

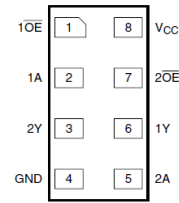
Description

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

The 74AUP2G125 is a dual 3-State Buffer. Each buffer has an individual output enable pin while asserted HIGH will place the output in a high impedance state. The device is designed for operation over a power supply range of 0.8 V to 3.6 V. 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

(Top View)



X2-DFN1210-8

Features

- Advanced Ultra Low Power (AUP) CMOS
- Supply Voltage Range from 0.8 V to 3.6 V
- ± 4 mA Output Drive at 3.0 V
- Low Static Power Consumption
- $I_{CC} < 0.9$ μ A
- Low Dynamic Power Consumption
- $C_{PD} = 6$ pF Typical at 3.6 V
- Schmitt trigger action at all inputs make the circuit tolerant for slower input rise and fall time. The hysteresis is typically 250 mV at $V_{CC} = 3.0$ V
- I_{OFF} Supports Partial-Power-Down Mode Operation
- ESD Protection per JESD 22
 - Exceeds 200-V Machine Model (A115)
 - Exceeds 2000-V Human Body Model (A114)
 - Exceeds 1000-V Charged Device Model (C101)
- Latch-Up Exceeds 100mA per JESD 78, Class I
- Leadless Packages per JESD30E
- DFN1210 Denoted as X2-DFN1210-8
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

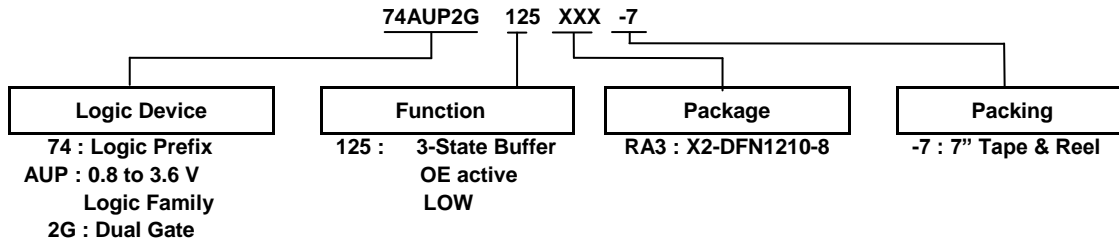
Applications

- 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, SSD, CD/DVD ROM
 - TV, DVD, DVR, Set-Top Box

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.

Ordering Information



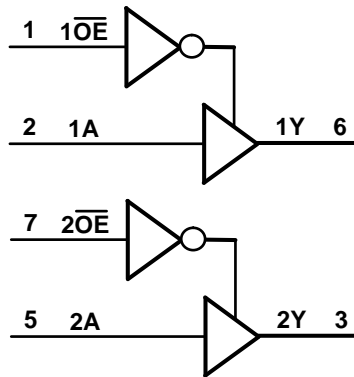
| Device | Package Code | Package (Notes 4 & 5) | Package Size | 7" Tape and Reel | |
|-----------------|--------------|-----------------------|--|-------------------|--------------------|
| | | | | Quantity | Part Number Suffix |
| 74AUP2G125RA3-7 | RA3 | X2-DFN1210-8 | 1.2mm X 1.0 mm X 0.35mm 0.3 mm lead 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 | Pin NO. | Description |
|-------------------|---------|--------------------------|
| 1 \overline{OE} | 1 | Output Enable active LOW |
| 1A | 2 | Data Input |
| 2Y | 3 | Data Output |
| GND | 4 | Ground |
| 2A | 5 | Data Input |
| 1Y | 6 | Data Output |
| 2 \overline{OE} | 7 | Output Enable active LOW |
| V _{CC} | 8 | Supply Voltage |

Logic Diagram



Function Table

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

Absolute Maximum Ratings (Notes 6 & 7)

| Symbol | Description | 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)

| 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: 8. Unused inputs should be held at V_{CC} or Ground.

Electrical Characteristics

| 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} = 3.1mA | | — | 0.44 | — | 0.45 | |
| | | I _{OL} = 2.7mA | 3V | — | 0.31 | — | 0.33 | |
| I _{OL} = 4mA | — | 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 _{OZ} | Z-State Leakage Current | V _I or V _O = 0V to 3.6V | 0 to 3.6V | — | 0.2 | — | ± 0.5 | μA |
| I _{OFF} | Power Down Leakage Current | V _I or V _O = 0V to 3.6V | 0 V | — | ± 0.2 | — | ± 0.5 | μA |
| ΔI _{OFF} | Delta Power Down Leakage Current | V _I or V _O = 0V to 3.6V | 0 V to 0.2V | — | 0.2 | — | 0.6 | μA |
| I _{CC} | Supply Current | V _I = GND or V _{CC} , I _O = 0 | 0.8 V to 3.6V | — | 0.5 | — | 0.9 | μA |
| ΔI _{CC} | Additional Supply Current | Data Input at V _{CC} - 0.6 V OE = GND I _O = 0 A | 3.3V | — | 40 | — | 50 | μA |
| | | OE Input at V _{CC} - 0.6 V Data Input = GND or V _{CC} I _O = 0 A | 3.3V | — | 110 | — | 120 | μA |
| | | OE Input at V _{CC} Data Input = GND to 3.6 V I _O = 0 A | 0.8V to 3.6V | — | 1 | — | 1 | μA |

Electrical Characteristics (cont.)

| Symbol | Parameter | Test Conditions | V _{CC} | T _A = -40°C 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 | — | 0.30 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 | — | 0.33 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 _{OZ} | Z-State Leakage Current | V _I or V _O = 0V to 3.6V | 0 to 3.6V | — | ± 1.5 | μA |
| I _{OFF} | Power Down Leakage Current | V _I or V _O = 0V to 3.6V | 0 | — | ± 3.5 | μA |
| ΔI _{OFF} | Delta Power Down Leakage Current | V _I or V _O = 0V to 3.6V | 0V to 0.2V | — | ± 2.5 | μA |
| 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} - 0.6 V OE = GND I _O = 0 A | 3.3V | — | 75 | μA |
| | | OE Input at V _{CC} - 0.6 V Data Input = GND or V _{CC} I _O = 0 A | 3.3V | — | 180 | μA |
| | | OE Input at V _{CC} Data Input = GND to 3.6 V I _O = 0 A | 0.8V to 3.6V | — | 1 | μA |

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

| Parameter | | Test Conditions | | V _{CC} | Typ | Unit |
|-----------------|--|---|----------|-----------------|-----|------|
| C _{pd} | Power Dissipation Capacitance per gate | f = 1MHz Output Enabled No Load | | 0.8V | 6.5 | pF |
| | | | | 1.2V ± 0.1V | 6.3 | |
| | | | | 1.5V ± 0.1V | 6.3 | |
| | | | | 1.8V ± 0.15V | 6.2 | |
| | | | | 2.5V ± 0.2V | 6.2 | |
| | | | | 3.3V ± 0.3V | 6.1 | |
| C _i | Input Capacitance | V _i = V _{CC} or GND | | 0V or 3.3V | 1.5 | pF |
| C _o | Output Capacitance | Output Enabled VO=Gnd | | 0 V | 2.9 | pF |
| | | Output Disabled VO=Gnd or Vcc | | 0V or 3.6V | 2.1 | pF |
| θ _{JA} | Thermal Resistance Junction-to-Ambient | X2-DFN1210-8 | (Note 9) | — | 395 | °C/W |
| θ _{JC} | Thermal Resistance Junction-to-Case | X2-DFN1210-8 | (Note 9) | — | 236 | °C/W |

Note: 9. Test condition, X2-DFN1210-8 device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

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

| Parameter | From Input | To Output | V _{CC} | T _A = +25°C | | | T _A = -40°C to +85°C | | T _A = -40°C to +125°C | | Unit |
|------------------|------------------------|-----------|-----------------|------------------------|------|------|---------------------------------|------|----------------------------------|------|------|
| | | | | Min | Typ | Max | Min | Max | Min | Max | |
| t _{pd} | A | Y | 0.8V | — | 20.6 | — | — | — | — | — | ns |
| | | | 1.2V ± 0.1V | 2.8 | 5.5 | 12.6 | 2.5 | 14.0 | 2.5 | 17 | |
| | | | 1.5V ± 0.1V | 2.2 | 3.9 | 7.3 | 2.0 | 7.5 | 2.0 | 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 | |
| t _{en} | $\overline{\text{OE}}$ | Y | 0.8V | — | 69.9 | — | — | — | — | — | ns |
| | | | 1.2V ± 0.1V | 3.1 | 6.1 | 14.2 | 2.9 | 20 | 2.9 | 22.2 | |
| | | | 1.5V ± 0.1V | 2.5 | 4.2 | 7.9 | 2.3 | 9.2 | 2.3 | 10.0 | |
| | | | 1.8V ± 0.15V | 2.1 | 3.4 | 6.1 | 2.0 | 7.4 | 2.0 | 8.2 | |
| | | | 2.5V ± 0.2V | 1.8 | 2.6 | 4.4 | 1.7 | 5.4 | 1.7 | 6.0 | |
| t _{dis} | $\overline{\text{OE}}$ | Y | 0.8V | — | 14.3 | — | — | — | — | — | ns |
| | | | 1.2V ± 0.1V | 2.7 | 4.3 | 9.4 | 2.7 | 10.6 | 2.7 | 11.8 | |
| | | | 1.5V ± 0.1V | 2.1 | 3.2 | 6.4 | 2.1 | 7.3 | 2.1 | 8.2 | |
| | | | 1.8V ± 0.15V | 2.0 | 3.0 | 5.5 | 2.0 | 6.3 | 2.0 | 7.1 | |
| | | | 2.5V ± 0.2V | 1.4 | 2.2 | 3.7 | 1.4 | 4.2 | 1.4 | 5.1 | |
| t _{dis} | $\overline{\text{OE}}$ | Y | 3.3V ± 0.3V | 1.7 | 2.5 | 4.4 | 1.7 | 4.6 | 1.7 | 5.4 | ns |

 $C_L = 10\text{pF}$, See Figure 1

| Parameter | From Input | To Output | V _{CC} | T _A = +25°C | | | T _A = -40°C to +85°C | | T _A = -40°C to +125°C | | Unit |
|------------------|------------------------|-----------|-----------------|------------------------|------|------|---------------------------------|------|----------------------------------|------|------|
| | | | | Min | Typ | Max | Min | Max | Min | Max | |
| t _{pd} | A | Y | 0.8V | — | 24.0 | — | — | — | — | — | ns |
| | | | 1.2V ± 0.1V | 3.2 | 6.4 | 14.8 | 3.0 | 16.6 | 3.0 | 18.2 | |
| | | | 1.5V ± 0.1V | 2.1 | 4.5 | 8.8 | 1.9 | 9.1 | 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 | 2.1 | 3.2 | 4.2 | 1.6 | 5.3 | 1.6 | 5.9 | |
| t _{en} | $\overline{\text{OE}}$ | Y | 0.8V | — | 73.7 | — | — | — | — | — | ns |
| | | | 1.2V ± 0.1V | 3.6 | 6.9 | 16.2 | 3.4 | 22.8 | 3.4 | 25.2 | |
| | | | 1.5V ± 0.1V | 2.3 | 4.8 | 9.2 | 2.2 | 10.3 | 2.2 | 11.3 | |
| | | | 1.8V ± 0.15V | 2.0 | 3.9 | 7.0 | 1.9 | 8.2 | 1.9 | 8.9 | |
| | | | 2.5V ± 0.2V | 1.8 | 3.2 | 5.2 | 1.7 | 6.4 | 1.7 | 7.1 | |
| t _{dis} | $\overline{\text{OE}}$ | Y | 0.8V | — | 32.7 | — | — | — | — | — | ns |
| | | | 1.2V ± 0.1V | 3.4 | 5.4 | 11.4 | 3.4 | 12.7 | 3.4 | 14.3 | |
| | | | 1.5V ± 0.1V | 2.2 | 4.1 | 7.9 | 2.2 | 8.9 | 2.2 | 10.2 | |
| | | | 1.8V ± 0.15V | 2.2 | 4.2 | 7.0 | 1.9 | 8.0 | 1.9 | 8.9 | |
| | | | 2.5V ± 0.2V | 1.7 | 3.0 | 4.8 | 1.7 | 5.7 | 1.7 | 6.4 | |
| t _{dis} | $\overline{\text{OE}}$ | Y | 3.3V ± 0.3V | 2.1 | 3.8 | 6.5 | 1.7 | 6.8 | 1.7 | 7.7 | ns |

Switching Characteristics (cont.)

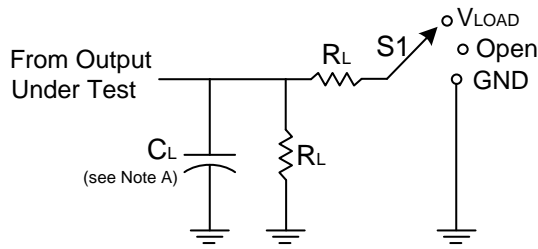
 $C_L = 15\text{pF}$, See Figure 1

| Parameter | From Input | To Output | V _{CC} | T _A = +25°C | | | T _A = -40°C to +85°C | | T _A = -40°C to +125°C | | Unit |
|------------------|------------|-----------|-----------------|------------------------|------|------|---------------------------------|------|----------------------------------|------|------|
| | | | | Min | Typ | Max | Min | Max | Min | Max | |
| t _{pd} | A | Y | 0.8V | — | 27.4 | — | — | — | — | — | ns |
| | | | 1.2V ± 0.1V | 3.6 | 7.2 | 15.8 | 3.3 | 22.4 | 3.3 | 22.5 | |
| | | | 1.5V ± 0.1V | 3.0 | 5.1 | 8.8 | 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 | 2.0 | 3.5 | 4.4 | 1.8 | 5.4 | 1.8 | 6.1 | |
| t _{en} | OE | Y | 0.8V | — | 77.5 | — | — | — | — | — | ns |
| | | | 1.2V ± 0.1V | 4.0 | 7.7 | 18.2 | 3.7 | 21.8 | 3.7 | 23.5 | |
| | | | 1.5V ± 0.1V | 3.0 | 5.3 | 10.1 | 2.5 | 11.8 | 2.5 | 12.8 | |
| | | | 1.8V ± 0.15V | 2.3 | 4.4 | 7.8 | 2.1 | 9.2 | 2.1 | 10.2 | |
| | | | 2.5V ± 0.2V | 2.1 | 3.6 | 6.0 | 2.0 | 7.3 | 2.0 | 8.2 | |
| | | | 3.3V ± 0.3V | 2.0 | 3.5 | 5.7 | 1.9 | 6.4 | 1.9 | 7.2 | |
| t _{dis} | OE | Y | 0.8V | — | 60.8 | — | — | — | — | — | ns |
| | | | 1.2V ± 0.1V | 4.3 | 6.5 | 13.9 | 3.7 | 15.5 | 3.7 | 15.7 | |
| | | | 1.5V ± 0.1V | 3.0 | 5.0 | 8.8 | 2.5 | 9.7 | 2.5 | 9.8 | |
| | | | 1.8V ± 0.15V | 3.0 | 5.3 | 8.8 | 2.1 | 10.3 | 2.1 | 10.5 | |
| | | | 2.5V ± 0.2V | 2.1 | 3.8 | 8.2 | 2.0 | 8.4 | 2.0 | 8.6 | |
| | | | 3.3V ± 0.3V | 2.9 | 5.0 | 8.6 | 1.9 | 9.2 | 1.9 | 9.4 | |

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

| Parameter | From Input | To Output | V _{CC} | T _A = +25°C | | | T _A = -40°C to +85°C | | T _A = -40°C to +125°C | | Unit |
|------------------|------------|-----------|-----------------|------------------------|------|------|---------------------------------|------|----------------------------------|------|------|
| | | | | Min | Typ | Max | Min | Max | Min | Max | |
| t _{pd} | A | Y | 0.8V | — | 37.4 | — | — | — | — | — | ns |
| | | | 1.2V ± 0.1V | 4.8 | 9.5 | 21 | 4.4 | 24.9 | 4.4 | 25 | |
| | | | 1.5V ± 0.1V | 4.0 | 6.7 | 10.8 | 3.0 | 13.0 | 3.0 | 14.5 | |
| | | | 1.8V ± 0.15V | 2.9 | 5.6 | 8.4 | 2.6 | 10.3 | 2.6 | 11.5 | |
| | | | 2.5V ± 0.2V | 2.7 | 4.8 | 6.3 | 2.5 | 7.8 | 2.5 | 8.7 | |
| | | | 3.3V ± 0.3V | 2.7 | 4.6 | 6 | 2.5 | 7.5 | 2.5 | 8.3 | |
| t _{en} | OE | Y | 0.8V | — | 88.9 | — | — | — | — | — | ns |
| | | | 1.2V ± 0.1V | 5.2 | 9.9 | 23.8 | 4.8 | 27.4 | 4.8 | 30.4 | |
| | | | 1.5V ± 0.1V | 4.0 | 6.8 | 13.0 | 3.1 | 15.1 | 3.1 | 16.9 | |
| | | | 1.8V ± 0.15V | 3.0 | 5.6 | 10.2 | 2.8 | 12.2 | 2.8 | 13.6 | |
| | | | 2.5V ± 0.2V | 2.7 | 4.8 | 7.8 | 2.6 | 9.4 | 2.6 | 10.6 | |
| | | | 3.3V ± 0.3V | 2.7 | 4.6 | 7.8 | 2.6 | 9.0 | 2.6 | 10.0 | |
| t _{dis} | OE | Y | 0.8V | — | 49.9 | — | — | — | — | — | ns |
| | | | 1.2V ± 0.1V | 6.0 | 9.9 | 16.0 | 4.8 | 17.8 | 4.8 | 19.8 | |
| | | | 1.5V ± 0.1V | 4.4 | 7.7 | 11.5 | 3.1 | 13.0 | 3.1 | 14.5 | |
| | | | 1.8V ± 0.15V | 5.1 | 8.7 | 13.3 | 2.8 | 14.9 | 2.8 | 16.6 | |
| | | | 2.5V ± 0.2V | 3.6 | 6.2 | 9.1 | 2.6 | 10.3 | 2.6 | 11.5 | |
| | | | 3.3V ± 0.3V | 5.2 | 8.7 | 13.7 | 2.6 | 14.0 | 2.6 | 17.0 | |

Parameter Measurement Information



| TEST | S1 | RL |
|-----------|-------|-----|
| tPLH/tPHL | Open | 1MΩ |
| tPLZ/tPZL | Vload | 5KΩ |
| tPHZ/tPZH | GND | 5KΩ |

| Vcc | Inputs | | VM | VLOAD | CL | VΔ |
|-------------|--------|-------|-------|---------|-----------------|--------|
| | VI | tr/td | | | | |
| 0.8V | VCC | ≤3ns | VCC/2 | 2 X VCC | 5, 10, 15, 30pF | 0.1 V |
| 1.2V±0.1V | VCC | ≤3ns | VCC/2 | 2 X VCC | 5, 10, 15, 30pF | 0.1 V |
| 1.5V±0.1V | VCC | ≤3ns | VCC/2 | 2 X VCC | 5, 10, 15, 30pF | 0.1 V |
| 1.8V ±0.15V | VCC | ≤3ns | VCC/2 | 2 X VCC | 5, 10, 15, 30pF | 0.15 V |
| 2.5V±0.2V | VCC | ≤3ns | VCC/2 | 2 X VCC | 5, 10, 15, 30pF | 0.15 V |
| 3.3V±0.3V | VCC | ≤3ns | VCC/2 | 2 X VCC | 5, 10, 15, 30pF | 0.3V |

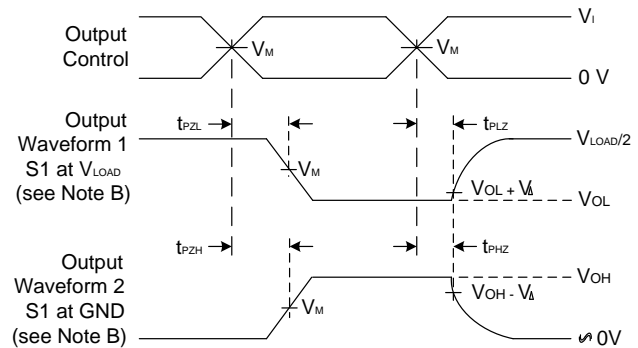
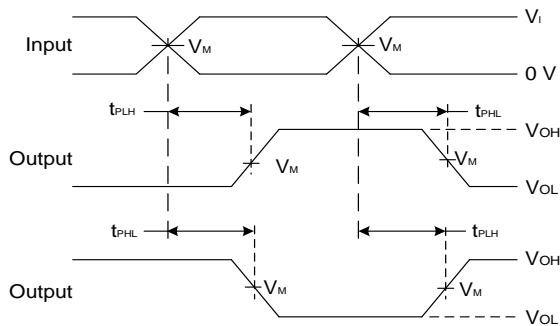
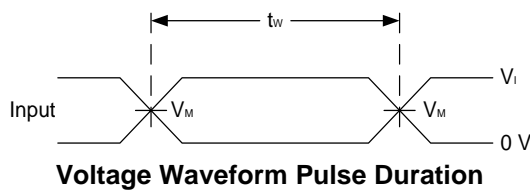


Figure 1 Load Circuit and Voltage Waveforms

- Notes:
- A. Includes test lead and test apparatus capacitance.
 - B. All pulses are supplied at pulse repetition rate ≤ 10 MHz.
 - C. Inputs are measured separately one transition per measurement.
 - D. tPLZ and tPHZ are the same as tdis.
 - E. tPZL and tPZH are the same as tEN.
 - F. tPLH and tPHL are the same as tPD.

Marking Information

X2-DFN1210-8

(Top View)

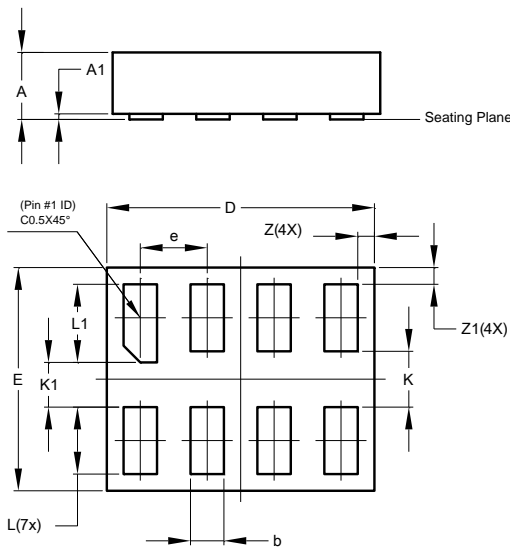
XX
YW X

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 : week : A~Z : Internal code

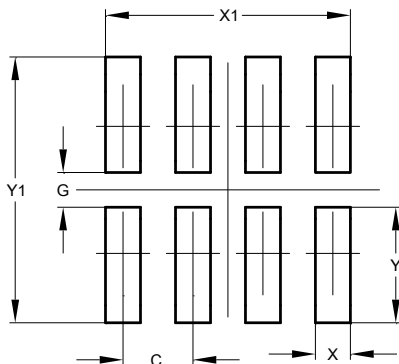
| Part Number | Package | Identification Code |
|-----------------|--------------|---------------------|
| 74AUP2G125RA3-7 | X2-DFN1210-8 | JT |

X2-DFN1210-8 Package Outline Dimensions and Suggested Pad Layout

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



| X2-DFN1210-8 | | | |
|-----------------------------|-------|-------|-------|
| Dim | Min | Max | Typ |
| A | - | 0.35 | 0.30 |
| A1 | 0 | 0.03 | 0.02 |
| b | 0.10 | 0.20 | 0.15 |
| D | 1.15 | 1.25 | 1.20 |
| E | 0.95 | 1.05 | 1.00 |
| e | - | - | 0.30 |
| K | - | - | 0.25 |
| K1 | - | - | 0.20 |
| L | 0.25 | 0.35 | 0.30 |
| L1 | 0.30 | 0.40 | 0.35 |
| Z | 0.050 | 0.100 | 0.075 |
| Z1 | 0.050 | 0.100 | 0.075 |
| All Dimensions in mm | | | |



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 0.300 |
| G | 0.150 |
| X | 0.150 |
| X1 | 1.050 |
| Y | 0.500 |
| Y1 | 1.150 |

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