

**Pin Functions**

| Pin Name | Pin No. | Type   | Description  |
|----------|---------|--------|--|
| CLK_IN   | 8       | I      | Reference Clock input. CLK_IN allows spread spectrum clock input.  |
| FB_IN    | 5       | I      | Feedback input. FB_IN provides the feedback signal to the internal PLL.  |
| CLK_OUT  | 3       | O      | Clock output. This output provides a low-skew copy of CLK_IN. The output has an embedded series-damping resistor.  |
| AVCC     | 7       | Power  | Analog power supply. AVCC can be also used to bypass the PLL for test purpose. When AVCC is strapped to ground, PLL is bypassed and CLK_IN is buffered directly to the device outputs. |
| AGND     | 1       | Ground | Analog ground. AGND provides the ground reference for the analog circuitry.  |
| VCC      | 4       | Power  | Power supply.  |
| GND      | 2, 6    | Ground | Ground.  |

**DC Specifications** (Absolute maximum ratings over operating free-air temperature range)

| Symbol            | Parameter   | Min. | Max.                  | Units |
|-------------------|---|------|-----------------------|-------|
| V <sub>I</sub>    | Input voltage range   | -0.5 | V <sub>CC</sub> + 0.5 | V     |
| V <sub>O</sub>    | Output voltage range  |      |                       |       |
| I <sub>O_DC</sub> | DC output current   |      | 100                   | mA    |
| Power             | Maximum power dissipation at T <sub>A</sub> = 55°C in still air |      | 1.0                   | W     |
| T <sub>STG</sub>  | Storage temperature   | -65  | 150                   | °C    |

**Note:**

Stress beyond those listed under “absolute maximum ratings” may cause permanent damage to the device.

| Parameter       | Test Conditions  | V <sub>CC</sub> | Min. | Typ. | Max. | Units |
|-----------------|--|-----------------|------|------|------|-------|
| I <sub>CC</sub> | V <sub>I</sub> = V <sub>CC</sub> or GND; I <sub>O</sub> = 0 <sup>(1)</sup> | 3.6V            |      |      | 10   | μA    |
| C <sub>I</sub>  | V <sub>I</sub> = V <sub>CC</sub> or GND                                    | 3.3V            |      | 4    |      | pF    |
| C <sub>O</sub>  | V <sub>O</sub> = V <sub>CC</sub> or GND                                    |                 |      | 6    |      |       |

**Note:**

1. Continuous Output Current

**Recommended Operating Conditions**

| Symbol          | Parameter                      | Min. | Max.            | Units |
|-----------------|--------------------------------|------|-----------------|-------|
| V <sub>CC</sub> | Supply voltage                 | 3.0  | 3.6             | V     |
| V <sub>IH</sub> | High level input voltage       | 2.0  |                 |       |
| V <sub>IL</sub> | Low level input voltage        |      | 0.8             |       |
| V <sub>I</sub>  | Input voltage                  | 0    | V <sub>CC</sub> |       |
| T <sub>A</sub>  | Operating free-air temperature | 0    | 70              | °C    |

**Electrical Characteristics** (Over Recommended Operating Free-Air Temperature Range)

Pull Up/Down Currents of PI6C2501,  $V_{CC} = 3.0V$ )

| Symbol          | Parameter         | Condition                | Min. | Max. | Units |
|-----------------|-------------------|--------------------------|------|------|-------|
| I <sub>OH</sub> | Pull-up current   | V <sub>out</sub> = 2.4V  |      | -18  | mA    |
|                 | Pull-up current   | V <sub>out</sub> = 2.0V  |      | -30  |       |
| I <sub>OL</sub> | Pull-down current | V <sub>out</sub> = 0.8V  | 25   |      |       |
|                 | Pull-down current | V <sub>out</sub> = 0.55V | 17   |      |       |

**AC Specifications**

(Timing requirements over recommended ranges of supply voltage and operating free-air temperature)

| Symbol           | Parameter                         | Min. | Max. | Units |
|------------------|-----------------------------------|------|------|-------|
| F <sub>CLK</sub> | Clock frequency PI6C2501          | 25   | 80   | MHz   |
| D <sub>CYI</sub> | Input clock duty cycle            | 40   | 60   | %     |
|                  | Stabilization Time after power up |      | 1    | ms    |

**Switching Characteristics**

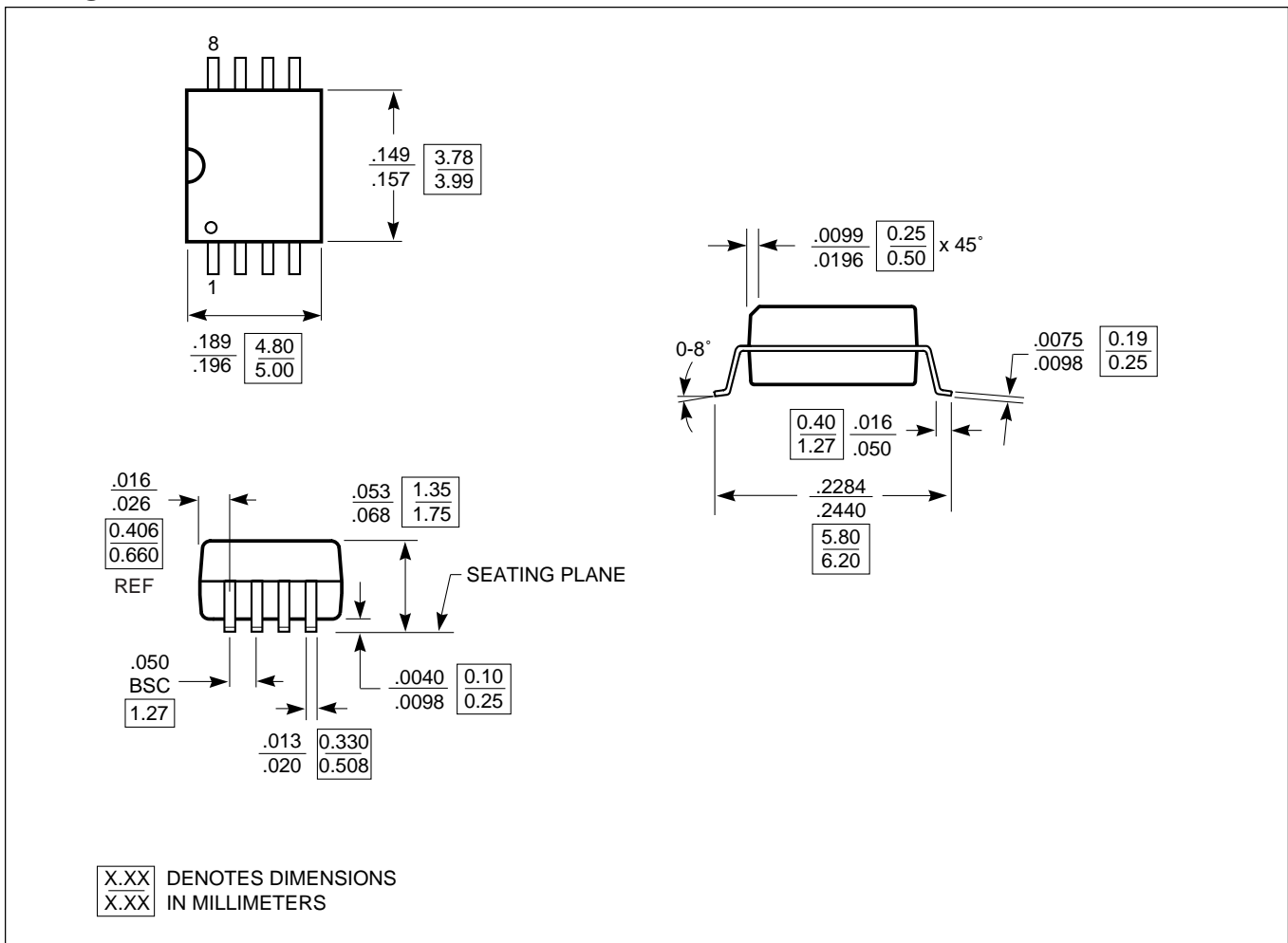
(Over recommended ranges of supply voltage and operating free-air temperature, CL = 30pF)

| Parameter                                | From (Input)            | To (Output) | V <sub>CC</sub> = 3.3V ±0.3V, 0-70°C |      |      | Units |
|--|-------------------------|-------------|--------------------------------------|------|------|-------|
|  |                         |             | Min.                                 | Typ. | Max. |       |
| t <sub>phase error without jitter</sub>  | CLK_IN↑ at 100 & 66 MHz | FB_IN↑      | -150                                 |      | +150 | ps    |
| Jitter, cycle-to-cycle                   | At 100 & 66 MHz         | CLK_OUT     | -100                                 |      | +100 |       |
| Duty cycle                               |                         |             | 45                                   |      | 55   | %     |
| t <sub>r</sub> , rise-time, 0.4V to 2.0V |                         |             |                                      |      | 1.0  | ns    |
| t <sub>f</sub> , fall-time, 2.0V to 0.4V |                         |             |                                      |      | 1.1  |       |

**Note:**

These switching parameters are guaranteed by design.

**Package Mechanical Information:** Plastic 8-pin SOIC Package.



**Ordering Information**

| Ordering Code | Package Name | Package Type       | Operating Range |
|---------------|--------------|--------------------|-----------------|
| PI6C2501W     | W8           | 8-pin 150-mil SOIC | Commercial      |

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Diodes Incorporated:](#)

[PI6C2501WE](#) [PI6C2501WEX](#)