

30 ns, Micro Power Comparator With Push-pull Outputs

General Description

The LTA675x family are single-(LTA6751) and dual-(LTA6752) channel comparators with push-pull output that feature 30ns propagation delay, a wide range of supply voltages from 2.7V to 5.5V with rail-to-rail inputs helps to implement in a wide variety of applications where require critical response time, power-sensitive, low-voltage. The output of the LTA675x pulls to within 0.1 V of either supply rail without external pull-up circuitry, making it ideal for interface with CMOS or TTL logic directly. All input and output pins can tolerate a continuous short-circuit fault condition to either rail. Internal hysteresis ensures clean output switching, even with slow-moving input signals.

The LTA6751 is offered in SC70-5L and SOT23-5L packages. The LTA6752 is offered in SOIC-8L and MSOP-8L packages. All devices are rated over -40°C to $+125^{\circ}\text{C}$ extended industrial temperature range.

Features and Benefits

- Fast 30ns Propagation Delay (100-mV Overdrive)
- Rail-to-Rail I/O
- Supply voltage: 2.7 V to 5.5 V
- Replacement for TLV3201, TLV3202
- Small packages: available in SC70-5L, SOT23-5L, SOIC-8L, MSOP-8L
- Low supply current : 45 μA (per channel)

Applications

- High Speed Instrumentation
- Clock and Data Signal Restoration
- Pulse Spectroscopy
- High Speed Line Receivers
- Threshold Detection
- Peak and Zero-crossing Detectors
- High Speed Trigger Circuitry
- Pulse-width Modulators
- Current/Voltage-controlled Oscillators
- Automatic Test Equipment (ATE)
- Wireless Base Stations

Table of Content

| | |
|------------------------------------|----|
| General Description..... | 1 |
| Features and Benefits..... | 1 |
| Applications..... | 1 |
| Table of Content..... | 2 |
| Ordering Information..... | 3 |
| Pin Configuration (Top View) | 3 |
| Tape and Reel Information..... | 5 |
| Package Outlines..... | 6 |
| Important Notice..... | 10 |

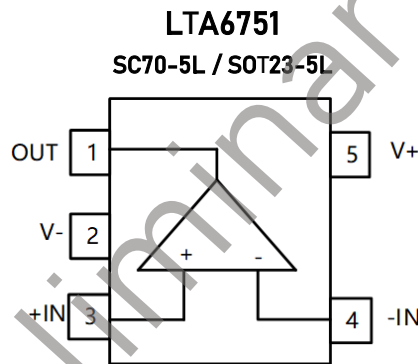
preliminary

30 ns, Micro Power Comparator With Push-pull Outputs

Ordering Information

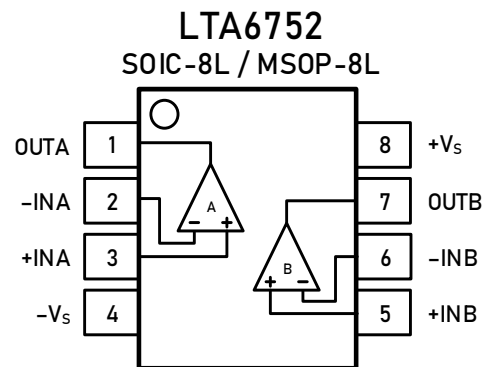
| Part Number | Package Type | Quantity | Mark Code |
|---------------|--------------|----------------------|-----------|
| LTA6751XT5/R6 | SOT23-5L | Tape and Reel, 3 000 | R6751 |
| LTA6751XC5/R6 | SC70-5L | Tape and Reel, 3 000 | R6751 |
| LTA6752XS8/R8 | SOIC-8L | Tape and Reel, 4 000 | R6752 |
| LTA6752XV8/R6 | MSOP-8L | Tape and Reel, 3 000 | R6752 |

Pin Configuration (Top View)



| Symbol | Pin Number | Description |
|--------|------------------|---------------------------------|
| | SC70-5L/SOT23-5L | |
| -IN | 4 | Negative (inverting) input |
| +IN | 3 | Positive (non-inverting) input |
| OUT | 1 | Output |
| V- | 2 | Negative (lowest) power supply |
| V+ | 5 | Positive (highest) power supply |

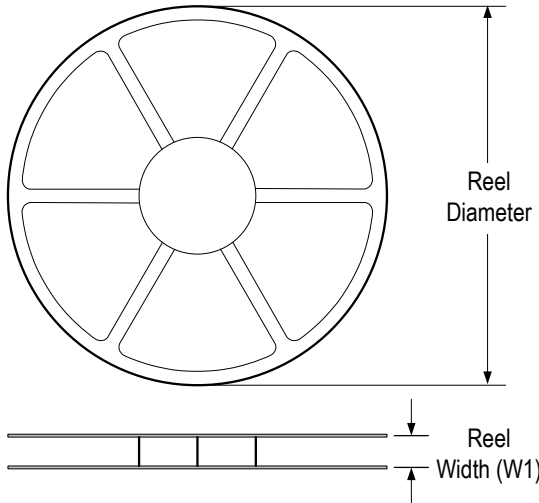
30 ns, Micro Power Comparator With Push-pull Outputs



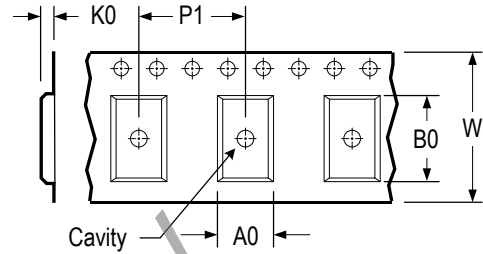
| Symbol | Pin Number | Description |
|--------|---------------|---------------------------------|
| | SOIC-8L/MSOP8 | |
| -IN A | 2 | Inverting input, channel A |
| +IN A | 3 | Non-inverting input, channel A |
| -IN B | 6 | Inverting input, channel B |
| +IN B | 5 | Non-inverting input, channel B |
| OUT A | 1 | Output, channel A |
| OUT B | 7 | Output, channel B |
| -Vs | 4 | Negative (lowest) power supply |
| +Vs | 8 | Positive (highest) power supply |

Tape and Reel Information

REEL DIMENSIONS

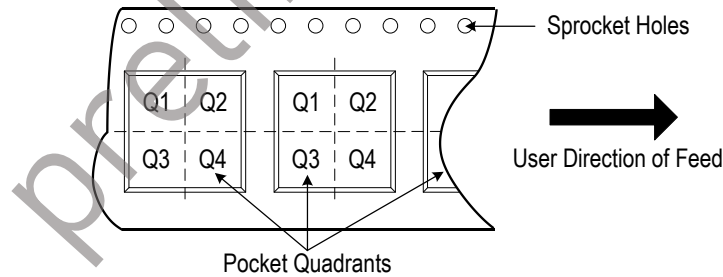


TAPE DIMENSIONS



| | |
|----|---|
| A0 | Dimension designed to accommodate the component width |
| B0 | Dimension designed to accommodate the component length |
| K0 | Dimension designed to accommodate the component thickness |
| W | Overall width of the carrier tape |
| P1 | Pitch between successive cavity centers |

QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE

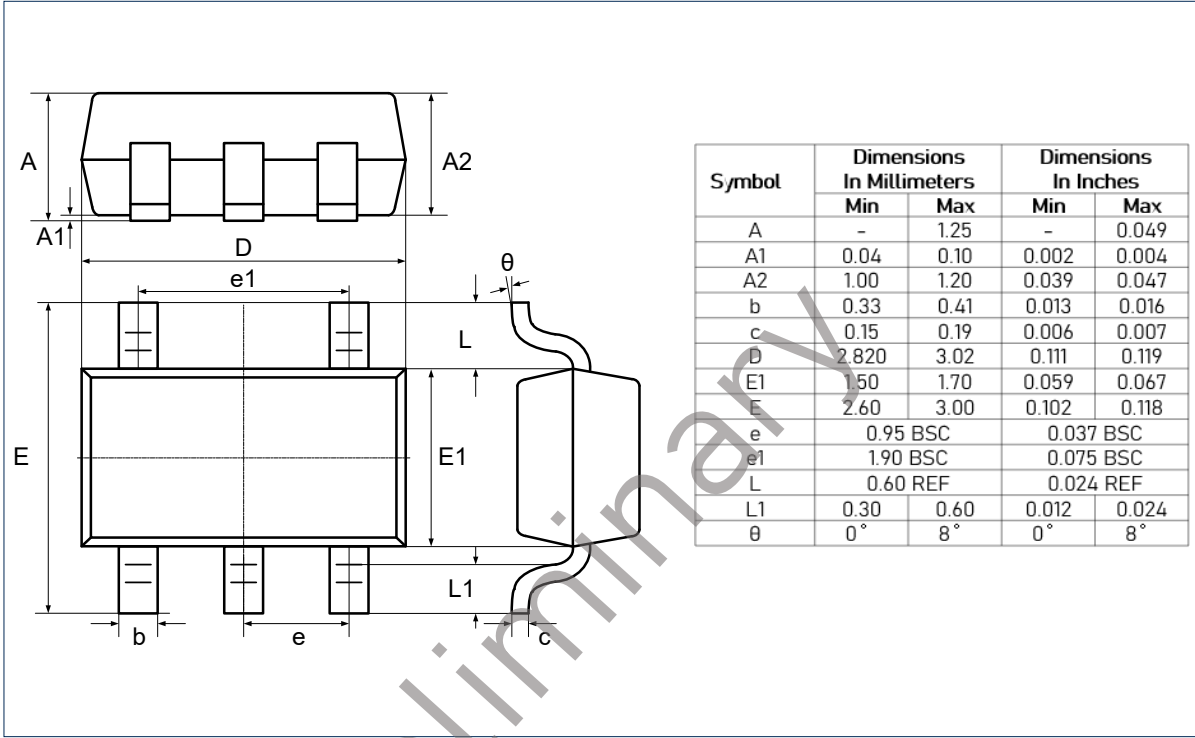


* All dimensions are nominal

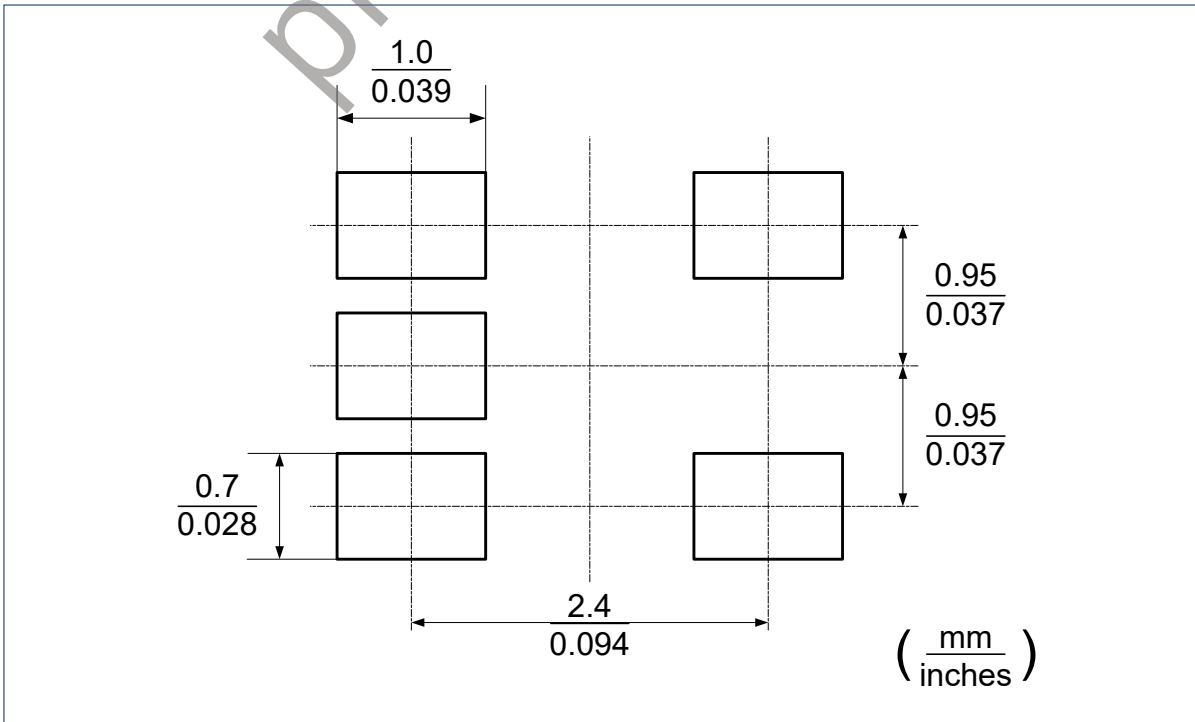
| Device | Package Type | Pins | SPQ | Reel Diameter (mm) | Reel Width W1 (mm) | A0 (mm) | B0 (mm) | K0 (mm) | P1 (mm) | W (mm) | Pin 1 Quadrant |
|---------------|--------------|------|-------|--------------------|--------------------|---------|---------|---------|---------|--------|----------------|
| LTA6752XS8/R8 | SOIC | 8 | 4 000 | 330 | 12.5 | 6.6 | 5.3 | 2.0 | 8.0 | 12.0 | Q1 |
| LTA6752XV8/R6 | MSOP | 8 | 3 000 | 330 | 12.5 | 5.0 | 3.5 | 2.0 | 8.0 | 12.0 | Q1 |
| LTA6751XT5/R6 | SOT23 | 5 | 3 000 | 178 | 9.0 | 3.3 | 3.2 | 1.5 | 4.0 | 8.0 | Q3 |
| LTA6751XC5/R6 | SC70 | 5 | 3 000 | 178 | 9.0 | 3.3 | 3.2 | 1.5 | 4.0 | 8.0 | Q3 |

Package Outlines

DIMENSIONS, SOT23-5L

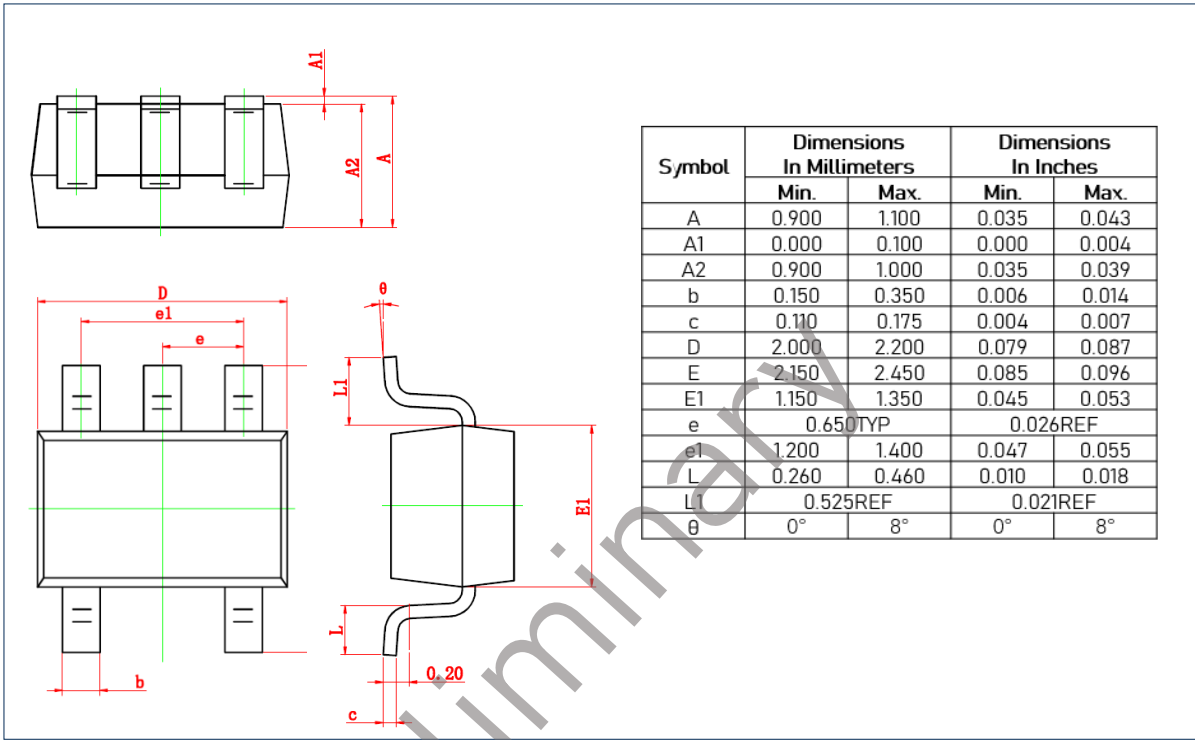


RECOMMENDED SOLDERING FOOTPRINT, SOT23-5L

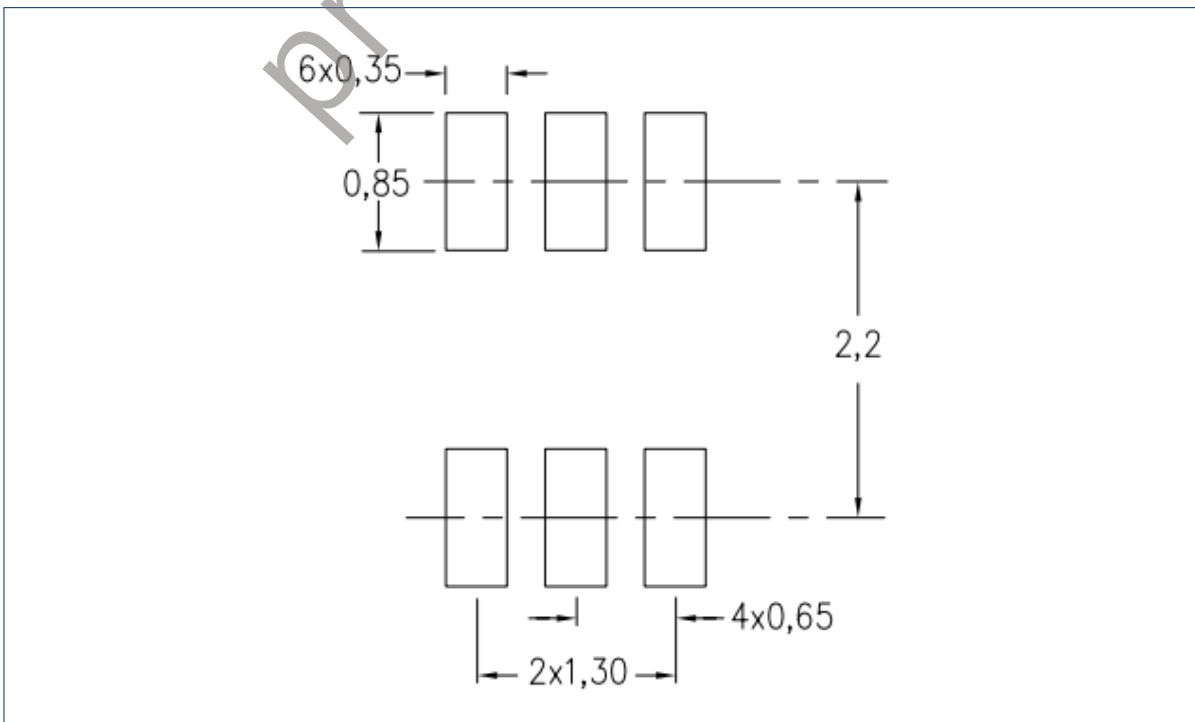


Package Outlines (Continued)

DIMENSIONS, SC70-5L

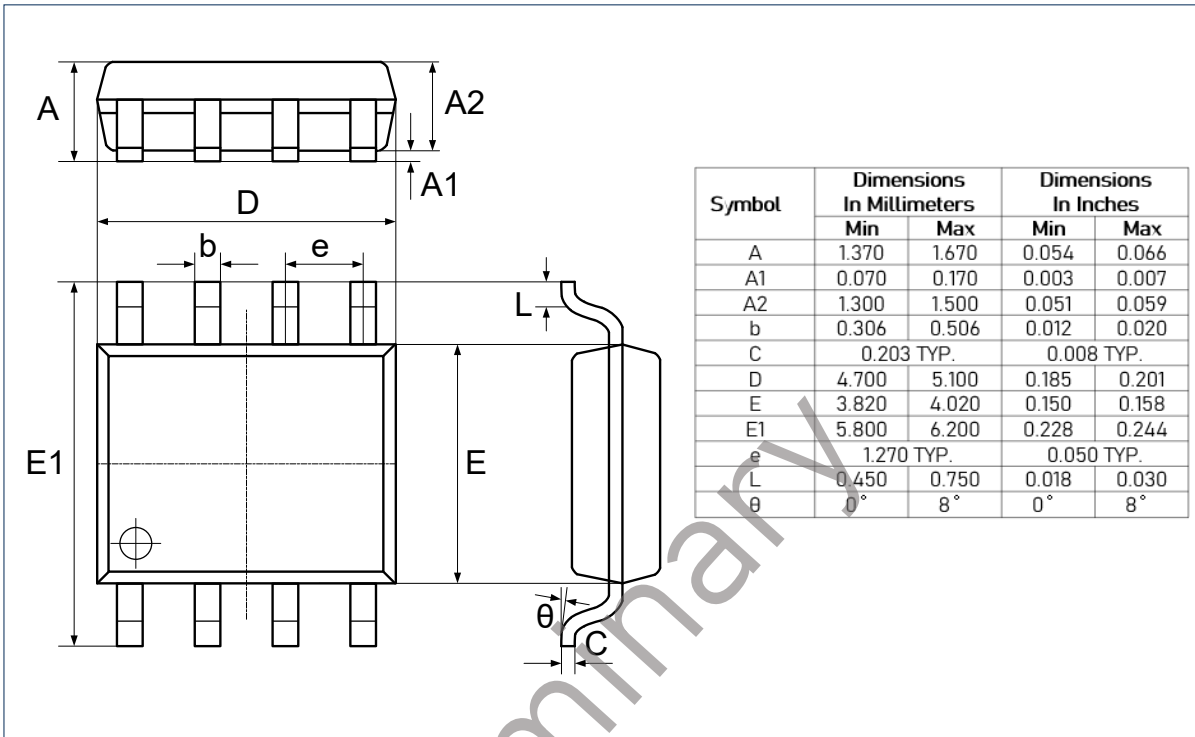


RECOMMENDED SOLDERING FOOTPRINT, SC70-5L

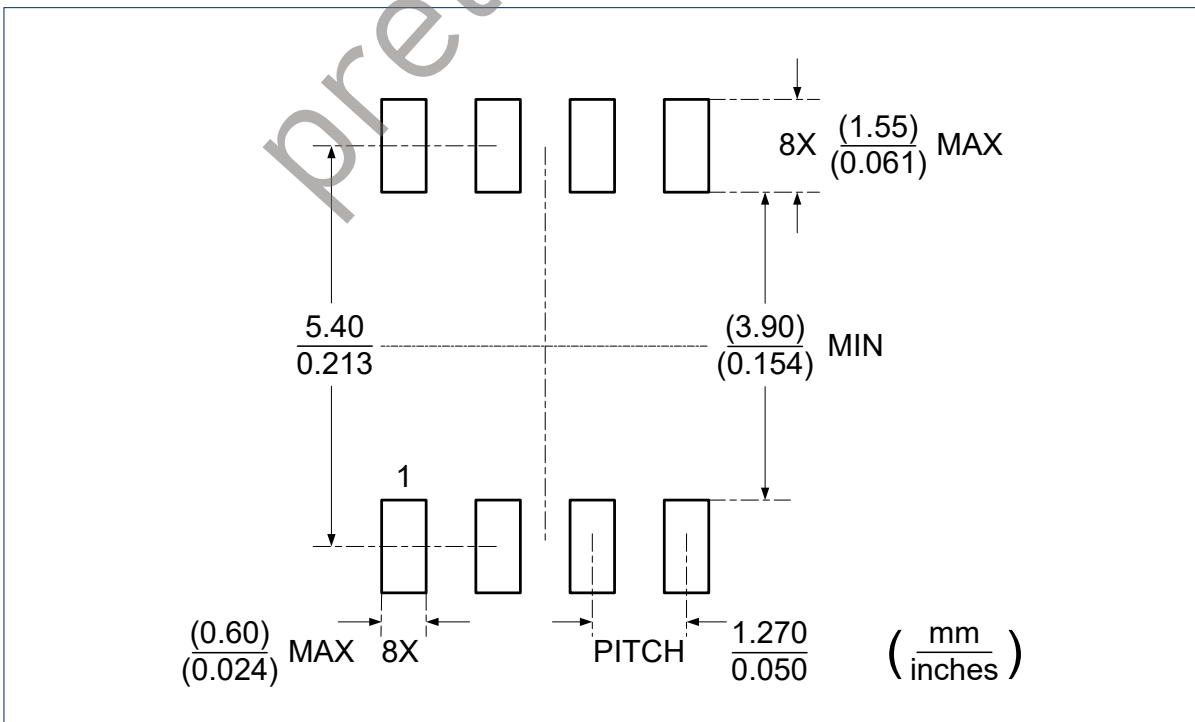


Package Outlines (Continued)

DIMENSIONS, SOIC-8L

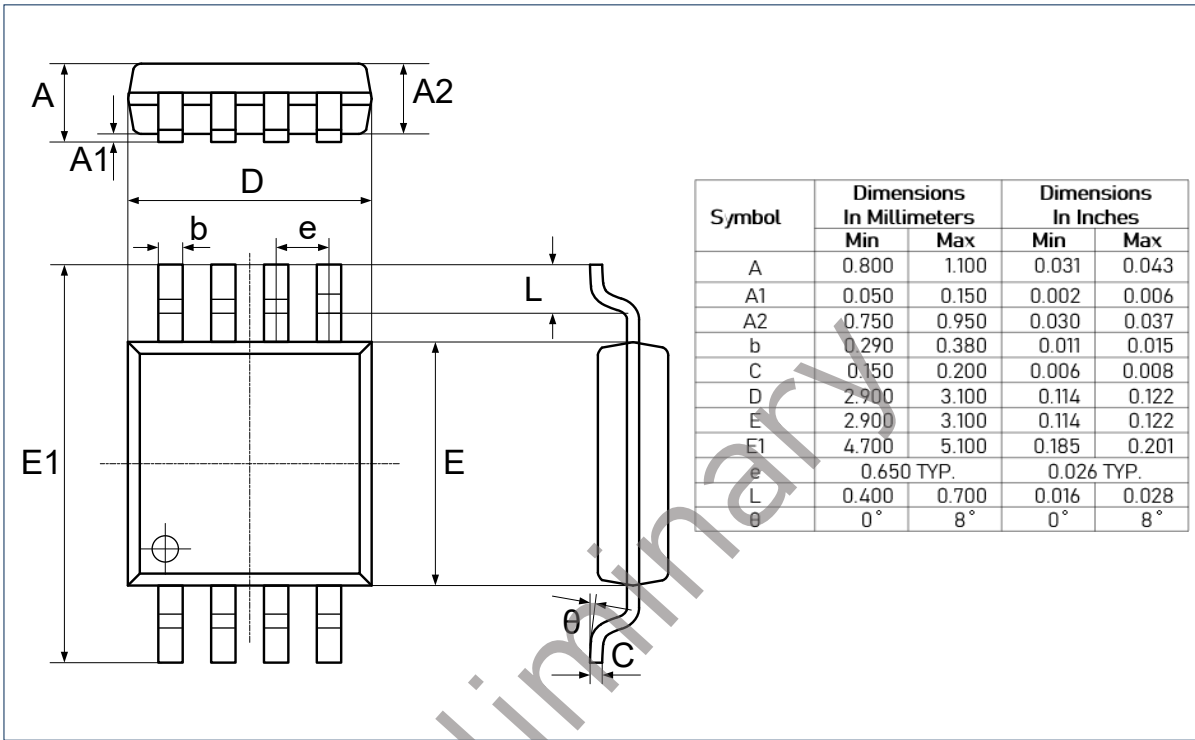


RECOMMENDED SOLDERING FOOTPRINT, SOIC-8L

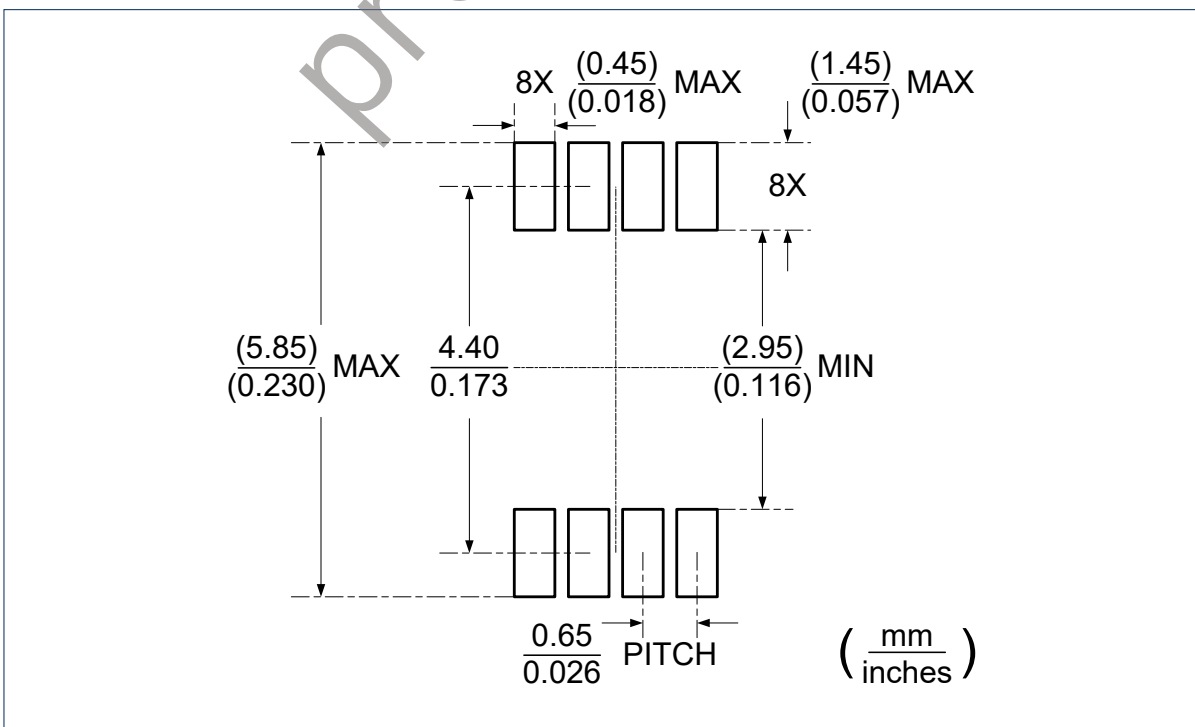


Package Outlines (Continued)

DIMENSIONS, MSOP-8L



RECOMMENDED SOLDERING FOOTPRINT, MSOP-8L



30 ns, Micro Power Comparator With Push-pull Outputs

Important Notice

Linearin is a global fabless semiconductor company specializing in advanced high-performance high-quality analog/mixed-signal IC products and sensor solutions. The company is devoted to the innovation of high performance, analog-intensive sensor front-end products and modular sensor solutions, applied in multi-market of medical & wearable devices, smart home, sensing of IoT, intelligent industrial & smart factory (industrial 4.0), and automotives. Linearin's product families include widely-used standard catalog products, solution-based application specific standard products (ASSPs) and sensor modules that help customers achieve faster time-to-market products. Go to <http://www.linearin.com> for a complete list of Linearin product families.

For additional product information, or full data sheet, please contact with the Linearin's Sales Department or Representatives.

preliminary