

## Maximum Ratings

(Above which the useful life may be impaired. For user guidelines, not tested.)

|                                                                         |                 |
|-------------------------------------------------------------------------|-----------------|
| Storage Temperature .....                                               | –65°C to +150°C |
| Ambient Temperature with Power Applied .....                            | –40°C to +85°C  |
| Supply Voltage to Ground Potential (Inputs & V <sub>CC</sub> Only)..... | –0.5V to +4.6V  |
| Supply Voltage to Ground Potential (Outputs & D/O Only) ..              | –0.5V to +4.6V  |
| DC Input Voltage .....                                                  | –0.5V to +5.5V  |
| DC Output Current.....                                                  | 120mA           |
| Power Dissipation .....                                                 | 0.5W            |

### Note:

Stresses greater than those listed under MAXIMUM RATINGS may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.

## DC Electrical Characteristics (Over Operating Range, T<sub>A</sub> = –40°C to +85°C, V<sub>CC</sub> = 3.3V ±10%)

| Parameters                      | Description                         | Test Conditions(1)                                                                                                                                       | Min. | Typ.(2) | Max     | Units |
|---------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|---------|-------|
| V <sub>IH</sub>                 | Input HIGH Voltage                  | Guaranteed Logic HIGH Level                                                                                                                              | 2.0  |         |         | V     |
| V <sub>IL</sub>                 | Input LOW Voltage                   | Guaranteed Logic LOW Level –0.5                                                                                                                          |      | 0.8     |         |       |
| I <sub>IH</sub>                 | Input HIGH current                  | V <sub>CC</sub> = Max., V <sub>IN</sub> = V <sub>CC</sub>                                                                                                |      |         | ±1      | µA    |
| I <sub>IL</sub>                 | Input LOW Current                   | V <sub>CC</sub> = Max., V <sub>IN</sub> = GND                                                                                                            |      |         | ±1      |       |
| I <sub>OZH</sub> <sup>(3)</sup> | High Impedance Output Current       | 0 ≤ A, B ≤ V <sub>CC</sub>                                                                                                                               |      |         | ±1      |       |
| V <sub>IK</sub>                 | Clamp Diode Voltage                 | V <sub>CC</sub> = Min., I <sub>IN</sub> = –18mA                                                                                                          |      | –0.73   | –1.2    | V     |
| R <sub>ON</sub>                 | Switch ON Resistance <sup>(4)</sup> | V <sub>CC</sub> = Min., V <sub>IN</sub> = 0.0V, I <sub>ON</sub> = 48mA or 60mA<br>V <sub>CC</sub> = Min., V <sub>IN</sub> = 2.4V, I <sub>ON</sub> = 15mA |      | 5<br>8  | 7<br>15 | Ω     |

### Notes:

- For Max. or Min. conditions, use appropriate value specified under Electrical Characteristics for the applicable device type.
- Typical values are at V<sub>CC</sub> = 3.3V, T<sub>A</sub> = 25°C ambient and maximum loading.
- Not more than one output should be shorted at one time. Duration of the test should not exceed one second.
- Measured by the voltage drop between A and B pin at indicated current through the switch. ON resistance is determined by the lower of the voltages on the two (A,B) pins.

## Capacitance (T<sub>A</sub> = 25°C, f = 1 MHz)

| Parameters <sup>(1)</sup> | Description                 | Test Conditions      | Typ. | Units |
|---------------------------|-----------------------------|----------------------|------|-------|
| C <sub>IN</sub>           | Input Capacitance           | V <sub>IN</sub> = 0V | 3.5  | pF    |
| C <sub>OFF</sub>          | A/B Capacitance, Switch Off | V <sub>IN</sub> = 0V | 5.0  |       |
| C <sub>ON</sub>           | A/B Capacitance, Switch On  | V <sub>IN</sub> = 0V | 10.0 |       |

### Notes:

- This parameter is determined by device characterization but is not production tested.

## Power Supply Characteristics

| Parameters       | Description                    | Test Conditions       |                                          | Min. | Typ. <sup>(2)</sup> | Max. | Units |
|------------------|--------------------------------|-----------------------|------------------------------------------|------|---------------------|------|-------|
| I <sub>CC</sub>  | Quiescent Power Supply Current | V <sub>CC</sub> = Max | V <sub>IN</sub> = GND or V <sub>CC</sub> |      | 260                 | 500  | μA    |
| ΔI <sub>CC</sub> | Supply Current per Input HIGH  | V <sub>CC</sub> = Max | V <sub>IN</sub> = 3.0V <sup>(3)</sup>    |      |                     | 750  |       |

### Notes:

- For Max. or Min. conditions, use appropriate value specified under Electrical Characteristics for the applicable device.
- Typical values are at V<sub>CC</sub> = 3.3V, +25°C ambient.
- Per driven input (control input only); A and B pins do not contribute to ΔI<sub>CC</sub>.

## Switching Characteristics over 3.3V Operating Range

| Parameters                           | Description                                          | Conditions                                     | Com. |      | Units |
|--------------------------------------|------------------------------------------------------|------------------------------------------------|------|------|-------|
|                                      |                                                      |                                                | Min. | Max. |       |
| t <sub>PLH</sub><br>t <sub>PHL</sub> | Propogation Delay <sup>(1,2)</sup><br>A to B, B to A | C <sub>L</sub> = 50pF<br>R <sub>L</sub> = 500Ω |      | 0.25 | ns    |
| t <sub>PZH</sub><br>t <sub>PZL</sub> | Bus Enable Time                                      | C <sub>L</sub> = 50pF<br>R <sub>L</sub> = 500Ω | 1.5  | 6.5  |       |
| t <sub>PHZ</sub><br>t <sub>PLZ</sub> | Bus Disable Time                                     | R = 500Ω                                       | 1.5  | 5.5  |       |

### Notes:

- This parameter is guaranteed but not tested on Propagation Delays.
- The bus switch contributes no propagational delay other than the RC delay of the ON resistance of the switch and the load capacitance. The time constant for the switch alone is of the order of 0.25ns for 50pF load. Since this time constant is much smaller than the rise/fall times of typical driving signals, it adds very little propagational delay to the system. Propagational delay of the bus switch when used in a system is determined by the driving circuit on the driving side of the switch and its interaction with the load on the driven side.

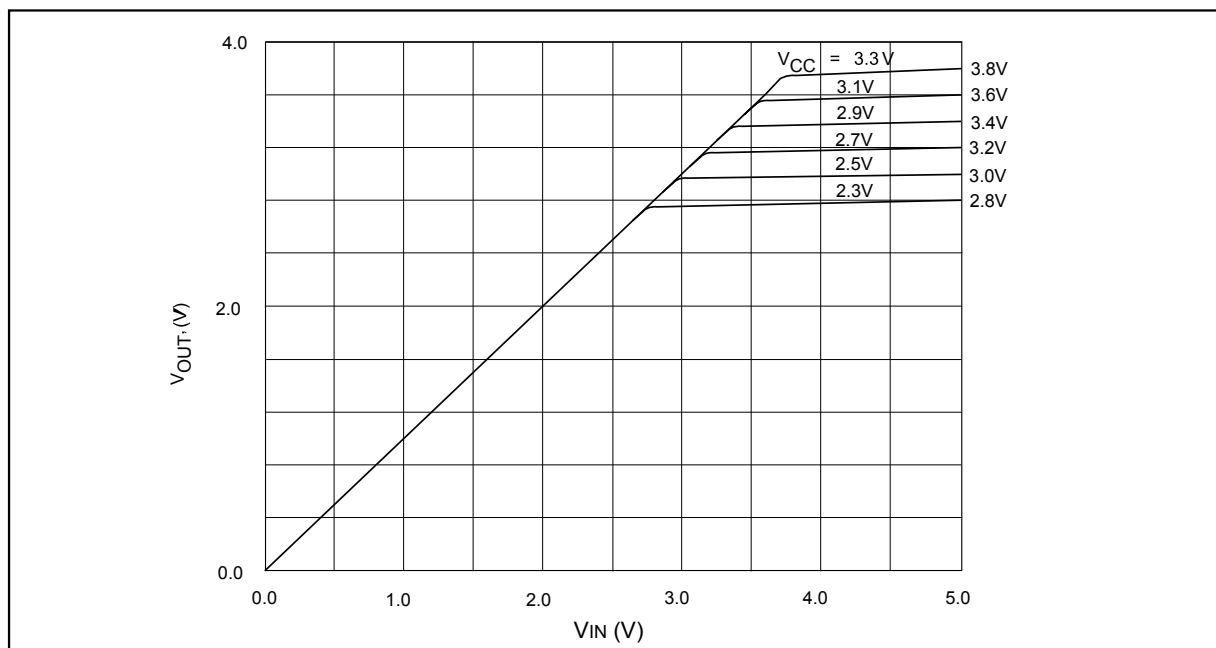
## Switching Characteristics over 2.5V Operating Range

| Parameters                           | Description                                          | Conditions                                     | Com. |      | Units |
|--------------------------------------|------------------------------------------------------|------------------------------------------------|------|------|-------|
|                                      |                                                      |                                                | Min. | Max. |       |
| t <sub>PLH</sub><br>t <sub>PHL</sub> | Propogation Delay <sup>(1,2)</sup><br>A to B, B to A | C <sub>L</sub> = 50pF<br>R <sub>L</sub> = 500Ω |      | 0.25 | ns    |
| t <sub>PZH</sub><br>t <sub>PZL</sub> | Bus Enable Time                                      | C <sub>L</sub> = 50pF<br>R <sub>L</sub> = 500Ω | 1.5  | 9.8  |       |
| t <sub>PHZ</sub><br>t <sub>PLZ</sub> | Bus Disable Time                                     | R = 500Ω                                       | 1.5  | 8.3  |       |

### Notes:

- This parameter is guaranteed but not tested on Propagation Delays.
- The bus switch contributes no propagational delay other than the RC delay of the ON resistance of the switch and the load capacitance. The time constant for the switch alone is of the order of 0.25ns for 50pF load. Since this time constant is much smaller than the rise/fall times of typical driving signals, it adds very little propagational delay to the system. Propagational delay of the bus switch when used in a system is determined by the driving circuit on the driving side of the switch and its interaction with the load on the driven side.

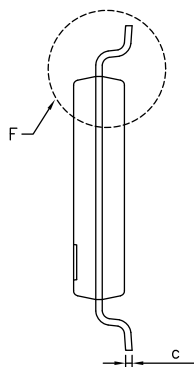
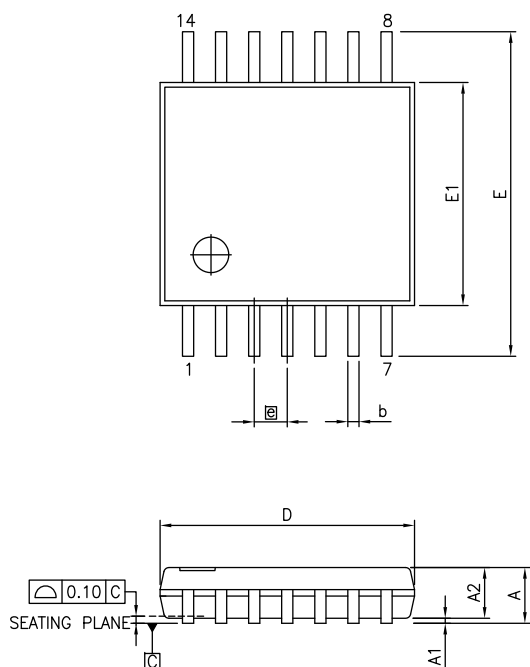
**PI3C3126**



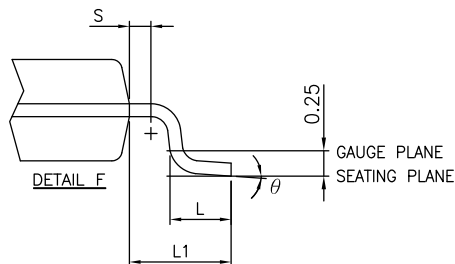
Switch Output Voltage vs. Input Voltage over Various Supply Voltages

PI3C3126

## Packaging Mechanical: 14-Pin TSSOP (L14)



| SYMBOLS | MIN.     | NOM. | MAX. |
|---------|----------|------|------|
| A       | —        | —    | 1.20 |
| A1      | 0.05     | —    | 0.15 |
| A2      | 0.80     | 1.00 | 1.05 |
| b       | 0.19     | —    | 0.30 |
| c       | 0.09     | —    | 0.20 |
| D       | 4.90     | 5.00 | 5.10 |
| E1      | 4.30     | 4.40 | 4.50 |
| E       | 6.20     | 6.40 | 6.60 |
| e       | 0.65 BSC |      |      |
| L1      | 1.00 REF |      |      |
| L       | 0.45     | 0.60 | 0.75 |
| S       | 0.20     | —    | —    |
| θ       | 0°       | —    | 8°   |



### NOTES:

1. ALL DIMENSIONS IN MILLIMETERS. ANGLES IN DEGREES.
2. JEDEC MO-153F
3. DIMENSIONS DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

16-0060



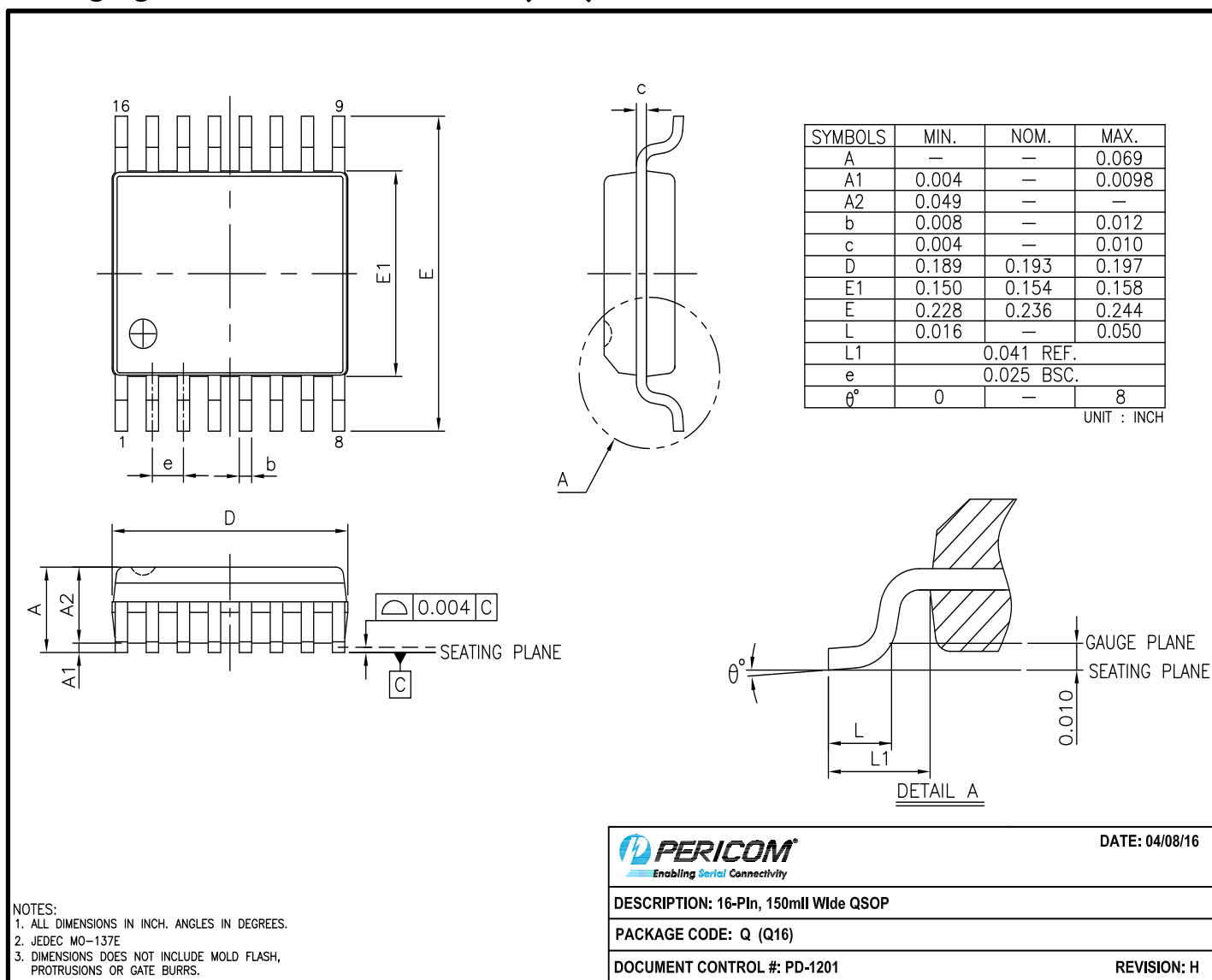
DATE: 03/24/16

DESCRIPTION: 14-Pin, 173mI Wide TSSOP

PACKAGE CODE: L (L14)

DOCUMENT CONTROL #: PD-1309

REVISION: E

**PI3C3126**
**Packaging Mechanical: 16-Pin QSOP (Q16)**


Note: For latest package info, please check: <http://www.pericom.com/support/packaging/packaging-mechanicals-and-thermal-characteristics/>

**Ordering Information**

| Ordering Code | Packaging Code | Package Type                             |
|---------------|----------------|------------------------------------------|
| PI3C3126LE    | L              | 14-pin, 173mil Wide (TSSOP)              |
| PI3C3126LEX   | L              | 14-pin, 173mil Wide (TSSOP), Tape & Reel |
| PI3C3126QE    | Q              | 16-pin, 150mil Wide (QSOP)               |
| PI3C3126QEX   | Q              | 16-pin, 150mil Wide (QSOP), Tape & Reel  |

**Notes:**

- Thermal characteristics can be found on the company web site at [www.pericom.com/packaging/](http://www.pericom.com/packaging/)
- E = Pb-free & Green
- Adding an X suffix = Tape/Reel