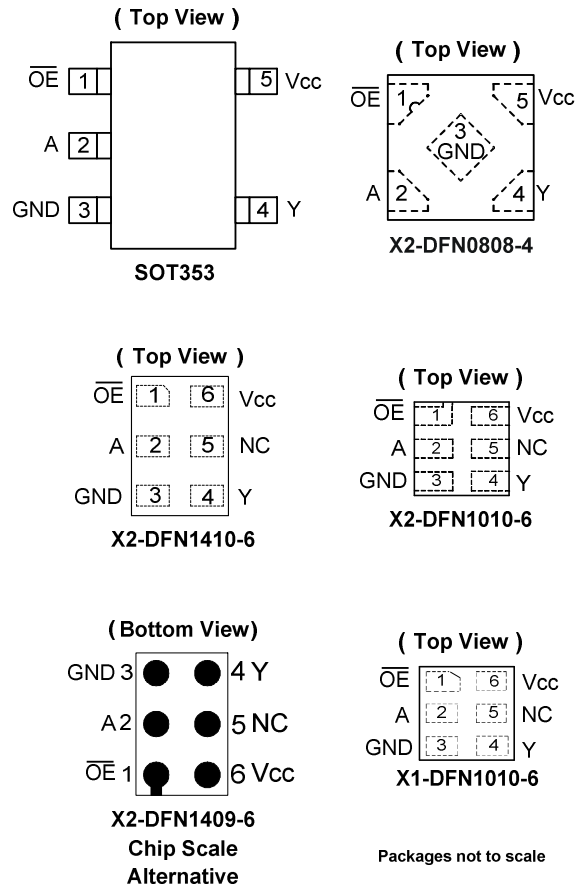


Description

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 three-state output that enters a high-impedance state when a high level is applied to the output enable (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.

Pin Assignments



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 makes 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)
 Exceeds 1000-V Charged Device Model (C101)
- Latch-Up Exceeds 100mA per JESD 78, Class I
- Leadless Packages Named per JESD30E
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- Halogen and Antimony Free. "Green" Device (Note 3)**

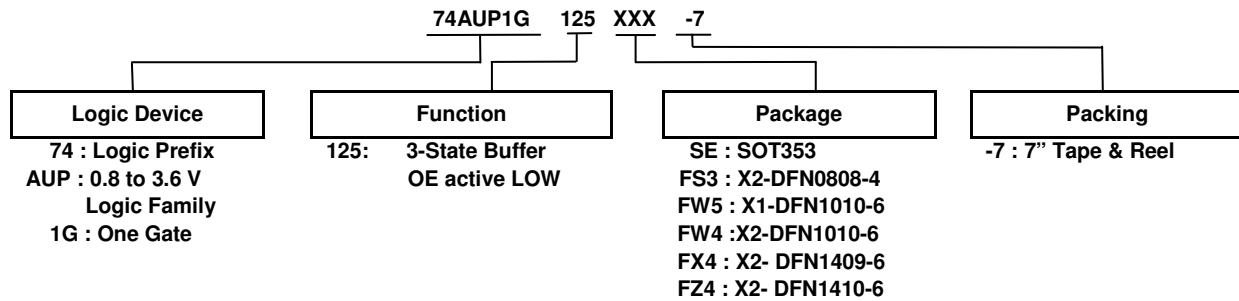
Notes:

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. See http://www.diodes.com/quality/lead_free.html 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.

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, SSDs, CD/DVD ROMs
 - TVs, DVDs, DVRs, Set-Top Boxes

Ordering Information



Device	Package Code	Package (Notes 4 & 5)	Package Size	7" Tape and Reel	
				Quantity	Part Number Suffix
74AUP1G125SE-7	SE	SOT353	2.0mm x 2.0mm x 1.1mm 0.65 mm lead pitch	3,000/Tape & Reel	-7
74AUP1G125FS3-7	FS3	X2-DFN0808-4	0.8mm x 0.8mm x 0.35mm 0.5 mm pad pitch (diamond)	5,000/Tape & Reel	-7
74AUP1G125FW5-7	FW5	X1-DFN1010-6	1.0mm x 1.0mm x 0.5mm 0.35 mm pad pitch	5,000/Tape & Reel	-7
74AUP1G125FW4-7	FW4	X2-DFN1010-6	1.0mm x 1.0mm x 0.4mm 0.35 mm pad pitch	5,000/Tape & Reel	-7
74AUP1G125FX4-7	FX4	X2-DFN1409-6 Chip Scale Alternative	1.4mm x 0.9mm x 0.4mm 0.5 mm pad pitch	5,000/Tape & Reel	-7
74AUP1G125FZ4-7	FZ4	X2-DFN1410-6	1.4mm x 1.0mm x 0.4mm 0.5 mm pad pitch	5,000/Tape & Reel	-7

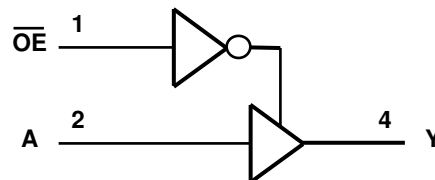
Notes: 4. Pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.

5. The taping orientation is located on our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Pin Descriptions

Pin Name	Function
$\overline{\text{OE}}$	Output Enable
A	Data Input
GND	Ground
Y	Data Output
V _{CC}	Supply Voltage

Logic Diagram



Function Table

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

Absolute Maximum Ratings (Notes 6 & 7) (@T_A = +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 _{CC}	Supply Voltage Range	-0.5 to +4.6	V
V _I	Input Voltage Range	-0.5 to +4.6	V
V _O	Voltage Applied to Output in High or Low State	-0.5 to V _{CC} +0.5	V
I _{IK}	Input Clamp Current V _I < 0	50	mA
I _{OK}	Output Clamp Current (V _O < 0)	50	mA
I _O	Continuous Output Current (V _O = 0 to V _{CC})	±20	mA
I _{CC}	Continuous Current Through V _{CC}	50	mA
I _{GND}	Continuous Current Through GND	-50	mA
T _J	Operating Junction Temperature	-40 to +150	°C
T _{STG}	Storage Temperature	-65 to +150	°C

- Notes:
- 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.
 - Forcing the maximum allowed voltage could cause a condition exceeding the maximum current, or conversely, forcing the maximum current could cause a condition exceeding the maximum voltage. The ratings of both current and voltage must be maintained within the controlled range.

Recommended Operating Conditions (Note 8) (@T_A = +25°C, unless otherwise specified.)

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

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

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

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

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

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

Switching Characteristics

 $C_L = 5\text{pF}$, See Figure 1

Parameter	From Input	To Output	V_{CC}	$T_A = +25^\circ\text{C}$			$T_A = -40^\circ\text{C to } +85^\circ\text{C}$		$T_A = -40^\circ\text{C to } +125^\circ\text{C}$		Unit
				Min	Typ	Max	Min	Max	Min	Max	
t_{pd}	A	Y	0.8V	—	20.6	—	—	—	—	—	ns
			$1.2\text{V} \pm 0.1\text{V}$	2.8	5.5	10.5	2.5	11.7	2.5	12.9	
			$1.5\text{V} \pm 0.1\text{V}$	2.0	3.9	6.1	1.9	7.3	1.9	8.1	
			$1.8\text{V} \pm 0.15\text{V}$	1.9	3.2	4.8	1.7	6.1	1.7	6.7	
			$2.5\text{V} \pm 0.2\text{V}$	1.6	2.6	3.6	1.4	4.3	1.4	4.9	
			$3.3\text{V} \pm 0.3\text{V}$	1.2	2.4	3.1	1.2	3.9	1.2	4.4	
t_{en}	$\overline{\text{OE}}$	Y	0.8V	—	69.9	—	—	—	—	—	ns
			$1.2\text{V} \pm 0.1\text{V}$	3.1	6.1	11.8	2.9	13.9	2.9	15.4	
			$1.5\text{V} \pm 0.1\text{V}$	2.3	4.2	6.6	2.2	7.7	2.2	8.3	
			$1.8\text{V} \pm 0.15\text{V}$	2.0	3.4	5.1	1.9	6.2	1.9	6.8	
			$2.5\text{V} \pm 0.2\text{V}$	1.8	2.6	3.7	1.7	4.5	1.7	5.0	
			$3.3\text{V} \pm 0.3\text{V}$	1.7	2.4	3.1	1.7	3.5	1.7	3.9	
t_{dis}	$\overline{\text{OE}}$	Y	0.8V	—	14.3	—	—	—	—	—	ns
			$1.2\text{V} \pm 0.1\text{V}$	2.7	4.3	6.5	2.7	7.3	2.7	8.2	
			$1.5\text{V} \pm 0.1\text{V}$	2.1	3.2	5.1	2.1	5.7	2.1	5.7	
			$1.8\text{V} \pm 0.15\text{V}$	2.0	3.0	4.9	2.0	5.4	2.0	5.7	
			$2.5\text{V} \pm 0.2\text{V}$	1.4	2.7	3.9	1.4	4.0	1.4	4.1	
			$3.3\text{V} \pm 0.3\text{V}$	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_{CC}	$T_A = +25^\circ\text{C}$			$T_A = -40^\circ\text{C to } +85^\circ\text{C}$		$T_A = -40^\circ\text{C to } +125^\circ\text{C}$		Unit
				Min	Typ	Max	Min	Max	Min	Max	
t_{pd}	A	Y	0.8V	—	24.0	—	—	—	—	—	ns
			$1.2\text{V} \pm 0.1\text{V}$	3.2	6.4	12.3	3.0	13.8	3.0	15.2	
			$1.5\text{V} \pm 0.1\text{V}$	2.1	4.5	7.3	1.9	8.5	1.9	9.4	
			$1.8\text{V} \pm 0.15\text{V}$	1.9	3.8	5.5	1.7	6.8	1.7	7.6	
			$2.5\text{V} \pm 0.2\text{V}$	1.7	3.2	4.2	1.6	5.3	1.6	5.9	
			$3.3\text{V} \pm 0.3\text{V}$	1.4	3.0	3.8	1.4	4.6	1.4	5.2	
t_{en}	$\overline{\text{OE}}$	Y	0.8V	—	73.7	—	—	—	—	—	ns
			$1.2\text{V} \pm 0.1\text{V}$	3.6	6.9	13.5	3.4	15.8	3.4	17.5	
			$1.5\text{V} \pm 0.1\text{V}$	2.3	4.8	7.7	2.2	8.6	2.2	9.4	
			$1.8\text{V} \pm 0.15\text{V}$	2.0	3.9	5.8	1.9	6.8	1.9	7.4	
			$2.5\text{V} \pm 0.2\text{V}$	1.8	3.2	4.3	1.7	5.3	1.7	5.9	
			$3.3\text{V} \pm 0.3\text{V}$	1.7	3.0	3.9	1.7	4.3	1.7	4.8	
t_{dis}	$\overline{\text{OE}}$	Y	0.8V	—	32.7	—	—	—	—	—	ns
			$1.2\text{V} \pm 0.1\text{V}$	3.4	5.4	7.9	3.4	8.8	3.4	9.9	
			$1.5\text{V} \pm 0.1\text{V}$	2.2	4.1	5.5	2.2	6.2	2.2	7.1	
			$1.8\text{V} \pm 0.15\text{V}$	2.2	4.2	5.6	1.9	6.3	1.9	7.1	
			$2.5\text{V} \pm 0.2\text{V}$	1.7	3.0	5.2	1.7	5.5	1.7	6.1	
			$3.3\text{V} \pm 0.3\text{V}$	1.9	3.8	4.8	1.7	5.0	1.7	5.6	

Switching Characteristics (continued)

 $C_L=15\text{pF}$, See Figure 1

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

 $C_L=30\text{pF}$, See Figure 1

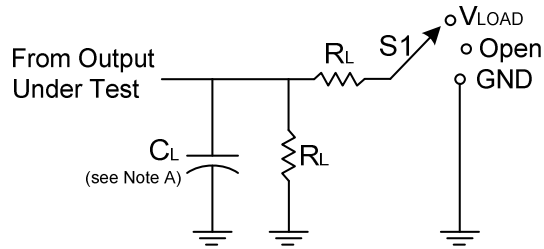
Parameter	From Input	To Output	V_{CC}	$T_A = +25^\circ\text{C}$			$T_A = -40^\circ\text{C to } +85^\circ\text{C}$		$T_A = -40^\circ\text{C to } +125^\circ\text{C}$		Unit
				Min	Typ	Max	Min	Max	Min	Max	
t_{pd}	A	Y	0.8V	—	37.4	—	—	—	—	—	ns
			$1.2\text{V} \pm 0.1\text{V}$	4.8	9.5	19.0	4.4	21.6	4.4	24.0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

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

Parameter		Test Conditions		V _{CC}	Typ	Unit
C _{pd}	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 _i	Input Capacitance	V _i = V _{CC} or GND		0V or 3.3V	1.5	pF
θ _{JA}	Thermal Resistance Junction-to-Ambient	SOT353	(Note 9)	—	371	°C/W
		X2-DFN0808-4		—	430	
		X1-DFN1010-6		—	435	
		X2-DFN1010-6		—	445	
		X2-DFN1409-6		—	470	
		X2-DFN1410-6		—	460	
θ _{JC}	Thermal Resistance Junction-to-Case	SOT353	(Note 9)	—	143	°C/W
		X2-DFN0808-4		—	240	
		X1-DFN1010-6		—	250	
		X2-DFN1010-6		—	250	
		X2-DFN1409-6		—	275	
		X2-DFN1410-6		—	265	

Note: 9. Test condition for each of the six package types: Device 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 Ω
t_{PLZ}/t_{PZL}	Vload	5k Ω
t_{PHZ}/t_{PZH}	GND	5k Ω

V_{CC}	Inputs		V_M	V_{LOAD}	C_L	V_{Δ}
	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

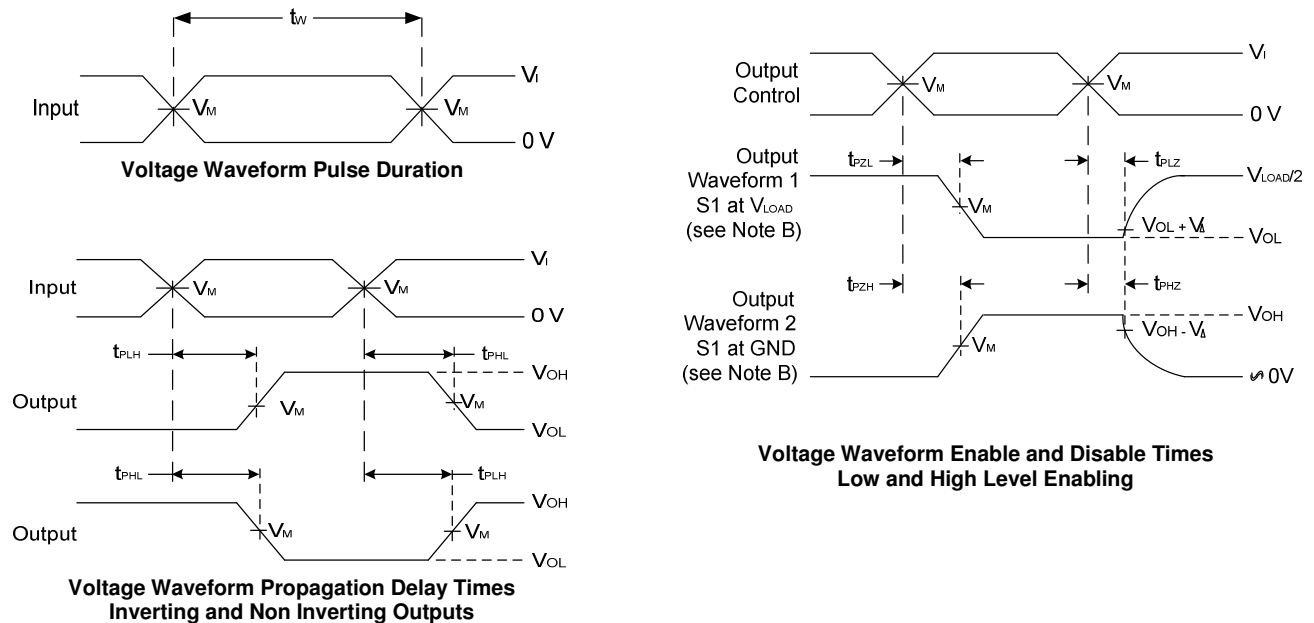


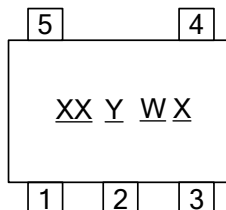
Figure 1 Load Circuit and Voltage Waveforms

- Notes:
- A. Includes test lead and test apparatus capacitance.
 - B. All pulses are supplied at pulse repetition rate $\leq 10MHz$.
 - 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} .

Marking Information

(1) SOT353

(Top View)



XX : Identification code

Y : Year 0~9

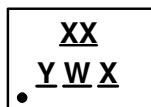
W : Week : A~Z : 1~26 week;
a~z : 27~52 week; z represents
52 and 53 week

X : A~Z : Internal code

Part Number	Package	Identification Code
74AUP1G125SE-7	SOT353	XY

(2) X2-DFN0808-4, X1-DFN1010-6, X2-DFN1010-6, X2-DFN1409-6 and X2-DFN1410-6

(Top View)



XX : Identification Code

Y : Year : 0~9

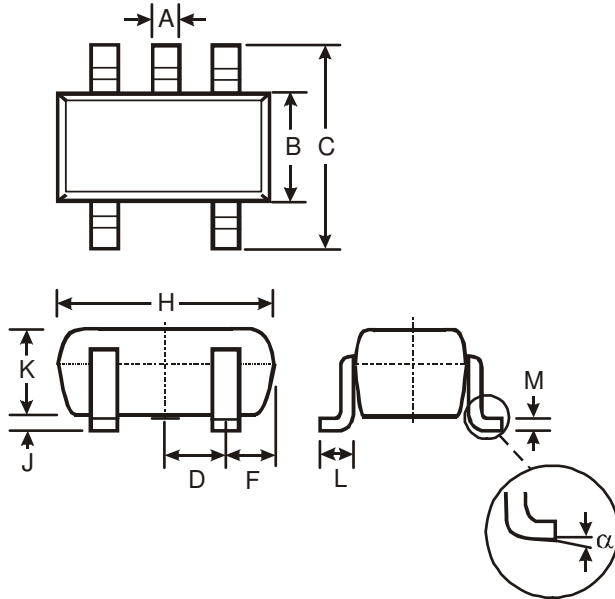
W : Week : A~Z : 1~26 week;
a~z : 27~52 week; z represents
52 and 53 week

X : A~Z : Internal code

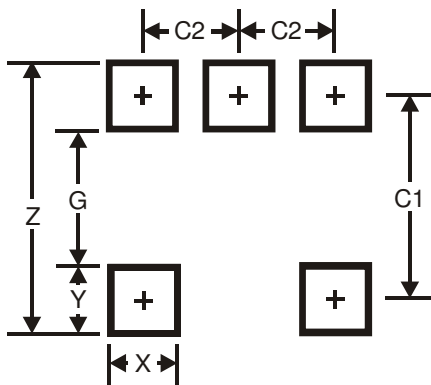
Part Number	Package	Identification Code
74AUP1G125FS3-7	X2-DFN0808-4	YY
74AUP1G125FW5-7	X1-DFN1010-6	QX
74AUP1G125FW4-7	X2-DFN1010-6	XY
74AUP1G125FX4-7	X2-DFN1409-6	HP
74AUP1G125FZ4-7	X2-DFN1410-6	XY

SOT353 Package Outline Dimensions and Suggested Pad Layout

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



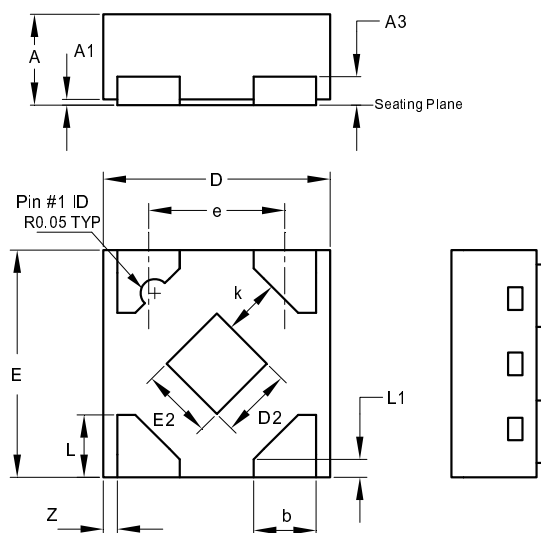
SOT353			
Dim	Min	Max	Typ
A	0.10	0.30	0.25
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	0.65 Typ		
F	0.40	0.45	0.425
H	1.80	2.20	2.15
J	0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.22	0.11
α	0°	8°	-
All Dimensions in mm			



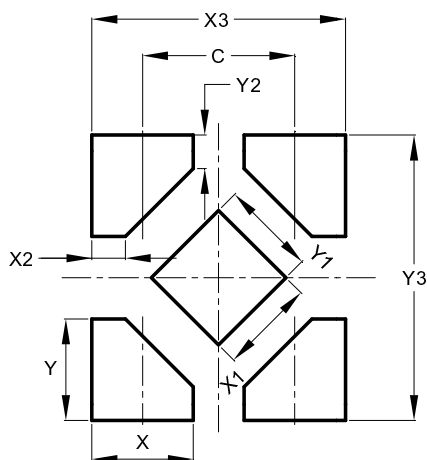
Dimensions	Value (in mm)
Z	2.5
G	1.3
X	0.42
Y	0.6
C1	1.9
C2	0.65

X2-DFN0808-4 Package Outline Dimensions and Suggested Pad Layout

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



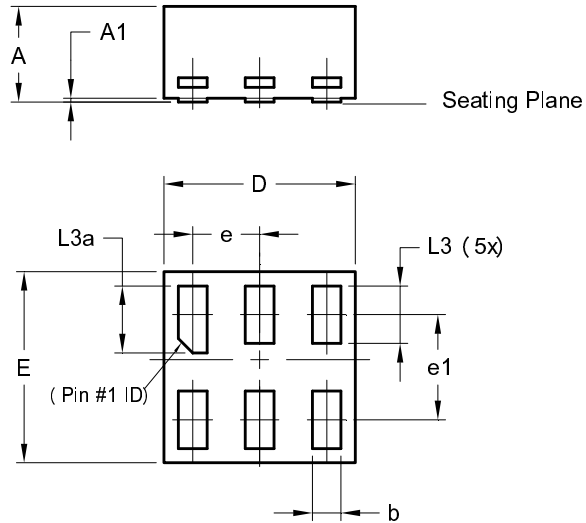
X2-DFN0808-4			
Dim	Min	Max	Typ
A	0.25	0.35	0.30
A1	0	0.04	0.02
A3	-	-	0.13
b	0.17	0.27	0.22
D	0.75	0.85	0.80
D2	0.15	0.35	0.25
E	0.75	0.85	0.80
E2	0.15	0.35	0.25
e	-	-	0.48
k	0.20	-	-
L	0.17	0.27	0.22
L1	0.02	0.12	0.07
z	-	-	0.05
All Dimensions in mm			



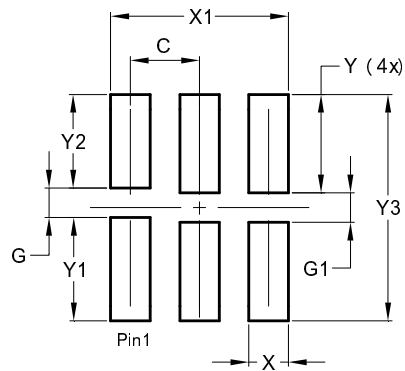
Dimensions	Value
C	0.480
X	0.320
X1	0.300
X2	0.106
X3	0.800
Y	0.320
Y1	0.300
Y2	0.106
Y3	0.900

X1-DFN1010-6 (Type B) Package Outline Dimensions and Suggested Pad Layout

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



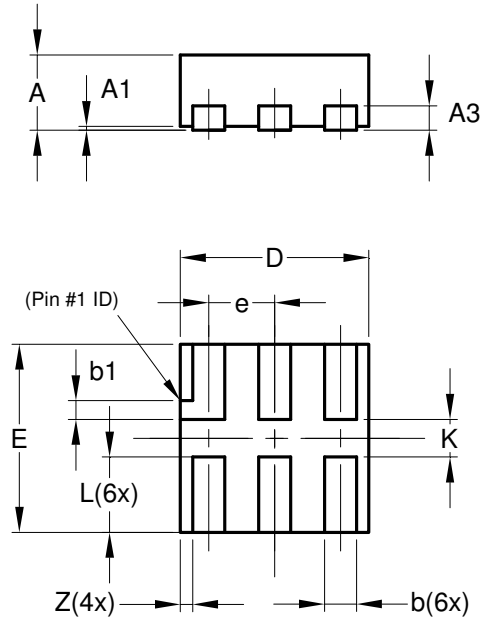
X1-DFN1010-6 (Type B)			
Dim	Min	Max	Typ
A	-	0.50	0.39
A1	-	0.04	-
b	0.12	0.20	0.15
D	0.95	1.050	1.00
E	0.95	1.050	1.00
e	0.35 BSC		
e1	0.55 BSC		
L3	0.27	0.30	0.30
L3a	0.32	0.40	0.35
All Dimensions in mm			



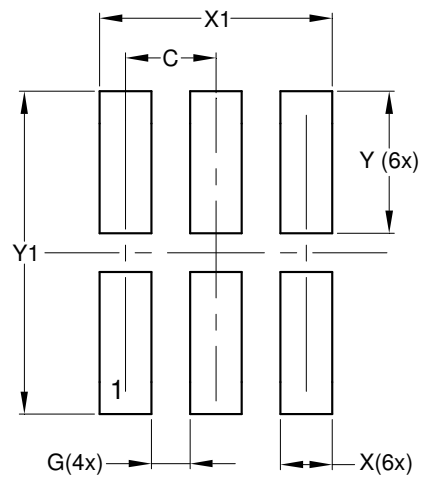
Dimensions	Value (in mm)
C	0.350
G	0.150
G1	0.150
X	0.200
X1	0.900
Y	0.500
Y1	0.525
Y2	0.475
Y3	1.150

X2-DFN1010-6 Package Outline Dimensions and Suggested Pad Layout

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



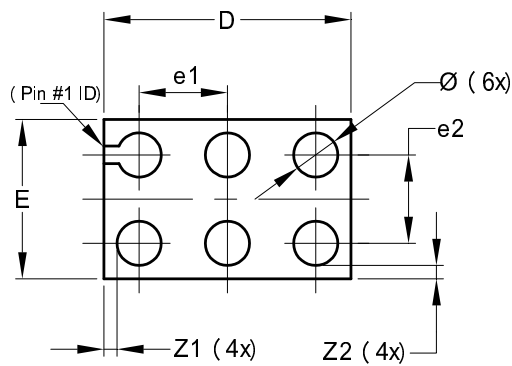
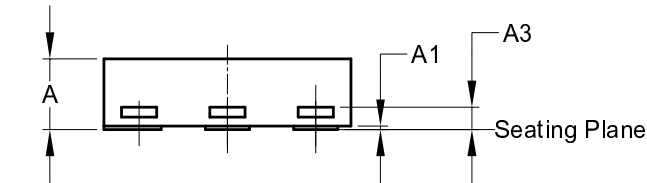
X2-DFN1010-6			
Dim	Min	Max	Typ
A	—	0.40	0.39
A1	0.00	0.05	0.02
A3	—	—	0.13
b	0.14	0.20	0.17
b1	0.05	0.15	0.10
D	0.95	1.05	1.00
E	0.95	1.05	1.00
e	—	—	0.35
L	0.35	0.45	0.40
K	0.15	—	—
Z	—	—	0.065
All Dimensions in mm			



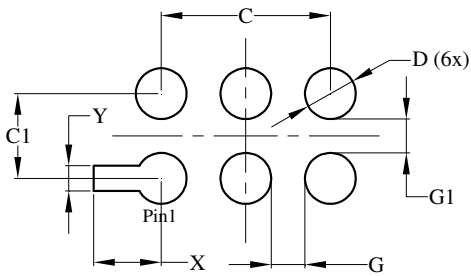
Dimensions	Value (in mm)
C	0.350
G	0.150
X	0.200
X1	0.900
Y	0.550
Y1	1.250

X2-DFN1409-6 Package Outline Dimensions and Suggested Pad Layout

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



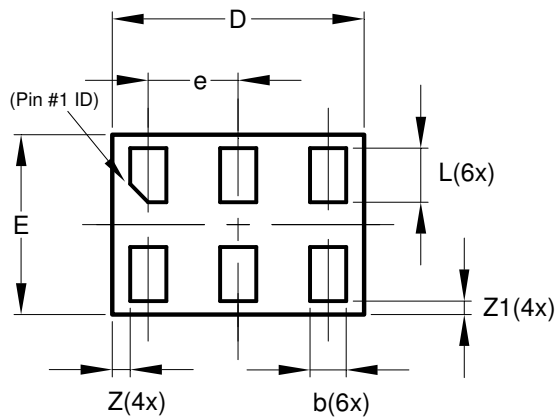
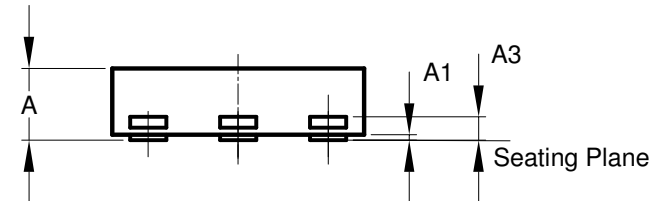
X2-DFN1409-6			
Dim	Min	Max	Typ
A	-	0.40	0.39
A1	0	0.05	0.02
A3	-	-	0.13
Ø	0.20	0.30	0.25
D	1.35	1.45	1.40
E	0.85	0.95	0.90
e1	-	-	0.50
e2	-	-	0.50
Z1	-	-	0.075
Z2	-	-	0.075
All Dimensions in mm			



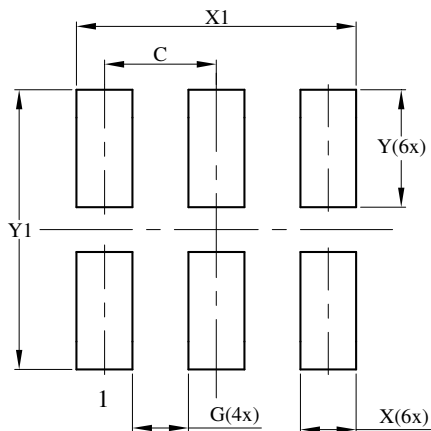
Dimensions	Value (in mm)
C	1.000
C1	0.500
D	0.300
G	0.200
G1	0.200
X	0.400
Y	0.150

X2-DFN1410-6 Package Outline Dimensions and Suggested Pad Layout

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



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			



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

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