## Single Inverter

## MC74HC1G04

The MC74HC1G04 is a high speed CMOS inverter fabricated with silicon gate CMOS technology.

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

The MC74HC1G04 output drive current is $1 / 2$ compared to MC74HC series.

## Features

- High Speed: $t_{\text {PD }}=7 \mathrm{~ns}(\mathrm{Typ})$ at $\mathrm{V}_{\mathrm{CC}}=5 \mathrm{~V}$
- Low Power Dissipation: $\mathrm{I}_{\mathrm{CC}}=1 \mu \mathrm{~A}$ (Max) at $\mathrm{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$
- High Noise Immunity
- Balanced Propagation Delays $\left(\mathrm{t}_{\mathrm{pLH}}=\mathrm{t}_{\mathrm{pHL}}\right)$
- Symmetrical Output Impedance $\left(\mathrm{I}_{\mathrm{OH}}=\mathrm{I}_{\mathrm{OL}}=2 \mathrm{~mA}\right)$
- Chip Complexity: < 100 FETs
- NLV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q100 Qualified and PPAP Capable
- These Devices are $\mathrm{Pb}-$ Free, Halogen Free/BFR Free and are RoHS Compliant


Figure 1. Pinout


Figure 2. Logic Symbol

| PIN ASSIGNMENT |  |
| :---: | :---: |
| 1 | NC |
| 2 | A |
| 3 | GND |
| 4 | Y |
| 5 | $\mathrm{~V}_{\mathrm{CC}}$ |



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$$
\begin{aligned}
& \text { XX }=\text { Device Code } \\
& \text { M }=\text { Date Code* } \\
& \text { - } \quad=\text { Pb-Free Package }
\end{aligned}
$$

(Note: Microdot may be in either location)
*Date Code orientation and/or position may vary depending upon manufacturing location.


$$
\begin{array}{ll}
\text { XXX } & =\text { Specific Device Code } \\
\text { M } & =\text { Date Code } \\
\text { - } & =\text { Pb-Free Package }
\end{array}
$$


(Note: Microdot may be in either location)

FUNCTION TABLE

| Input A | Output Y |
| :---: | :---: |
| L | H |
| H | L |

ORDERING INFORMATION
See detailed ordering, marking and shipping information in the package dimensions section on page 5 of this data sheet.

MC74HC1G04

MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
| :---: | :--- | :---: | :---: |
| $\mathrm{V}_{\mathrm{CC}}$ | DC Supply Voltage | SC-88A (NLV), TSOP-5 |  |
| SC-88A, SC-74A |  |  |  |$)$

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. Measured with minimum pad spacing on an FR4 board, using 10 mm -by-1 inch, 20 ounce copper trace with no air flow per JESD51-7.
2. HBM tested to ANSI/ESDA/JEDEC JS-001-2017. CDM tested to JESD22-C101-F. JEDEC recommends that ESD qualification to EIA/JESD22-A115A (Machine Model) be discontinued per JEDEC/JEP172A.
3. Tested to EIA/JESD78 Class II.

## RECOMMENDED OPERATING CONDITIONS

| Symbol | Parameter |  | Min | Max | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathrm{V}_{\mathrm{CC}}$ | DC Supply Voltage |  | 2.0 | 6.0 | V |
| $\mathrm{V}_{\text {IN }}$ | DC Input Voltage |  | 0.0 | $\mathrm{V}_{\mathrm{CC}}$ | V |
| $\mathrm{V}_{\text {OUT }}$ | DC Output Voltage |  | 0.0 | $\mathrm{V}_{\mathrm{CC}}$ | V |
| $\mathrm{T}_{\mathrm{A}}$ | Operating Temperature Range |  | -55 | +125 | ${ }^{\circ} \mathrm{C}$ |
| $\mathrm{tr}_{\mathrm{r}}, \mathrm{t}_{\mathrm{f}}$ | Input Rise and Fall Time | $\begin{array}{r} \text { SC-88A (NLV), TSOP-5 } \\ \mathrm{V}_{\mathrm{CC}}=2.0 \mathrm{~V} \\ \mathrm{~V}_{\mathrm{CC}}=3.0 \mathrm{~V} \\ \mathrm{~V}_{\mathrm{CC}}=6.5 \mathrm{~V} \end{array}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 1000 \\ & 600 \\ & 500 \\ & 400 \\ & \hline \end{aligned}$ | ns |
|  | Input Rise and Fall Time | $\begin{array}{r} \mathrm{SC}-88 \mathrm{~A}, \mathrm{SC}-74 \mathrm{~A} \\ \mathrm{~V} C \mathrm{C}=2.0 \mathrm{~V} \\ \mathrm{~V} \mathrm{CC}=2.3 \mathrm{~V} \text { to } 2.7 \mathrm{~V} \\ \mathrm{VCC}=3.0 \mathrm{~V} \text { to } 3.6 \mathrm{~V} \\ \mathrm{~V}_{\mathrm{CC}}=4.5 \mathrm{~V} \text { to } 6.0 \mathrm{~V} \end{array}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{gathered} 20 \\ 20 \\ 10 \\ 5 \end{gathered}$ | ns/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 ELECTRICAL CHARACTERISTICS

| Symbol | Parameter | Test Conditions | $\mathrm{V}_{\mathrm{cc}}$ <br> (V) | $\mathrm{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$ |  |  | $-40^{\circ} \mathrm{C} \leq \mathrm{T}_{\mathrm{A}} \leq 85^{\circ} \mathrm{C}$ |  | $-55^{\circ} \mathrm{C} \leq \mathrm{T}_{\mathrm{A}} \leq 125^{\circ} \mathrm{C}$ |  | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Min | Typ | Max | Min | Max | Min | Max |  |
| $\mathrm{V}_{\mathrm{IH}}$ | High-Level Input Voltage |  | $\begin{aligned} & 2.0 \\ & 3.0 \\ & 4.5 \\ & 6.0 \end{aligned}$ | $\begin{gathered} 1.5 \\ 2.1 \\ 3.15 \\ 4.20 \end{gathered}$ | $\begin{aligned} & - \\ & \text { - } \\ & \text { - } \end{aligned}$ | $\begin{aligned} & - \\ & - \\ & - \end{aligned}$ | $\begin{gathered} 1.5 \\ 2.1 \\ 3.15 \\ 4.20 \end{gathered}$ | - | $\begin{aligned} & 1.5 \\ & 2.1 \\ & 3.15 \\ & 4.20 \end{aligned}$ | $\begin{aligned} & - \\ & \text { - } \\ & \text { - } \end{aligned}$ | V |
| $\mathrm{V}_{\mathrm{IL}}$ | Low-Level Input Voltage |  | $\begin{aligned} & 2.0 \\ & 3.0 \\ & 4.5 \\ & 6.0 \end{aligned}$ | - <br> - <br> - | - | $\begin{gathered} \hline 0.5 \\ 0.9 \\ 1.35 \\ 1.80 \end{gathered}$ | - - - | $\begin{gathered} \hline 0.5 \\ 0.9 \\ 1.35 \\ 1.80 \end{gathered}$ | - | $\begin{gathered} \hline 0.5 \\ 0.9 \\ 1.35 \\ 1.80 \end{gathered}$ | V |
| $\mathrm{V}_{\mathrm{OH}}$ | High-Level Output Voltage | $\begin{aligned} & \mathrm{V}_{\mathrm{IN}}=\mathrm{V}_{\mathrm{IH}} \text { or } \mathrm{V}_{\mathrm{IL}} \\ & \mathrm{I}_{\mathrm{OH}}=-20 \mu \mathrm{~A} \end{aligned}$ | $\begin{aligned} & 2.0 \\ & 3.0 \\ & 4.5 \\ & 6.0 \end{aligned}$ | $\begin{aligned} & 1.9 \\ & 2.9 \\ & 4.4 \\ & 5.9 \end{aligned}$ | $\begin{aligned} & 2.0 \\ & 3.0 \\ & 4.5 \\ & 6.0 \end{aligned}$ | - | $\begin{aligned} & 1.9 \\ & 2.9 \\ & 4.4 \\ & 5.9 \end{aligned}$ | - | $\begin{aligned} & 1.9 \\ & 2.9 \\ & 4.4 \\ & 5.9 \end{aligned}$ | - - - | V |
|  |  | $\begin{aligned} & \mathrm{V}_{\mathrm{IN}}=\mathrm{V}_{\mathrm{IH}} \text { or } \mathrm{V}_{\mathrm{IL}} \\ & \mathrm{IOH}_{\mathrm{OH}}=-2 \mathrm{~mA} \\ & \mathrm{I}_{\mathrm{OH}}=-2.6 \mathrm{~mA} \end{aligned}$ | $\begin{aligned} & 4.5 \\ & 6.0 \end{aligned}$ | $\begin{aligned} & 4.18 \\ & 5.68 \end{aligned}$ | $\begin{aligned} & 4.31 \\ & 5.80 \end{aligned}$ | - | $\begin{aligned} & 4.13 \\ & 5.63 \end{aligned}$ | - | $\begin{aligned} & 4.08 \\ & 5.58 \end{aligned}$ | - |  |
| $\mathrm{V}_{\text {OL }}$ | Low-Level Output Voltage | $\begin{aligned} & \mathrm{V}_{\mathrm{IN}}=\mathrm{V}_{\mathrm{IH}} \text { or } \mathrm{V}_{\mathrm{IL}} \\ & \mathrm{I}_{\mathrm{OL}}=20 \mu \mathrm{~A} \end{aligned}$ | $\begin{aligned} & 2.0 \\ & 3.0 \\ & 4.5 \\ & 6.0 \end{aligned}$ | $\begin{aligned} & - \\ & \text { - } \\ & \text { - } \end{aligned}$ | $\begin{aligned} & 0.0 \\ & 0.0 \\ & 0.0 \\ & 0.0 \end{aligned}$ | $\begin{aligned} & 0.1 \\ & 0.1 \\ & 0.1 \\ & 0.1 \end{aligned}$ | $\begin{aligned} & - \\ & \text { - } \\ & \text { - } \end{aligned}$ | $\begin{aligned} & 0.1 \\ & 0.1 \\ & 0.1 \\ & 0.1 \end{aligned}$ | - | $\begin{aligned} & 0.1 \\ & 0.1 \\ & 0.1 \\ & 0.1 \end{aligned}$ | V |
|  |  | $\begin{aligned} & \mathrm{V}_{\mathrm{IN}}=\mathrm{V}_{\mathrm{IH}} \text { or } \mathrm{V}_{\mathrm{IL}} \\ & \mathrm{l}_{\mathrm{OL}}=2 \mathrm{~mA} \\ & \mathrm{I}_{\mathrm{OL}}=2.6 \mathrm{~mA} \end{aligned}$ | $\begin{aligned} & 4.5 \\ & 6.0 \end{aligned}$ | - | $\begin{aligned} & 0.17 \\ & 0.18 \end{aligned}$ | $\begin{aligned} & 0.26 \\ & 0.26 \end{aligned}$ | - | $\begin{aligned} & 0.33 \\ & 0.33 \end{aligned}$ | - | $\begin{aligned} & 0.40 \\ & 0.40 \end{aligned}$ |  |
| $\mathrm{I}_{\mathrm{IN}}$ | Input Leakage Current | $\begin{aligned} & \mathrm{V}_{\mathbb{I N}}=6.0 \mathrm{~V} \text { or } \\ & \text { GND } \end{aligned}$ | 6.0 | - | - | $\pm 0.1$ | - | $\pm 1.0$ | - | $\pm 1.0$ | $\mu \mathrm{A}$ |
| ICC | Quiescent Supply Current | $\begin{aligned} & \mathrm{V}_{\mathrm{IN}}=\mathrm{V}_{\mathrm{CC}} \text { or } \\ & \mathrm{GND} \end{aligned}$ | 6.0 | - | - | 1.0 | - | 10 | - | 40 | $\mu \mathrm{A}$ |

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

|  |  |  |  | $\mathrm{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$ |  |  | $-40^{\circ} \mathrm{C} \leq \mathrm{T}_{\mathrm{A}} \leq 85^{\circ} \mathrm{C}$ |  | $-55^{\circ} \mathrm{C} \leq \mathrm{T}_{\mathrm{A}} \leq 125^{\circ} \mathrm{C}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Symbol | Parameter | Test Conditions |  | Min | Typ | Max | Min | Max | Min | Max | Unit |
| $\begin{aligned} & \text { tpLH, } \\ & t_{\text {PHL }} \end{aligned}$ | Propagation Delay, A to Y | $\mathrm{V}_{\mathrm{CC}}=5.0 \mathrm{~V}$ | $\mathrm{C}_{\mathrm{L}}=15 \mathrm{pF}$ | - | 3.5 | 15 | - | 20 | - | 25 | ns |
|  |  | $\begin{aligned} & \mathrm{V}_{\mathrm{CC}}=2.0 \\ & \mathrm{~V}_{\mathrm{CC}}=3.0 \\ & \mathrm{~V}_{\mathrm{CC}}=4.5 \\ & \mathrm{~V}_{\mathrm{CC}}=6.0 \end{aligned}$ | $\mathrm{C}_{\mathrm{L}}=50 \mathrm{pF}$ |  | $\begin{gathered} 20 \\ 11 \\ 8 \\ 7 \end{gathered}$ | $\begin{aligned} & 100 \\ & 27 \\ & 20 \\ & 17 \end{aligned}$ |  | $\begin{aligned} & 125 \\ & 35 \\ & 25 \\ & 21 \end{aligned}$ |  | $\begin{aligned} & 155 \\ & 90 \\ & 35 \\ & 26 \end{aligned}$ |  |
| $\begin{gathered} \mathrm{t}_{\mathrm{TLH}}, \\ \mathrm{t}_{\mathrm{TH}}, \end{gathered}$ | Output Transition Time | $\mathrm{V}_{\mathrm{CC}}=5.0 \mathrm{~V}$ | $\mathrm{C}_{\mathrm{L}}=15 \mathrm{pF}$ | - | 3 | 10 | - | 15 | - | 20 | ns |
|  |  | $\begin{aligned} & \mathrm{V}_{\mathrm{CC}}=2.0 \\ & \mathrm{~V}_{\mathrm{CC}}=3.0 \\ & \mathrm{~V}_{\mathrm{CC}}=4.5 \\ & \mathrm{~V}_{\mathrm{CC}}=6.0 \end{aligned}$ | $\mathrm{C}_{\mathrm{L}}=50 \mathrm{pF}$ | - | $\begin{gathered} \hline 25 \\ 16 \\ 11 \\ 9 \end{gathered}$ | $\begin{aligned} & 125 \\ & 35 \\ & 25 \\ & 21 \end{aligned}$ | - | $\begin{gathered} \hline 155 \\ 45 \\ 31 \\ 26 \end{gathered}$ | - | $\begin{gathered} \hline 200 \\ 60 \\ 38 \\ 32 \end{gathered}$ |  |
| $\mathrm{C}_{\text {IN }}$ | Input Capacitance |  |  | - | 5 | 10 | - | 10 | - | 10 | pF |


|  |  | Typical @ 25 |  |
| :--- | :--- | :---: | :---: |
|  | ${ }^{\circ} \mathbf{C}, \mathbf{\mathbf { V } _ { \mathbf { C C } } = \mathbf { 5 . 0 } \mathbf { V }}$ |  |  |
| $\mathrm{C}_{\mathrm{PD}}$ | Power Dissipation Capacitance (Note 4) | 10 | pF |

4. $\mathrm{C}_{\text {PD }}$ 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: $\mathrm{I}_{\mathrm{CC}(\mathrm{OPR})}=\mathrm{C}_{\mathrm{PD}} \bullet \mathrm{V}_{\mathrm{CC}} \bullet \mathrm{f}_{\text {in }}+\mathrm{I}_{\mathrm{CC}}$. $\mathrm{C}_{\mathrm{PD}}$ is used to determine the no-load dynamic power consumption; $\mathrm{P}_{\mathrm{D}}=\mathrm{C}_{\mathrm{PD}} \bullet \mathrm{V}_{\mathrm{CC}}{ }^{2} \bullet \mathrm{f}_{\mathrm{in}}+\mathrm{I}_{\mathrm{CC}} \bullet \mathrm{V}_{\mathrm{CC}}$.

## MC74HC1G04



| Test | Switch Position | $C_{L}, \mathrm{pF}$ | $\mathrm{R}_{\mathrm{L}}, \mathbf{\Omega}$ |
| :---: | :---: | :---: | :---: |
| $\mathrm{t}_{\text {PLH }} / \mathrm{t}_{\text {PHL }}$ | Open | See AC Characteristics Table | X |
| $\begin{gathered} \mathrm{t}_{\mathrm{TLH}} / \mathrm{t}_{\mathrm{THL}} \\ (\text { Note } 5) \end{gathered}$ | Open |  | X |
| $t_{\text {PLZ }} / t_{\text {PZL }}$ | $\mathrm{V}_{\mathrm{CC}}$ |  | 1 k |
| $\mathrm{t}_{\text {PHZ }} / \mathrm{t}_{\text {PZ }}$ | GND |  | 1 k |

X - Don't Care
${ }^{*} C_{L}$ includes probe and jig capacitance
$R_{T}$ is $Z_{\text {OUT }}$ of pulse generator (typically 50 W ) $\mathrm{f}=1 \mathrm{MHz}$

Figure 3. Test Circuit


Figure 4. Switching Waveforms

| $\mathrm{V}_{\mathrm{cc}}, \mathrm{V}$ | $\mathrm{V}_{\text {mi }}, \mathrm{V}$ | $\mathrm{V}_{\mathrm{mo}}, \mathrm{V}$ |  | $\mathrm{V}_{\mathrm{L}}, \mathrm{V}$ | $\mathrm{V}_{\mathrm{H}}, \mathrm{V}$ | $\mathrm{V}_{\mathbf{Y}}, \mathbf{V}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\mathrm{t}_{\text {PLH }}, \mathrm{t}_{\text {PHL }}$ | $\mathrm{t}_{\text {PZL }}, \mathrm{t}_{\text {PLZ }}, \mathrm{t}_{\text {PZH }}, \mathrm{t}_{\text {PHZ }}$ |  |  |  |
| 3.0 to 3.6 | $\mathrm{V}_{\mathrm{cc}} / 2$ | $\mathrm{V}_{\mathrm{CC}} / 2$ | $\mathrm{V}_{\mathrm{cC}} / 2$ | $\mathrm{V}_{\mathrm{OL}}+0.1\left(\mathrm{~V}_{\mathrm{OH}}-\mathrm{V}_{\mathrm{OL}}\right)$ | $\mathrm{V}_{\mathrm{OL}}+0.9\left(\mathrm{~V}_{\mathrm{OH}}-\mathrm{V}_{\mathrm{OL}}\right)$ | 0.3 |
| 4.5 to 5.5 | $\mathrm{V}_{\mathrm{cc}} / 2$ | $\mathrm{V}_{\mathrm{cc}} / 2$ | $\mathrm{V}_{\mathrm{CC}} / 2$ | $\mathrm{V}_{\mathrm{OL}}+0.1\left(\mathrm{~V}_{\mathrm{OH}}-\mathrm{V}_{\mathrm{OL}}\right)$ | $\mathrm{V}_{\mathrm{OL}}+0.9\left(\mathrm{~V}_{\mathrm{OH}}-\mathrm{V}_{\mathrm{OL}}\right)$ | 0.3 |

5. $\mathrm{t}_{\mathrm{TLH}}$ and $\mathrm{t}_{\mathrm{THL}}$ are measured from $10 \%$ to $90 \%$ of $\left(\mathrm{V}_{\mathrm{OH}}-\mathrm{V}_{\mathrm{OL}}\right)$, and $90 \%$ to $10 \%$ of $\left(\mathrm{V}_{\mathrm{OH}}-\mathrm{V}_{\mathrm{OL}}\right)$, respectively.

## MC74HC1G04

ORDERING INFORMATION

| Device | Packages | Specific Device Code | Pin 1 Orientation (See below) | Shipping ${ }^{\dagger}$ |
| :---: | :---: | :---: | :---: | :---: |
| MC74HC1G04DFT1G | SC-88A | H5 | Q2 | 3000 / Tape \& Reel |
| NLVHC1G04DFT1G* | SC-88A | H5 | Q2 | 3000 / Tape \& Reel |
| MC74HC1G04DFT2G | SC-88A | H5 | Q4 | 3000 / Tape \& Reel |
| NLVHC1G04DFT2G* | SC-88A | H5 | Q4 | 3000 / Tape \& Reel |
| MC74HC1G04DTT1G | TSOP-5 | H5 | Q4 | 3000 / Tape \& Reel |
| MC74HC1G04DBVT1G | SC-74A | H5 | Q4 | 3000 / Tape \& Reel |

$\dagger$ For complete information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.
*NLV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q100 Qualified and PPAP Capable.

Pin 1 Orientation in Tape and Reel
Direction of Feed



SCALE 2:1


1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD
FLASH, PROTRUSIONS, OR GATE BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.15 PER SIDE

| DIM | MILLIMETERS |  |
| :---: | :---: | :---: |
|  | MIN | MAX |
| A | 0.90 | 1.10 |
| A1 | 0.01 | 0.10 |
| $\mathbf{b}$ | 0.25 | 0.50 |
| $\mathbf{c}$ | 0.10 | 0.26 |
| $\mathbf{D}$ | 2.85 | 3.15 |
| E | 2.50 | 3.00 |
| E1 | 1.35 | 1.65 |
| $\mathbf{e}$ | 0.95 BSC |  |
| $\mathbf{L}$ | 0.20 | 0.60 |
| $\mathbf{M}$ | $0^{\circ}$ |  |

RECOMMENDED SOLDERING FOOTPRINT*


GENERIC MARKING DIAGRAM*


XXX = Specific Device Code
$M \quad=$ Date Code

- $\quad=$ Pb-Free Package
(Note: Microdot may be in either location)
*This information is generic. Please refer to device data sheet for actual part marking. $\mathrm{Pb}-$ Free indicator, " G " or microdot " - ", may or may not be present. Some products may not follow the Generic Marking.
*For additional information on our $\mathrm{Pb}-$ Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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| DESCRIPTION: | SC-74A | PAGE 1 OF 1 |

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1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 419A-01 OBSOLETE. NEW STANDARD 419A-02.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

| DIM | INCHES |  | MILLIMETERS |  |
| :---: | :---: | :---: | :---: | :---: |
|  | MIN | MAX | MIN | MAX |
| A | 0.071 | 0.087 | 1.80 | 2.20 |
| B | 0.045 | 0.053 | 1.15 | 1.35 |
| C | 0.031 | 0.043 | 0.80 | 1.10 |
| D | 0.004 | 0.012 | 0.10 |  |
| G | 0.026 BSC |  | 0.65 |  |


(Note: Microdot may be in either location)
*This information is generic. Please refer to device data sheet for actual part marking. $\mathrm{Pb}-F r e e$ indicator, " G " or microdot " $\mathrm{=}$ ", may or may not be present. Some products may not follow the Generic Marking.

```
```

STYLE 1:

```
```

STYLE 1:
STYLE 1:
STYLE 1:
2. EMITTER
2. EMITTER
3. BASE
3. BASE
4. COLLECTOR
4. COLLECTOR
5. COLLECTOR

```
```

        5. COLLECTOR
    ```
```

```
STYLE 2:
    PIN 1. ANODE
    2. EMITTER
    STYLE 3
```

STYLE 6:
PIN 1. EMITTER 2
2. BASE 2
3. EMITTER 1
4. COLLECTOR
5. COLLECTOR 2/BASE

STYLE 7:
PIN 1. BASE
2. EMITTER
3. BASE
4. COLLECTOR
5. COLLECTOR

STYLE 3
PIN 1. ANODE
2. N/C
3. ANODE 2
4. CATHODE 2
5. CATHODE

## STYLE 8

PIN 1. CATHODE
2. COLLECTOR
3. $\mathrm{N} / \mathrm{C}$
4. BASE
5. EMITTER

SOLDER FOOTPRINT


STYLE 4:
PIN 1. SOURCE 1
2. DRAIN $1 / 2$
3. SOURCE 1
4. GATE 1
5. GATE 2

STYLE 9:
PIN 1. ANODE
2. CATHODE
3. ANODE
4. ANODE
5. ANODE

## STYLE 5:

PIN 1. CATHODE
2. COMMON ANODE
3. CATHODE 2
4. CATHODE 3
5. CATHODE 4

Note: Please refer to datasheet for style callout. If style type is not called out in the datasheet refer to the device datasheet pinout or pin assignment.

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| ---: | :--- | :--- | :--- |
| DESCRIPTION: | SC-88A (SC-70-5/SOT-353) | PAGE 1 OF 1 |

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TSOP-5
CASE 483
ISSUE N
DATE 12 AUG 2020
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