>O</sub> = 0 A	0.8V to 3.6V		1	μA

## Switching Characteristics

 $C_L=5\text{pF}$  see Figure 1

Parameter	From Input	TO OUTPUT	V <sub>cc</sub>	T <sub>A</sub> = +25°C			T <sub>A</sub> = -40°C to +85°C		T <sub>A</sub> = -40°C to +125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
t <sub>pd</sub>	A	Y	0.8V		20.6						ns
			1.2V ± 0.1V	2.8	5.5	10.5	2.5	11.7	2.5	12.9	
			1.5V ± 0.1V	2.0	3.9	6.1	1.9	7.3	1.9	8.1	
			1.8V ± 0.15V	1.9	3.2	4.8	1.7	6.1	1.7	6.7	
			2.5V ± 0.2V	1.6	2.6	3.6	1.4	4.3	1.4	4.9	
			3.3V ± 0.3V	1.2	2.4	3.1	1.2	3.9	1.2	4.4	
t <sub>en</sub>	$\overline{\text{OE}}$	Y	0.8V		69.9						ns
			1.2V ± 0.1V	3.1	6.1	11.8	2.9	13.9	2.9	15.4	
			1.5V ± 0.1V	2.3	4.2	6.6	2.2	7.7	2.2	8.3	
			1.8V ± 0.15V	2.0	3.4	5.1	1.9	6.2	1.9	6.8	
			2.5V ± 0.2V	1.8	2.6	3.7	1.7	4.5	1.7	5.0	
			3.3V ± 0.3V	1.7	2.4	3.1	1.7	3.5	1.7	3.9	
t <sub>dis</sub>	$\overline{\text{OE}}$	Y	0.8V		14.3						ns
			1.2V ± 0.1V	2.7	4.3	6.5	2.7	7.3	2.7	8.2	
			1.5V ± 0.1V	2.1	3.2	5.1	2.1	5.7	2.1	5.7	
			1.8V ± 0.15V	2.0	3.0	4.9	2.0	5.4	2.0	5.7	
			2.5V ± 0.2V	1.4	2.7	3.9	1.4	4.0	1.4	4.1	
			3.3V ± 0.3V	1.3	2.5	3.2	1.3	3.4	1.3	3.9	

 $C_L=10\text{pF}$  see Figure 1

Parameter	From Input	TO OUTPUT	V <sub>cc</sub>	T <sub>A</sub> = +25°C			T <sub>A</sub> = -40°C to +85°C		T <sub>A</sub> = -40°C to +125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
t <sub>pd</sub>	A	Y	0.8V		24.0						ns
			1.2V ± 0.1V	3.2	6.4	12.3	3.0	13.8	3.0	15.2	
			1.5V ± 0.1V	2.1	4.5	7.3	1.9	8.5	1.9	9.4	
			1.8V ± 0.15V	1.9	3.8	5.5	1.7	6.8	1.7	7.6	
			2.5V ± 0.2V	1.7	3.2	4.2	1.6	5.3	1.6	5.9	
			3.3V ± 0.3V	1.4	3.0	3.8	1.4	4.6	1.4	5.2	
t <sub>en</sub>	$\overline{\text{OE}}$	Y	0.8V		73.7						ns
			1.2V ± 0.1V	3.6	6.9	13.5	3.4	15.8	3.4	17.5	
			1.5V ± 0.1V	2.3	4.8	7.7	2.2	8.6	2.2	9.4	
			1.8V ± 0.15V	2.0	3.9	5.8	1.9	6.8	1.9	7.4	
			2.5V ± 0.2V	1.8	3.2	4.3	1.7	5.3	1.7	5.9	
			3.3V ± 0.3V	1.7	3.0	3.9	1.7	4.3	1.7	4.8	
t <sub>dis</sub>	$\overline{\text{OE}}$	Y	0.8V		32.7						ns
			1.2V ± 0.1V	3.4	5.4	7.9	3.4	8.8	3.4	9.9	
			1.5V ± 0.1V	2.2	4.1	5.5	2.2	6.2	2.2	7.1	
			1.8V ± 0.15V	2.2	4.2	5.6	1.9	6.3	1.9	7.1	
			2.5V ± 0.2V	1.7	3.0	5.2	1.7	5.5	1.7	6.1	
			3.3V ± 0.3V	1.9	3.8	4.8	1.7	5.0	1.7	5.6	

**Switching Characteristics** (cont.)

 $C_L=15\text{pF}$  see Figure 1

Parameter	From Input	TO OUTPUT	V <sub>CC</sub>	T <sub>A</sub> = +25°C			T <sub>A</sub> = -40°C to +85°C		T <sub>A</sub> = -40°C to +125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
t <sub>pd</sub>	A	Y	0.8V		27.4						ns
			1.2V ± 0.1V	3.6	7.2	14.1	3.3	15.8	3.3	17.5	
			1.5V ± 0.1V	3.0	5.1	8.1	2.5	9.8	2.5	10.9	
			1.8V ± 0.15V	2.2	4.3	6.3	2.0	7.9	2.0	8.8	
			2.5V ± 0.2V	2.0	3.7	4.9	1.8	6.0	1.8	6.7	
			3.3V ± 0.3V	1.5	3.5	4.4	1.5	5.4	1.5	6.1	
t <sub>en</sub>	$\overline{\text{OE}}$	Y	0.8V		77.5						ns
			1.2V ± 0.1V	4.0	7.7	15.2	3.7	17.6	3.7	19.6	
			1.5V ± 0.1V	3.0	5.3	8.4	2.5	9.8	2.5	10.7	
			1.8V ± 0.15V	2.3	4.4	6.5	2.1	7.7	2.1	8.5	
			2.5V ± 0.2V	2.1	3.6	5.0	2.0	6.1	2.0	6.8	
			3.3V ± 0.3V	2.0	3.5	4.5	1.9	4.9	1.9	5.5	
t <sub>dis</sub>	$\overline{\text{OE}}$	Y	0.8V		60.8						ns
			1.2V ± 0.1V	3.8	6.5	12.3	3.7	13.3	3.7	13.3	
			1.5V ± 0.1V	2.8	5.8	10.1	2.5	10.5	2.5	10.5	
			1.8V ± 0.15V	2.2	5.3	9.0	2.1	9.4	2.1	9.9	
			2.5V ± 0.2V	2.1	5.1	7.9	2.0	8.1	2.0	8.4	
			3.3V ± 0.3V	1.9	5.0	7.0	1.9	7.5	1.9	7.5	

 $C_L=30\text{pF}$  see Figure 1

Parameter	From Input	TO OUTPUT	V <sub>CC</sub>	T <sub>A</sub> = +25°C			T <sub>A</sub> = -40°C to +85°C		T <sub>A</sub> = -40°C to +125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
t <sub>pd</sub>	A	Y	0.8V		37.4						ns
			1.2V ± 0.1V	4.8	9.5	19.0	4.4	21.6	4.4	24.0	
			1.5V ± 0.1V	4.0	6.7	10.8	3.0	13.0	3.0	14.5	
			1.8V ± 0.15V	2.4	5.6	8.4	2.4	10.3	2.4	11.5	
			2.5V ± 0.2V	2.1	4.8	6.3	2.1	7.8	2.1	8.7	
			3.3V ± 0.3V	2.0	4.6	5.8	2.0	7.5	2.0	8.3	
t <sub>en</sub>	$\overline{\text{OE}}$	Y	0.8V		88.9						ns
			1.2V ± 0.1V	5.2	9.9	19.8	4.8	22.8	4.8	25.3	
			1.5V ± 0.1V	4.0	6.8	10.8	3.1	12.6	3.1	14.1	
			1.8V ± 0.15V	3.0	5.6	8.5	2.8	10.2	2.8	11.3	
			2.5V ± 0.2V	2.2	4.8	6.5	2.2	8.1	2.2	8.8	
			3.3V ± 0.3V	2.1	4.6	6.0	2.1	7.5	2.1	7.7	
t <sub>dis</sub>	$\overline{\text{OE}}$	Y	0.8V		49.9						ns
			1.2V ± 0.1V	6.0	9.9	13.3	4.8	16.5	4.8	16.5	
			1.5V ± 0.1V	2.8	9.0	12.0	3.1	13.2	3.1	14.2	
			1.8V ± 0.15V	2.6	8.8	11.1	2.8	12.4	2.8	13.8	
			2.5V ± 0.2V	2.6	8.7	10.9	2.6	11.6	2.6	13.5	
			3.3V ± 0.3V	2.5	8.6	10.5	2.5	10.8	2.5	13.1	

---

**Operating and Package Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

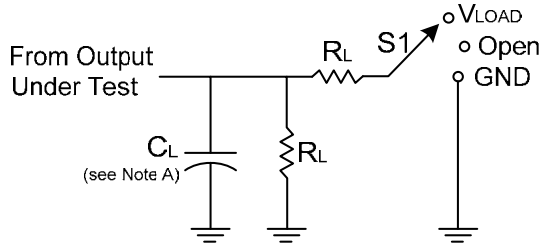
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Parameter		Test Conditions		V <sub>CC</sub>	Typ	Unit
C <sub>pd</sub>	Power Dissipation Capacitance	f = 1MHz No Load		0.8V	6.9	pF
				1.2V ± 0.1V	6.7	
				1.5V ± 0.1V	6.6	
				1.8V ± 0.15V	6.5	
				2.5V ± 0.2V	6.4	
				3.3V ± 0.3V	6.3	
C <sub>i</sub>	Input Capacitance	V <sub>i</sub> = V <sub>CC</sub> or GND		0 or 3.3V	1.5	pF
θ <sub>JA</sub>	Thermal Resistance Junction-to-Ambient	SOT353	(Note 6)		371	°C/W
		X2-DFN1410-6		430		
		X2-DFN1010-6		445		
θ <sub>JC</sub>	Thermal Resistance Junction-to-Case	SOT353	(Note 6)		143	°C/W
		X2-DFN1410-6		190		
		X2-DFN1010-6		250		

Note: 6. Test condition for SOT353, DFN1410, and DFN1010 devices mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

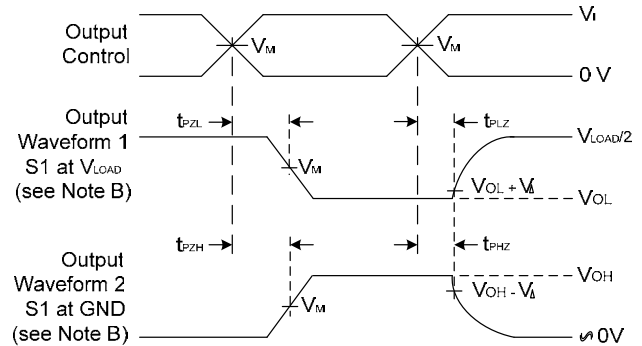
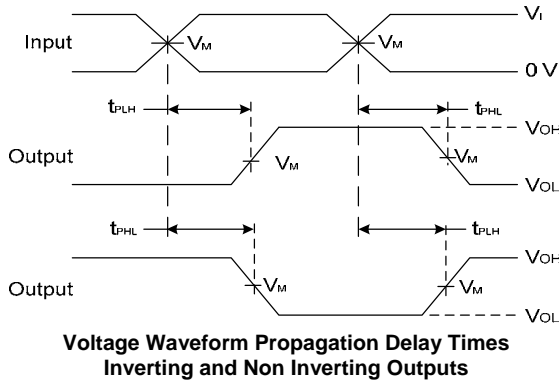
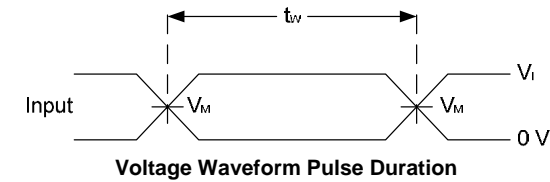


**Parameter Measurement Information**



TEST	S1	$R_L$
$t_{PLH}/t_{PHL}$	Open	1M $\Omega$
$t_{PLZ}/t_{PZL}$	$V_{LOAD}$	5K $\Omega$
$t_{PHZ}/t_{PZH}$	GND	5K $\Omega$

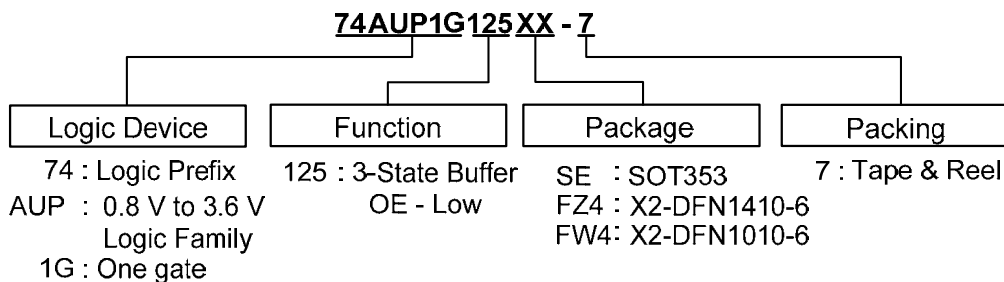
$V_{CC}$	Inputs		$V_M$	$V_{LOAD}$	$C_L$	$V_{\Delta}$
	$V_I$	$t_r/t_f$				
0.8V	$V_{CC}$	$\leq 3ns$	$V_{CC}/2$	$2 \times V_{CC}$	5, 10, 15, 30pF	0.1V
$1.2V \pm 0.1V$	$V_{CC}$	$\leq 3ns$	$V_{CC}/2$	$2 \times V_{CC}$	5, 10, 15, 30pF	0.1V
$1.5V \pm 0.1V$	$V_{CC}$	$\leq 3ns$	$V_{CC}/2$	$2 \times V_{CC}$	5, 10, 15, 30pF	0.1V
$1.8V \pm 0.15V$	$V_{CC}$	$\leq 3ns$	$V_{CC}/2$	$2 \times V_{CC}$	5, 10, 15, 30pF	0.15V
$2.5V \pm 0.2V$	$V_{CC}$	$\leq 3ns$	$V_{CC}/2$	$2 \times V_{CC}$	5, 10, 15, 30pF	0.15V
$3.3V \pm 0.3V$	$V_{CC}$	$\leq 3ns$	$V_{CC}/2$	$2 \times V_{CC}$	5, 10, 15, 30pF	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  $\leq 10$  MHz.
  - C. Inputs are measured separately one transition per measurement.
  - D.  $t_{PLZ}$  and  $t_{PHZ}$  are the same as  $t_{dis}$ .
  - E.  $t_{PZL}$  and  $t_{PZH}$  are the same as  $t_{EN}$ .
  - F.  $t_{PLH}$  and  $t_{PHL}$  are the same as  $t_{PD}$ .

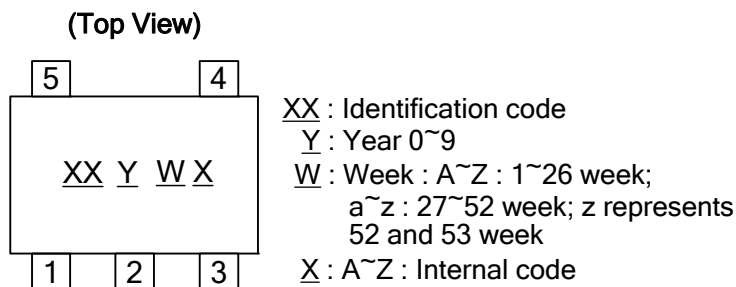
## Ordering Information



Part Number	Package Code	Packaging	7" Tape and Reel	
			Quantity	Part Number Suffix
74AUP1G125SE-7	SE	SOT353	3000/Tape & Reel	-7
74AUP1G125FZ4-7	FZ4	X2-DFN1410-6	5000/Tape & Reel	-7
74AUP1G125FW4-7	FW4	X2-DFN1010-6	5000/Tape & Reel	-7

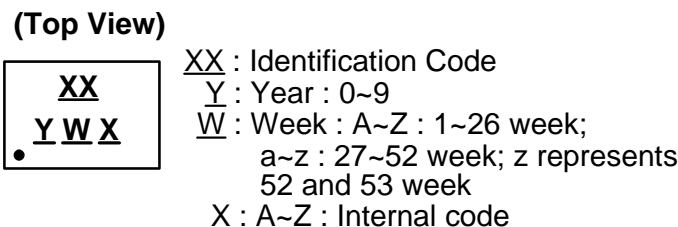
## Marking Information

### (1) SOT353



Part Number	Package	Identification Code
74AUP1G125SE	SOT353	XY

### (2) X2-DFN1410-6 and X2-DFN1010-6

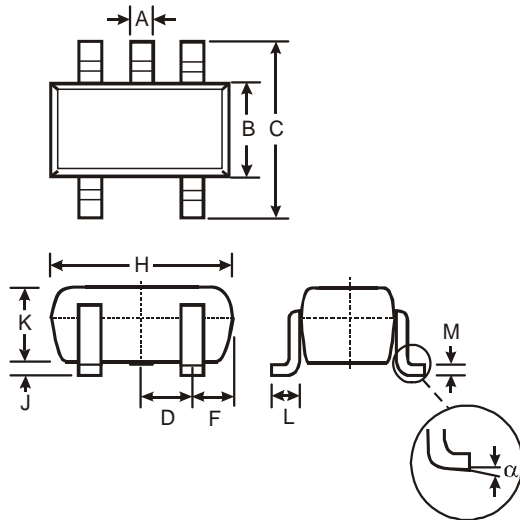


Part Number	Package	Identification Code
74AUP1G125FZ4	X2-DFN1410-6	XY
74AUP1G125FW4	X2-DFN1010-6	XY

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

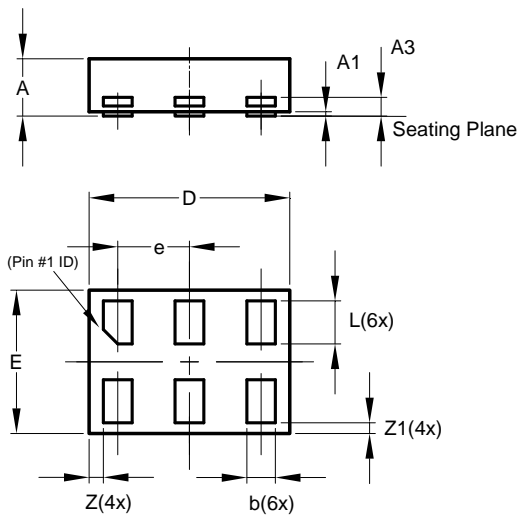
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.

**(1) SOT353**



SOT353			
Dim	Min	Max	Typ
A	0.10	0.30	0.25
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	0.65 Typ		
F	0.40	0.45	0.425
H	1.80	2.20	2.15
J	0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.22	0.11
α	0°	8°	-
All Dimensions in mm			

**(2) X2-DFN1410-6**

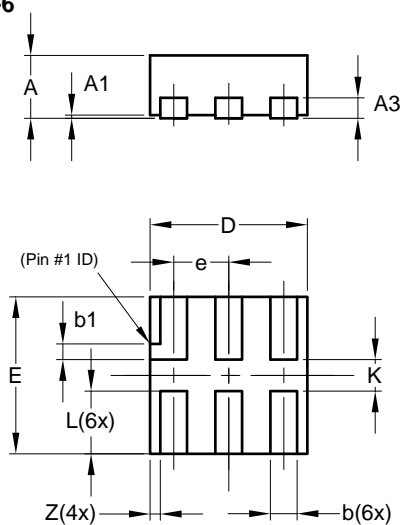


X2-DFN1410-6			
Dim	Min	Max	Typ
A	—	0.40	0.39
A1	0.00	0.05	0.02
A3	—	—	0.13
b	0.15	0.25	0.20
D	1.35	1.45	1.40
E	0.95	1.05	1.00
e	—	—	0.50
L	0.25	0.35	0.30
Z	—	—	0.10
Z1	0.045	0.105	0.075
All Dimensions in mm			

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

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

**(3) X2-DFN1010-6**

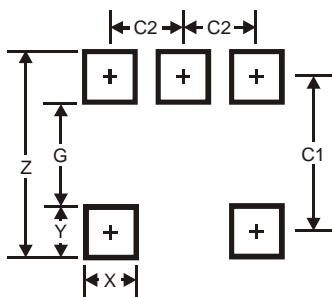


X2-DFN1010-6			
Dim	Min	Max	Typ
A	—	0.40	0.39
A1	0.00	0.05	0.02
A3	—	—	0.13
b	0.14	0.20	0.17
b1	0.05	0.15	0.10
D	0.95	1.05	1.00
E	0.95	1.05	1.00
e	—	—	0.35
L	0.35	0.45	0.40
K	0.15	—	—
Z	—	—	0.065
All Dimensions in mm			

**Suggested Pad Layout**

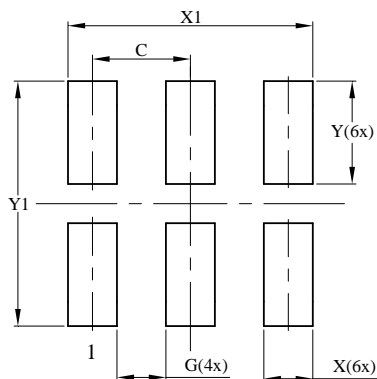
Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version

**(1) SOT353**



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

**(2) X2-DFN1410-6**

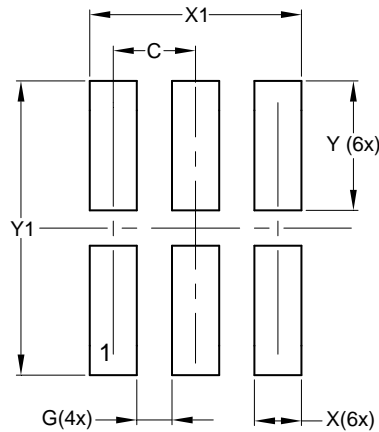


Dimensions	Value (in mm)
C	0.500
G	0.250
X	0.250
X1	1.250
Y	0.525
Y1	1.250

### Suggested Pad Layout (cont.)

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

#### (3) X2-DFN1010-6



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

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