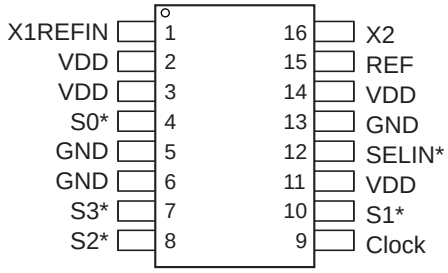
## Pin Assignment




*Internal Pull-Up

## Pin Description

| Pin Name | Pin No | I/O Type | Pin Description |
|---|---|---|---|
| $X1/REF_{IN}$ | 1 | I | Crystal or Reference clock input. See "Recommended Crystal Specifications" for details. |
| $V_{DD}$ | 2, 3, 11, 14 | Power | Power supply |
| $S_0$* | 4 | I | Output clock selection |
| GND | 5, 6, 13 | Ground | Ground |
| $S_3$* | 7 | I | Output clock selection |
| $S_2$* | 8 | I | Output clock selection |
| Clock | 9 | O | Clock output |
| $S_1$* | 10 | I | Output clock selection |
| SELIN* | 12 | I | Input clock selection. Low: reference clock input; High: crystal clock input |
| REF | 15 | O | Reference clock input |
| $X_2$ | 16 | I | Crystal clock input; leave open if SELIN=Low |

* Internally Pulled High

## Electrical Specifications

### Maximum Ratings

| Item | Rating |
|---|---|
| Supply Voltage to Ground Potential | 5.5V |
| All Inputs and Outputs | -0.5 to $V_{DD}$ +0.5V |
| Ambient Operating Temperature | -40 to +85°C |
| Storage Temperature | -65 to +150°C |
| Junction Temperature | 150°C |
| Soldering Temperature | 260°C |

Note: Beyond maximum ratings may cause device damage

### Recommended Operation Conditions

| Parameter | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|
| Ambient Operating Temperature | -40 | | +85 | °C |
| Power Supply Voltage (measured in respect to GND) | +3.0 | | +3.6 | V |

### DC Electrical Characteristics

$V_{DD}$ = 3.3V ±10%, Ambient Temperature -40 to +85°C

| Symbol | Parameter | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $V_{DD}$ | Operating Voltage | | 3.0 | | 3.6 | V |
| $V_{IH}$ | Input High Voltage | | 2 | | | V |
| $V_{IL}$ | Input Low Voltage | | | | 0.8 | V |
| $V_{OH}$ | Output High Voltage | $I_{OH}$ = -4mA | $V_{DD}$-0.4 | | | V |
| $V_{OH}$ | Output High Voltage | $I_{OH}$ = -12mA | 2.4 | | | V |
| $V_{OL}$ | Output Low Voltage | $I_{OL}$ = +12mA | | | 0.4 | V |
| $I_{DD}$ | Supply Current | No Load | | 25 | | mA |
| $I_{OS}$ | Short Circuit Current | Each output | | ±65 | | mA |
| $Z_{OUT}$ | Nominal Output Impedance | | | 20 | | Ω |
| $Z_{IN}$ | Input Capacitance | Input pins | | 7 | | pF |
| $R_{Pullup}$ | Internal pull-up resistor | | | 120 | | KΩ |

### AC Electrical Characteristics

$V_{DD}$ = 3.3V ±10%, Ambient Temperature -40 to +85°C

| Symbol | Parameter | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $F_{cry}$ | Crystal Frequency | | | 27 | 28 | MHz |
| $t_{Rise}$ | Output Clock Rise Time | 20% to 80%, 15pF load | | | 1.5 | ns |
| $t_{Fall}$ | Output Clock Fall Time | 80% to 20%, 15pF load | | | 1.5 | ns |
| $t_{DC}$ | Output Duty Cycle | Measured at VDD/2, 15pF load | 45 | 50 | 55 | % |

| | | | | | | |
|---|---|---|---|---|---|---|
| $T_{j\_short}$ | Short term jitter | Reference clock off | | 175 | | ps p-p |
| $T_{j\_short}$ | Short term jitter | Reference clock on | | 175 | | ps p-p |
| $T_{j\_long}$ | Long term jitter | Reference clock off; 10 µ delay | | 1100 | | ps p-p |
| $T_{j\_long}$ | Long term jitter | Reference clock on; 10 µ delay | | 1100 | | ps p-p |
| Phase Noise | Single sideband phase noise | 33 MHz; 10Hz offset | | -50 | | dBc |
| Phase Noise | Single sideband phase noise | 33 MHz; 100Hz offset | | -75 | | dBc |
| Phase Noise | Single sideband phase noise | 33 MHz; 1kHz offset | | -80 | | dBc |
| Phase Noise | Single sideband phase noise | 33 MHz; 10kHz offset | | -75 | | dBc |
| $F_{ERROR}$ | Actual mean frequency error versus target | | | 0 | | ppm |

## Thermal Characteristics

| Symbol | Parameter | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| θJA | Thermal Resistance Junction to Ambient | Still air | | 78 | | °C/W |
| θJA | | 1 min m/s air flow | | 70 | | °C/W |
| θJA | | 3 min m/s air flow | | 68 | | °C/W |
| θJC | Thermal Resistance Junction to Case | | | 37 | | °C/W |

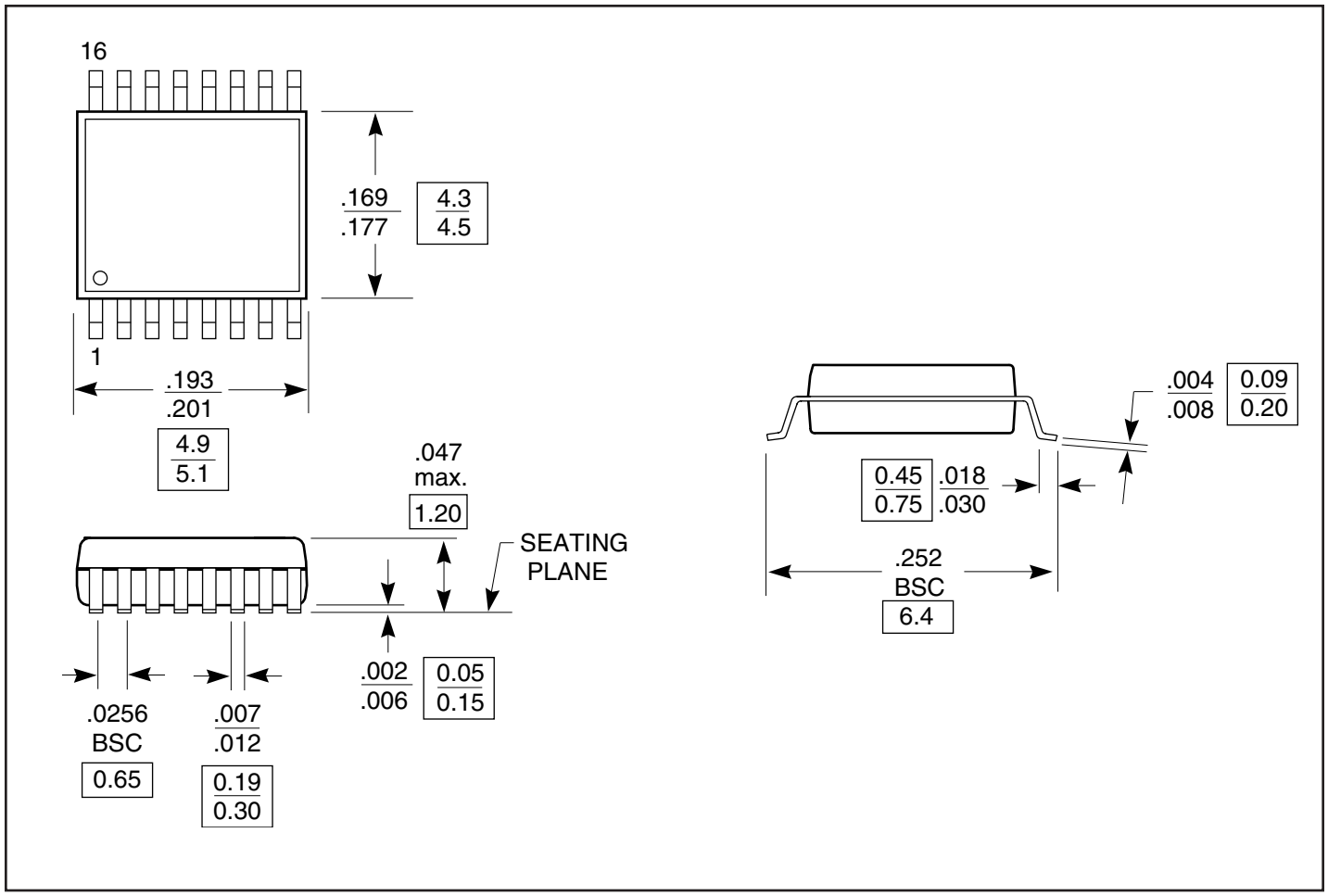
## Recommended Crystal Specification

Pericom's 49SMLB27.0000 MHz parallel resonance crystal is recommended.

## Recommended Crystal Specification

| Parameter | Value | Units |
|---|---|---|
| Mode of oscillation | Fundamental AT | |
| Frequency | 27 | MHz |
| Frequency Tolerance | ±50 | PPM |
| Temperature and aging stability | ±50 | PPM |
| C0/C1 ratio | 240 | |
| Load cap | 18 | pF |
| Equivalent series resistance | 30 | Ω |

## Packaging Mechanical: 16-pin TSSOP (L16)




## Ordering Information

| Ordering Code | Package Code | Package Type | Operating Range |
|---|---|---|---|
| PI6C6612LE | L | Pb-free & Green 16-pin TSSOP | Industrial |

# Mouser Electronics

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