## MC74LVX259

## 8-Bit Addressable Latch/1-of-8 Decoder CMOS Logic Level Shifter <br> With LSTTL-Compatible Inputs

The MC74LVX259 is an 8-bit Addressable Latch fabricated with silicon gate CMOS technology.

The internal circuit is composed of three stages, including a buffer output which provides high noise immunity and stable output.

The LVX259 is designed for general purpose storage applications in digital systems. The device has four modes of operation as shown in the mode selection table. In the addressable latch mode, the data on Data In is written into the addressed latch. The addressed latch follows the data input with all non-addressed latches remaining in their previous states. In the memory mode, all latches remain in their previous state and are unaffected by the Data or Address inputs. In the one-of-eight decoding or demultiplexing mode, the addressed output follows the state of Data In with all other outputs in the LOW state. In the Reset mode, all outputs are LOW and unaffected by the address and data inputs. When operating the LVX259 as an addressable latch, changing more than one bit of the address could impose a transient wrong address. Therefore, this should only be done while in the memory mode.

The MC74LVX259 input structure provides protection when voltages up to 7.0 V are applied, regardless of the supply voltage. This allows the MC74LVX259 to be used to interface 5.0 V circuits to 3.0 V circuits.

## Features

- High Speed: $\mathrm{t}_{\mathrm{PD}}=7.0 \mathrm{~ns}$ (Typ) at $\mathrm{V}_{\mathrm{CC}}=3.3 \mathrm{~V}$
- Low Power Dissipation: $\mathrm{I}_{\mathrm{CC}}=2 \mu \mathrm{~A}$ (Max) at $\mathrm{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$
- High Noise Immunity: $\mathrm{V}_{\mathrm{NIH}}=\mathrm{V}_{\mathrm{NIL}}=28 \% \mathrm{~V}_{\mathrm{CC}}$
- CMOS-Compatible Outputs: $\mathrm{V}_{\mathrm{OH}}>0.8 \mathrm{~V}_{\mathrm{CC}} ; \mathrm{V}_{\mathrm{OL}}<0.1 \mathrm{~V}_{\mathrm{CC}} @$ Load
- Power Down Protection Provided on Inputs and Outputs
- Balanced Propagation Delays
- Pin and Function Compatible with Other Standard Logic Families
- Latchup Performance Exceeds 300 mA
- ESD Performance:

Human Body Model > 2000 V;
Machine Model > 200 V

- These Devices are $\mathrm{Pb}-$ Free and are RoHS Compliant

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ORDERING INFORMATION
See detailed ordering and shipping information in the package dimensions section on page 7 of this data sheet.


Figure 1. Logic Diagram


Figure 2. IEC Logic Symbol
MODE SELECTION TABLE

| Enable | Reset | Mode |
| :---: | :---: | :---: |
| L | H | Addressable Latch |
| H | H | Memory |
| L | L | 8-Line Demultiplexer |
| H | L | Reset |

LATCH SELECTION TABLE

| Address Inputs |  | Latch <br> Addressed |  |
| :---: | :---: | :---: | :---: |
| C | B |  | Q0 |
| L | L | L | Q1 |
| L | L | H | Q2 |
| L | H | L | Q3 |
| L | H | H | Q4 |
| H | L | L | Q5 |
| H | L | H | Q6 |
| H | H | L | Q7 |
| H | H | H |  |



Figure 3. Expanded Logic Diagram

## MC74LVX259

MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
| :---: | :---: | :---: | :---: |
| $\mathrm{V}_{\mathrm{CC}}$ | Positive DC Supply Voltage | -0.5 to +7.0 | V |
| $\mathrm{V}_{\text {IN }}$ | Digital Input Voltage | -0.5 to +7.0 | V |
| $\mathrm{V}_{\text {OUT }}$ | DC Output Voltage | -0.5 to $\mathrm{V}_{\text {CC }}+0.5$ | V |
| IIK | Input Diode Current | -20 | mA |
| lok | Output Diode Current | $\pm 20$ | mA |
| Iout | DC Output Current, per Pin | $\pm 25$ | mA |
| $\mathrm{I}_{\mathrm{CC}}$ | DC Supply Current, $\mathrm{V}_{\text {CC }}$ and GND Pins | $\pm 75$ | mA |
| $\mathrm{P}_{\mathrm{D}}$ | $\begin{array}{lr}\text { Power Dissipation in Still Air } & \text { SOIC Package } \\ \text { TSSOP }\end{array}$ | $\begin{aligned} & 200 \\ & 180 \end{aligned}$ | mW |
| TSTG | Storage Temperature Range | -65 to +150 | ${ }^{\circ} \mathrm{C}$ |
| $\mathrm{V}_{\text {ESD }}$ | ESD Withstand Voltage Human Body Model (Note 1) <br> Machine Model (Note 2) <br> Charged Device Model (Note 3) | $\begin{gathered} >2000 \\ >200 \\ >2000 \end{gathered}$ | V |
| LLATCHup | Latchup Performance Above $\mathrm{V}_{\text {CC }}$ and Below GND at $125^{\circ} \mathrm{C}$ (Note 4) | $\pm 300$ | mA |
| $\theta_{\mathrm{JA}}$ | Thermal Resistance, Junction-to-Ambient $\quad$ SOIC Package | $\begin{aligned} & 143 \\ & 164 \end{aligned}$ | ${ }^{\circ} \mathrm{C} / \mathrm{W}$ |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. Tested to EIA/JESD22-A114-A
2. Tested to EIA/JESD22-A115-A
3. Tested to JESD22-C101-A
4. Tested to EIA/JESD78

## RECOMMENDED OPERATING CONDITIONS

| Symbol | Characteristics | Min | Max | Unit |
| :---: | :--- | :---: | :---: | :---: |
| $\mathrm{V}_{\mathrm{CC}}$ | DC Supply Voltage | 2.0 | 3.6 | V |
| $\mathrm{~V}_{\text {IN }}$ | DC Input Voltage | 0 | 5.5 | V |
| $\mathrm{~V}_{\text {OUT }}$ | DC Output Voltage | 0 | $\mathrm{~V}_{\mathrm{CC}}$ | V |
| $\mathrm{T}_{\mathrm{A}}$ | Operating Temperature Range, all Package Types | -40 | 85 | ${ }^{\circ} \mathrm{C}$ |
| $\mathrm{t}_{\mathrm{r}}, \mathrm{t}_{\mathrm{f}}$ | Input Rise or Fall Time | $\mathrm{V}_{\mathrm{CC}}=3.3 \mathrm{~V} \pm 0.3 \mathrm{~V}$ | 0 | 100 |
| n | $\mathrm{ns} / \mathrm{V}$ |  |  |  |

Functional operation above the stresses listed in the Recommended Operating Ranges is not implied. Extended exposure to stresses beyond the Recommended Operating Ranges limits may affect device reliability.

DC CHARACTERISTICS (Voltages Referenced to GND)

| Symbol | Parameter | Condition | $\mathrm{v}_{\mathrm{Cc}}$ <br> (V) | $\mathrm{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$ |  |  | $-40^{\circ} \mathrm{C} \leq \mathrm{T}_{\mathrm{A}} \leq 85^{\circ} \mathrm{C}$ |  | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Min | Typ | Max | Min | Max |  |
| $\mathrm{V}_{\mathrm{IH}}$ | Minimum High-Level Input Voltage |  | $\begin{aligned} & 2.0 \\ & 3.0 \\ & 3.6 \end{aligned}$ | $\begin{aligned} & 0.75 \mathrm{~V}_{\mathrm{CC}} \\ & 0.7 \mathrm{~V}_{\mathrm{CC}} \\ & 0.7 \mathrm{~V}_{\mathrm{CC}} \end{aligned}$ | - - - |  | $\begin{aligned} & 0.75 \mathrm{~V}_{\mathrm{CC}} \\ & 0.7 \mathrm{~V}_{\mathrm{CC}} \\ & 0.7 \mathrm{~V}_{\mathrm{CC}} \end{aligned}$ | - | V |
| $\mathrm{V}_{\text {IL }}$ | Maximum Low-Level Input Voltage |  | $\begin{aligned} & 2.0 \\ & 3.0 \\ & 3.6 \end{aligned}$ | - | - | $\begin{aligned} & \hline 0.25 \mathrm{~V}_{\mathrm{CC}} \\ & 0.3 \mathrm{~V}_{\mathrm{CC}} \\ & 0.3 \mathrm{~V}_{\mathrm{CC}} \end{aligned}$ | - | $\begin{aligned} & \hline 0.25 \mathrm{~V}_{\mathrm{CC}} \\ & 0.3 \mathrm{~V}_{\mathrm{CC}} \\ & 0.3 \mathrm{~V}_{\mathrm{CC}} \end{aligned}$ | V |
| $\mathrm{V}_{\mathrm{OH}}$ | High-Level Output Voltage | $\mathrm{I}_{\mathrm{OH}}=-50 \mu \mathrm{~A}$ | 2.0 | 1.9 | 2.0 | - | 1.9 | - | V |
|  |  | $\mathrm{I}_{\mathrm{OH}}=-50 \mu \mathrm{~A}$ | 3.0 | 2.9 | 3.0 | - | 2.9 | - |  |
|  |  | $\mathrm{IOH}=-4 \mathrm{~mA}$ | 3.0 | 2.58 | - | - | 2.48 | - |  |
| $\mathrm{V}_{\mathrm{OL}}$ | Low-Level Output Voltage | $\mathrm{l} \mathrm{OL}=50 \mu \mathrm{~A}$ | 2.0 | - | 0.0 | 0.1 | - | 0.1 | V |
|  |  | $\mathrm{l} \mathrm{OL}=50 \mu \mathrm{~A}$ | 3.0 | - | 0.0 | 0.1 | - | 0.1 |  |
|  |  | $\mathrm{l}_{\mathrm{OL}}=4 \mathrm{~mA}$ | 3.0 | - | - | 0.36 | - | 0.44 |  |
| 1 N | Input Leakage Current | $\mathrm{V}_{1 \mathrm{I}}=5.5 \mathrm{~V}$ or GND | 0 to 3.6 | - | - | $\pm 0.1$ | - | $\pm 1.0$ | $\mu \mathrm{A}$ |
| $\mathrm{I}_{\mathrm{CC}}$ | Maximum Quiescent Supply Current (per package) | $\mathrm{V}_{\mathbb{I N}}=\mathrm{V}_{\mathrm{CC}}$ or GND | 3.6 | 1.0 | 1.0 | 2.0 | - | - | $\mu \mathrm{A}$ |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

AC ELECTRICAL CHARACTERISTICS Input $t_{r}=t_{f}=3.0 \mathrm{~ns}$

| Symbol | Parameter | Test Conditions |  | $\mathrm{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$ |  |  | $-40^{\circ} \mathrm{C} \leq \mathrm{T}_{\mathrm{A}} \leq 85^{\circ} \mathrm{C}$ |  | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Min | Typ | Max | Min | Max |  |
| $\begin{aligned} & \text { tpLH, } \\ & \text { tpHL }^{2} \end{aligned}$ | Maximum Propagation Delay, Data to Output (Figures 4 and 8) | $\mathrm{V}_{C C}=2.7 \mathrm{~V}$ | $\begin{aligned} & C_{L}=15 \mathrm{pF} \\ & C_{L}=50 \mathrm{pF} \end{aligned}$ | - | $\begin{aligned} & 6.3 \\ & 9.0 \end{aligned}$ | $\begin{gathered} \hline 9.0 \\ 14.0 \end{gathered}$ | $\begin{aligned} & 1.0 \\ & 1.0 \end{aligned}$ | $\begin{aligned} & 12.0 \\ & 15.0 \end{aligned}$ | ns |
|  |  | $\mathrm{V}_{\mathrm{CC}}=3.3 \mathrm{~V} \pm 0.3 \mathrm{~V}$ | $\begin{aligned} & \mathrm{C}_{\mathrm{L}}=15 \mathrm{pF} \\ & \mathrm{C}_{\mathrm{L}}=50 \mathrm{pF} \end{aligned}$ | - | $\begin{aligned} & 5.6 \\ & 8.0 \end{aligned}$ | $\begin{gathered} 8.0 \\ 12.0 \end{gathered}$ | $\begin{aligned} & 1.0 \\ & 1.0 \end{aligned}$ | $\begin{aligned} & 11.0 \\ & 14.0 \end{aligned}$ |  |
| $\begin{aligned} & \text { tPLH, } \\ & \text { tpHL }^{2} \end{aligned}$ | Maximum Propagation Delay, Address Select to Output (Figures 5 and 8) | $\mathrm{V}_{\mathrm{CC}}=2.7 \mathrm{~V}$ | $\begin{aligned} & C_{\mathrm{L}}=15 \mathrm{pF} \\ & \mathrm{C}_{\mathrm{L}}=50 \mathrm{pF} \end{aligned}$ | - | $\begin{aligned} & 6.3 \\ & 9.0 \end{aligned}$ | $\begin{gathered} 9.0 \\ 14.0 \end{gathered}$ | $\begin{aligned} & 1.0 \\ & 1.0 \end{aligned}$ | $\begin{aligned} & 12.0 \\ & 15.0 \end{aligned}$ | ns |
|  |  | $\mathrm{V}_{\mathrm{CC}}=3.3 \mathrm{~V} \pm 0.3 \mathrm{~V}$ | $\begin{aligned} & \mathrm{C}_{\mathrm{L}}=15 \mathrm{pF} \\ & \mathrm{C}_{\mathrm{L}}=50 \mathrm{pF} \end{aligned}$ |  | $\begin{aligned} & 5.6 \\ & 8.0 \end{aligned}$ | $\begin{gathered} \hline 8.0 \\ 12.0 \end{gathered}$ | $\begin{aligned} & \hline 1.0 \\ & 1.0 \end{aligned}$ | $\begin{aligned} & \hline 11.0 \\ & 14.0 \end{aligned}$ |  |
| $\begin{aligned} & \text { tpLH, } \\ & \text { tpHL }^{2} \end{aligned}$ | Maximum Propagation Delay, Enable to Output (Figures 6 and 8) | $\mathrm{V}_{\mathrm{CC}}=2.7 \mathrm{~V}$ | $\begin{aligned} & C_{L}=15 \mathrm{pF} \\ & C_{L}=50 \mathrm{pF} \end{aligned}$ |  | $\begin{aligned} & \hline 6.3 \\ & 9.0 \end{aligned}$ | $\begin{gathered} 9.0 \\ 14.0 \end{gathered}$ | $\begin{aligned} & \hline 1.0 \\ & 1.0 \end{aligned}$ | $\begin{aligned} & 12.0 \\ & 15.0 \end{aligned}$ | ns |
|  |  | $\mathrm{V}_{\mathrm{CC}}=3.3 \mathrm{~V} \pm 0.3 \mathrm{~V}$ | $\begin{aligned} & C_{\mathrm{L}}=15 \mathrm{pF} \\ & \mathrm{C}_{\mathrm{L}}=50 \mathrm{pF} \end{aligned}$ | - | $\begin{aligned} & 5.6 \\ & 8.0 \end{aligned}$ | $\begin{gathered} \hline 9.0 \\ 12.0 \end{gathered}$ | $\begin{aligned} & \hline 1.0 \\ & 1.0 \end{aligned}$ | $\begin{aligned} & \hline 11.0 \\ & 14.0 \end{aligned}$ |  |
| $\mathrm{t}_{\text {PHL }}$ | Maximum Propogation Delay, Reset to Output (Figures 6 and 8) | $\mathrm{V}_{\mathrm{CC}}=2.7 \mathrm{~V}$ | $\begin{aligned} & C_{L}=15 \mathrm{pF} \\ & \mathrm{C}_{\mathrm{L}}=50 \mathrm{pF} \end{aligned}$ |  | $\begin{aligned} & 6.3 \\ & 9.0 \end{aligned}$ | $\begin{gathered} 9.0 \\ 14.0 \end{gathered}$ | $\begin{aligned} & \hline 1.0 \\ & 1.0 \end{aligned}$ | $\begin{aligned} & \hline 12.0 \\ & 15.0 \end{aligned}$ | ns |
|  |  | $\mathrm{V}_{\mathrm{CC}}=3.3 \mathrm{~V} \pm 0.3 \mathrm{~V}$ | $\begin{aligned} & C_{\mathrm{L}}=15 \mathrm{pF} \\ & \mathrm{C}_{\mathrm{L}}=50 \mathrm{pF} \end{aligned}$ | - | $\begin{aligned} & 5.6 \\ & 8.0 \end{aligned}$ | $\begin{gathered} \hline 9.0 \\ 12.0 \end{gathered}$ | $\begin{aligned} & \hline 1.0 \\ & 1.0 \end{aligned}$ | $\begin{aligned} & \hline 11.0 \\ & 14.0 \end{aligned}$ |  |
| $\mathrm{C}_{\text {IN }}$ | Maximum Input Capacitance |  |  | - | 6 | 10 | - | 10 | pF |
| $\mathrm{C}_{\text {PD }}$ | Power Dissipation Capacitance (Note 5) |  |  | Typical @ $25^{\circ} \mathrm{C}, \mathrm{V}_{\mathrm{cc}}=3.3 \mathrm{~V}$ |  |  |  |  | pF |
|  |  |  |  |  |  | 30 |  |  |  |

5. $\mathrm{C}_{\mathrm{PD}}$ is defined as the value of the internal equivalent capacitance which is calculated from the operating current consumption without load. Average operating current can be obtained by the equation: $I_{C C(O P R)}=C_{P D} \bullet V_{C C} \bullet f_{i n}+I_{C C} . C_{P D}$ is used to determine the no-load dynamic power consumption; $\mathrm{P}_{\mathrm{D}}=\mathrm{C}_{\mathrm{PD}} \bullet \mathrm{V}_{\mathrm{CC}}{ }^{2} \bullet \mathrm{f}_{\mathrm{in}}+\mathrm{I}_{\mathrm{CC}} \bullet \mathrm{V}_{\mathrm{CC}}$.

TIMING REQUIREMENTS Input $t_{r}=t_{f}=3.0 \mathrm{~ns}$

| Symbol | Parameter | Test Conditions | $\mathrm{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$ |  |  | $\mathrm{T}_{\mathrm{A}}=\leq 85^{\circ} \mathrm{C}$ |  | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Min | Typ | Max | Min | Max |  |
| $\mathrm{t}_{\text {w }}$ | Minimum Pulse Width, Reset or Enable (Figure 7) | $\mathrm{V}_{\mathrm{CC}}=2.7 \mathrm{~V}$ | 4.5 | - | - | 5.0 | - | ns |
|  |  | $\mathrm{V}_{\mathrm{CC}}=3.3 \mathrm{~V} \pm 0.3 \mathrm{~V}$ | 4.5 | - | - | 5.0 | - |  |
| $\mathrm{t}_{\text {su }}$ | Minimum Setup Time, Address or Data to Enable (Figure 7) | $\mathrm{V}_{\mathrm{CC}}=2.7 \mathrm{~V}$ | 4.0 | - | - | 4.0 | - | ns |
|  |  | $\mathrm{V}_{\mathrm{CC}}=3.3 \mathrm{~V} \pm 0.3 \mathrm{~V}$ | 3.0 | - | - | 3.0 | - |  |
| $t_{n}$ | Minimum Hold Time, Enable to Address or Data (Figure 6 or 7) | $\mathrm{V}_{\mathrm{CC}}=2.7 \mathrm{~V}$ | 2.0 | - | - | 2.0 | - | ns |
|  |  | $\mathrm{V}_{\mathrm{CC}}=3.3 \mathrm{~V} \pm 0.3 \mathrm{~V}$ | 2.0 | - | - | 2.0 | - |  |
| $\mathrm{tr}_{\mathrm{r}, \mathrm{t}} \mathrm{t}$ | Maximum Input, Rise and Fall Times (Figure 4) | $\mathrm{V}_{\mathrm{CC}}=2.7 \mathrm{~V}$ | - | - | 400 | - | 300 | ns |
|  |  | $\mathrm{V}_{\mathrm{CC}}=3.3 \mathrm{~V} \pm 0.3 \mathrm{~V}$ | - | - | 300 | - | 300 |  |



Figure 4. Switching Waveform
Figure 5. Switching Waveform


Figure 6. Switching Waveform


Figure 7. Switching Waveform


Figure 8. Switching Waveform

*Includes all probe and jig capacitance
Figure 9. Test Circuit

ORDERING INFORMATION

| Device | Package | Shipping ${ }^{\dagger}$ |
| :--- | :--- | :---: |
| MC74LVX259DG | SOIC-16 <br> (Pb-Free) | 48 Units / Rail |
| MC74LVX259DR2G | SOIC-16 <br> (Pb-Free) | 2500 Tape \& Reel |
| MC74LVX259DTG | TSSOP-16 <br> (Pb-Free) | 96 Units / Rail |
| MC74LVX259DTR2G | TSSOP-16 <br> (Pb-Free) | 2500 Tape \& Reel |

$\dagger$ For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

EMBOSSED CARRIER DIMENSIONS (See Notes 6 and 7)

| Tape Size | $\begin{aligned} & B_{1} \\ & \operatorname{Max} \end{aligned}$ | D | $\mathrm{D}_{1}$ | E | F | K | P | $\mathrm{P}_{0}$ | $\mathrm{P}_{2}$ | R | T | W |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 8 mm | $\begin{aligned} & 4.35 \mathrm{~mm} \\ & \left(0.179^{\prime \prime}\right) \end{aligned}$ | $\begin{gathered} 1.5 \mathrm{~mm} \\ +0.1 \\ -0.0 \\ \left(0.059^{\prime \prime}\right. \\ +0.004 \\ -0.0) \end{gathered}$ | 1.0 mm Min (0.179") | $\begin{gathered} 1.75 \mathrm{~mm} \\ \pm 0.1 \\ (0.069 \\ \left. \pm 0.004^{\prime \prime}\right) \end{gathered}$ | $\begin{gathered} 3.5 \mathrm{~mm} \\ \pm 0.5 \\ (1.38 \\ \left. \pm 0.002^{\prime \prime}\right) \end{gathered}$ |  | $\begin{gathered} 4.0 \mathrm{~mm} \\ \pm 0.10 \\ (0.157 \\ \left. \pm 0.004^{\prime \prime}\right) \end{gathered}$ | $\begin{gathered} 4.0 \mathrm{~mm} \\ \pm 0.1 \\ (0.157 \\ \left. \pm 0.004^{\prime \prime}\right) \end{gathered}$ | $\begin{gathered} 2.0 \mathrm{~mm} \\ \pm 0.1 \\ (0.079 \\ \left. \pm 0.004^{\prime \prime}\right) \end{gathered}$ | $\begin{aligned} & 25 \mathrm{~mm} \\ & \left(0.98^{\prime \prime}\right) \end{aligned}$ | $\begin{aligned} & 0.6 \mathrm{~mm} \\ & (0.024) \end{aligned}$ | $\begin{aligned} & 8.3 \mathrm{~mm} \\ & (0.327) \end{aligned}$ |
| 12 mm | $\begin{aligned} & 8.2 \mathrm{~mm} \\ & \left(0.323^{\prime \prime}\right) \end{aligned}$ |  | 1.5 mm Min (0.060) |  | $\begin{gathered} 5.5 \mathrm{~mm} \\ \pm 0.5 \\ (0.217 \\ \left. \pm 0.002^{\prime \prime}\right) \end{gathered}$ | $\begin{aligned} & \hline 6.4 \mathrm{~mm} \\ & \mathrm{Max} \\ & \left(0.252^{\prime \prime}\right) \end{aligned}$ | $\begin{gathered} \hline 4.0 \mathrm{~mm} \\ \pm 0.10 \\ (0.157 \\ \left. \pm 0.004^{\prime \prime}\right) \\ 8.0 \mathrm{~mm} \\ \pm 0.10 \\ (0.315 \\ \left. \pm 0.004^{\prime \prime}\right) \end{gathered}$ |  |  | $\begin{aligned} & 30 \mathrm{~mm} \\ & \left(1.18^{\prime \prime}\right) \end{aligned}$ |  | $\begin{gathered} 12.0 \mathrm{~mm} \\ \pm 0.3 \\ (0.470 \\ \left. \pm 0.012^{\prime \prime}\right) \end{gathered}$ |
| 16 mm | $\begin{aligned} & 12.1 \mathrm{~mm} \\ & \left(0.4766^{\prime \prime}\right) \end{aligned}$ |  |  |  | $\begin{gathered} 7.5 \mathrm{~mm} \\ \pm 0.10 \\ (0.295 \\ \left. \pm 0.004^{\prime \prime}\right) \end{gathered}$ | 7.9 mm Max (0.311") | $\begin{gathered} 4.0 \mathrm{~mm} \\ \pm 0.10 \\ (0.157 \\ \left. \pm 0.004^{\prime \prime}\right) \\ 8.0 \mathrm{~mm} \\ \pm 0.10 \\ (0.315 \\ \left. \pm 0.004^{\prime \prime}\right) \\ 12.0 \mathrm{~mm} \\ \pm 0.10 \\ (0.472 \\ \left. \pm 0.004^{\prime \prime}\right) \end{gathered}$ |  |  |  |  | $\begin{gathered} 16.3 \mathrm{~mm} \\ (0.642) \end{gathered}$ |
| 24 mm | $\begin{aligned} & 20.1 \text { mm } \\ & \left(0.791^{\prime \prime}\right) \end{aligned}$ |  |  |  | $\begin{gathered} 11.5 \mathrm{~mm} \\ \pm 0.10 \\ (0.453 \\ \left. \pm 0.004^{\prime \prime}\right) \end{gathered}$ | $\begin{gathered} \hline 11.9 \mathrm{~mm} \\ \mathrm{Max} \\ \left(0.468{ }^{\prime \prime}\right) \end{gathered}$ | $\begin{gathered} 16.0 \mathrm{~mm} \\ \pm 0.10 \\ (0.63 \\ \left. \pm 0.004^{\prime \prime}\right) \end{gathered}$ |  |  |  |  | $\begin{gathered} 24.3 \mathrm{~mm} \\ (0.957) \end{gathered}$ |

6. Metric Dimensions Govern-English are in parentheses for reference only.
7. $\mathrm{A}_{0}, \mathrm{~B}_{0}$, and $\mathrm{K}_{0}$ are determined by component size. The clearance between the components and the cavity must be within 0.05 mm min to 0.50 mm max. The component cannot rotate more than $10^{\circ}$ within the determined cavity

SOIC-16
CASE 751B-05
ISSUE K
SCALE 1:1


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