

## SNx4HCT573 3 ステート出力、オクタール・トランスペアレント D タイプ・ラッチ

### 1 特長

- 4.5V ~ 5.5V の動作電源電圧範囲
- バス・ラインを直接、または最大 15 の LSTTL 負荷を駆動する大電流 3 ステート出力
- 低消費電力、最大  $I_{CC}$  80 $\mu$ A
- $t_{pd} = 21$ ns (標準値)
- 5V で  $\pm 6$ mA の出力駆動能力
- 低い入力電流：最大 1 $\mu$ A
- 入力は TTL 電圧互換
- バス配線に適したピン配置

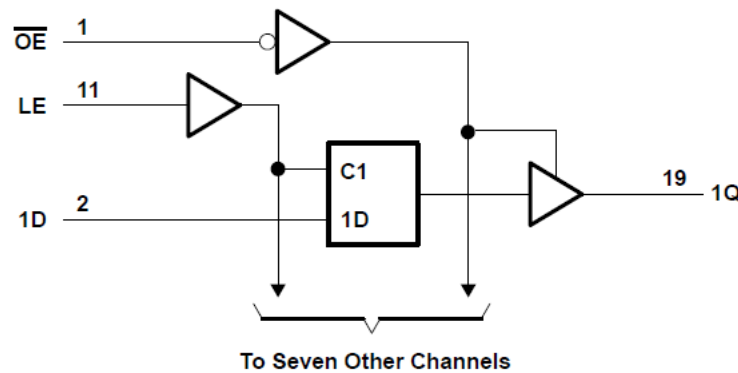
### 2 概要

これらのオクタール・トランスペアレント D タイプ・ラッチは、大きな容量性負荷または比較的低いインピーダンスの負荷の駆動用に設計された 3 ステート出力を備えています。'HCT573 デバイスは、バッファ・レジスタ、I/O ポート、双方向バス・ドライバ、作業レジスタの実装に特に適しています。

#### 製品情報

| 部品番号         | パッケージ <sup>(1)</sup> | 本体サイズ (公称)       |
|--------------|----------------------|------------------|
| SN74HCT573DW | SOIC (20)            | 12.80mm × 7.50mm |
| SN74HCT573DB | SSOP (20)            | 7.20mm × 5.30mm  |
| SN74HCT573N  | PDIP (20)            | 25.40mm × 6.35mm |
| SN74HCT573NS | SO (20)              | 15.00mm × 5.30mm |
| SN74HCT573PW | TSSOP (20)           | 6.50mm × 4.40mm  |

(1) 利用可能なパッケージについては、このデータシートの末尾にある注文情報を参照してください。



機能ブロック図



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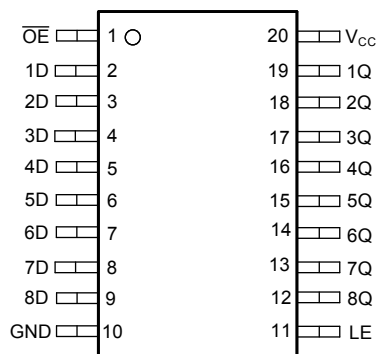
### 3 Revision History

資料番号末尾の英字は改訂を表しています。その改訂履歴は英語版に準じています。

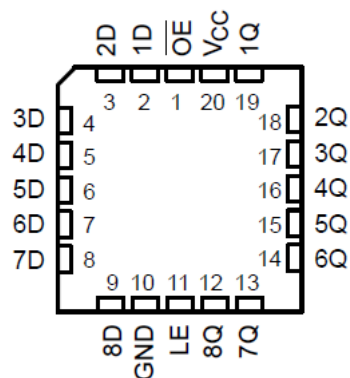
| <b>Changes from Revision F (February 2022) to Revision G (July 2022)</b>                                                                                                             | <b>Page</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| • Junction-to-ambient thermal resistance values increased. DW was 58 is now 109.1, DB was 70 is now 122.7, N was 69 is now 84.6, NS was 60 is now 113.4, PW was 83 is now 131.8..... | <b>4</b>    |

| <b>Changes from Revision E (July 2003) to Revision F (February 2022)</b> | <b>Page</b> |
|--------------------------------------------------------------------------|-------------|
| • 最新のデータシート規格を反映するように、文書全体の採番、書式設定、表、図、相互参照を更新.....                      | <b>1</b>    |

## 4 Pin Configuration and Functions



**J, W, DB, DW, N, NS, or PW package**  
**20-Pin CDIP, CFP, SSOP, SOIC, PDIP, SO, or TSSOP**  
**Top View**



**FK package**  
**20-Pin LCCC**  
**Top View**

## 5 Specifications

### 5.1 Absolute Maximum Ratings

over operating free-air temperature range (unless otherwise noted)<sup>(1)</sup>

|           |                                            | MIN                                  | MAX | UNIT        |
|-----------|--------------------------------------------|--------------------------------------|-----|-------------|
| $V_{CC}$  | Supply voltage range                       | -0.5                                 | 7   | V           |
| $I_{IK}$  | Input clamp current <sup>(2)</sup>         | $(V_I < 0 \text{ or } V_I > V_{CC})$ |     | $\pm 20$ mA |
| $I_{OK}$  | Output clamp current <sup>(2)</sup>        | $(V_O < 0 \text{ or } V_O > V_{CC})$ |     | $\pm 20$ mA |
| $I_O$     | Continuous output current                  | $(V_O = 0 \text{ to } V_{CC})$       |     | $\pm 35$ mA |
|           | Continuous current through $V_{CC}$ or GND |                                      |     | $\pm 70$ mA |
| $T_J$     | Junction temperature                       |                                      |     | 150 °C      |
| $T_{stg}$ | Storage temperature                        |                                      |     | -65 150 °C  |

- (1) Stresses beyond those listed under *absolute maximum ratings* may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated under *recommended operating conditions* is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.
- (2) The input and output voltage ratings may be exceeded if the input and output current ratings are observed.

### 5.2 Recommended Operating Conditions<sup>(1)</sup>

|          |                                 |                                            | SN54HCT573 <sup>(2)</sup> |     |          | SN74HCT573 |     |          | UNIT |
|----------|---------------------------------|--------------------------------------------|---------------------------|-----|----------|------------|-----|----------|------|
|          |                                 |                                            | MIN                       | NOM | MAX      | MIN        | NOM | MAX      |      |
| $V_{CC}$ | Supply voltage                  |                                            | 4.5                       | 5   | 5.5      | 4.5        | 5   | 5.5      | V    |
| $V_{IH}$ | High-level input voltage        | $V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$ | 2                         |     |          | 2          |     |          | V    |
| $V_{IL}$ | Low-level input voltage         | $V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$ |                           |     | 0.8      |            |     | 0.8      | V    |
| $V_I$    | Input voltage                   |                                            | 0                         |     | $V_{CC}$ | 0          |     | $V_{CC}$ | V    |
| $V_O$    | Output voltage                  |                                            | 0                         |     | $V_{CC}$ | 0          |     | $V_{CC}$ | V    |
| $t_t$    | Input transition rise/fall time |                                            |                           |     | 500      |            |     | 500      | ns   |
| $T_A$    | Operating free-air temperature  |                                            | -55                       |     | 125      | -40        |     | 85       | °C   |

- (1) All unused inputs of the device must be held at  $V_{CC}$  or GND to ensure proper device operation. Refer to the TI application report Implications of Slow or Floating SMOS Inputs, literature number [SCBA004](#).
- (2) SN54HCT573 is in product preview.

### 5.3 Thermal Information

| THERMAL METRIC        |                                                       | DW (SOIC) | DB (SSOP) | N (PDIP) | NS (SO) | PW (TSSOP) | UNIT |
|-----------------------|-------------------------------------------------------|-----------|-----------|----------|---------|------------|------|
|                       |                                                       | 20 PINS   | 20 PINS   | 20 PINS  | 20 PINS | 20 PINS    |      |
| $R_{\theta JA}$       | Junction-to-ambient thermal resistance <sup>(1)</sup> | 109.1     | 122.7     | 84.6     | 113.4   | 131.8      | °C/W |
| $R_{\theta JC (top)}$ | Junction-to-case (top) thermal resistance             | 76        | 81.6      | 72.5     | 78.6    | 72.2       | °C/W |
| $R_{\theta JB}$       | Junction-to-board thermal resistance                  | 77.6      | 77.5      | 65.3     | 78.4    | 82.8       | °C/W |
| $\Psi_{JT}$           | Junction-to-top characterization parameter            | 51.5      | 46.1      | 55.3     | 47.1    | 21.5       | °C/W |
| $\Psi_{JB}$           | Junction-to-board characterization parameter          | 77.1      | 77.1      | 65.2     | 78.1    | 82.4       | °C/W |
| $R_{\theta JC (bot)}$ | Junction-to-case (bottom) thermal resistance          | N/A       | N/A       | N/A      | N/A     | N/A        | °C/W |

- (1) For more information about traditional and new thermal metrics, see the [Semiconductor and IC package thermal metrics](#) application report.

## 5.4 Electrical Characteristics

over recommended operating free-air temperature range (unless otherwise noted)

| PARAMETER                       | TEST CONDITIONS <sup>(1)</sup>                                    | V <sub>CC</sub> (V) | T <sub>A</sub> = 25°C |       |      | SN54HCT573 <sup>(3)</sup> |       | SN74HCT573 |       | UNIT |
|---------------------------------|-------------------------------------------------------------------|---------------------|-----------------------|-------|------|---------------------------|-------|------------|-------|------|
|                                 |                                                                   |                     | MIN                   | TYP   | MAX  | MIN                       | MAX   | MIN        | MAX   |      |
| V <sub>OH</sub>                 | I <sub>OH</sub> = – 20 µA                                         | 4.5                 | 4.4                   | 4.499 |      | 4.4                       |       | 4.4        |       | V    |
|                                 | I <sub>OH</sub> = – 6 mA                                          |                     | 3.98                  | 4.3   |      | 3.7                       |       | 3.84       |       |      |
| V <sub>OL</sub>                 | I <sub>OL</sub> = 20 µA                                           | 4.5                 |                       | 0.001 | 0.1  |                           | 0.1   |            | 0.1   | V    |
|                                 | I <sub>OL</sub> = 6 mA                                            |                     |                       | 0.17  | 0.26 |                           | 0.4   |            | 0.33  |      |
| I <sub>I</sub>                  | V <sub>I</sub> = V <sub>CC</sub> or 0                             | 5.5                 |                       | ±0.1  | ±100 |                           | ±1000 |            | ±1000 | nA   |
| I <sub>OZ</sub>                 | V <sub>O</sub> = V <sub>CC</sub> or 0                             | 5.5                 |                       | ±0.01 | ±0.5 |                           | ±10   |            | ±5    | µA   |
| I <sub>CC</sub>                 | V <sub>I</sub> = V <sub>CC</sub> or 0. I <sub>O</sub> = 0         | 5.5                 |                       |       | 8    |                           | 160   |            | 80    | µA   |
| ΔI <sub>CC</sub> <sup>(2)</sup> | One input at 0.5 V or 2.4 V, Other inputs at 0 or V <sub>CC</sub> | 5.5                 |                       | 1.4   | 2.4  |                           | 3     |            | 2.9   | mA   |
| C <sub>i</sub>                  |                                                                   | 4.5 to 5.5          |                       | 3     | 10   |                           | 10    |            | 10    | pF   |

(1) V<sub>I</sub> = V<sub>IH</sub> or V<sub>IL</sub>, unless otherwise noted.

(2) This is the increase in supply current for each input that is at one of the specified TTL voltage levels, rather than 0 V or V<sub>CC</sub>.

(3) SN54HCT573 is in product preview.

## 5.5 Timing Requirements

|                 |                             | V <sub>CC</sub> | T <sub>A</sub> = 25°C |     | SN54HCT573 <sup>(1)</sup> |     | SN74HCT573 |     | UNIT |
|-----------------|-----------------------------|-----------------|-----------------------|-----|---------------------------|-----|------------|-----|------|
|                 |                             |                 | MIN                   | MAX | MIN                       | MAX | MIN        | MAX |      |
| t <sub>W</sub>  | Pulse duration, LE high     | 4.5             | 20                    |     | 30                        |     | 25         |     | ns   |
|                 |                             | 5.5             | 17                    |     | 27                        |     | 23         |     |      |
| t <sub>su</sub> | Setup time, data before LE↓ | 4.5             | 10                    |     | 15                        |     | 13         |     | ns   |
|                 |                             | 5.5             | 9                     |     | 14                        |     | 12         |     |      |
| t <sub>h</sub>  | Hold time, data after LE↓   | 4.5             | 5                     |     | 5                         |     | 5          |     | ns   |
|                 |                             | 5.5             | 5                     |     | 5                         |     | 5          |     |      |

(1) SN54HCT573 is in product preview.

## 5.6 Switching Characteristics

C<sub>L</sub> = 50 pF. See Figure 6

| PARAMETER        | FROM (INPUT) | TO (OUTPUT) | V <sub>CC</sub> (V) | T <sub>A</sub> = 25°C |     |     | SN54HCT573 <sup>(1)</sup> |     | SN74HCT573 |     |    |
|------------------|--------------|-------------|---------------------|-----------------------|-----|-----|---------------------------|-----|------------|-----|----|
|                  |              |             |                     | MIN                   | TYP | MAX | MIN                       | MAX | MIN        | MAX |    |
| t <sub>pd</sub>  | D            | Q           | 4.5                 |                       | 25  | 35  |                           | 53  |            | 44  | ns |
|                  |              |             | 5.5                 |                       | 21  | 32  |                           | 48  |            | 40  |    |
|                  | LE           | Any Q       | 4.5                 |                       | 28  | 35  |                           | 53  |            | 44  |    |
|                  |              |             | 5.5                 |                       | 25  | 32  |                           | 48  |            | 40  |    |
| t <sub>en</sub>  | OE           | Any Q       | 4.5                 |                       | 26  | 35  |                           | 53  |            | 44  | ns |
|                  |              |             | 5.5                 |                       | 23  | 32  |                           | 48  |            | 40  |    |
| t <sub>dis</sub> | OE           | Any Q       | 4.5                 |                       | 23  | 35  |                           | 53  |            | 44  | ns |
|                  |              |             | 5.5                 |                       | 22  | 32  |                           | 48  |            | 40  |    |
| t <sub>t</sub>   |              | Any Q       | 4.5                 |                       | 9   | 12  |                           | 18  |            | 15  | ns |
|                  |              |             | 5.5                 |                       | 9   | 11  |                           | 16  |            | 14  |    |

(1) SN54HCT573 is in product preview.

## 5.6 Switching Characteristics

$C_L = 150$  pF. See [Figure 6](#)

| PARAM<br>ETER | FROM (INPUT)    | TO (OUTPUT) | $V_{CC}$ (V) | $T_A = 25^\circ\text{C}$ |     |     | SN54HCT573 <sup>(1)</sup> |     | SN74HCT573 |     |    |
|---------------|-----------------|-------------|--------------|--------------------------|-----|-----|---------------------------|-----|------------|-----|----|
|               |                 |             |              | MIN                      | TYP | MAX | MIN                       | MAX | MIN        | MAX |    |
| $t_{pd}$      | D               | Q           | 4.5          |                          | 32  | 52  |                           | 79  |            | 65  | ns |
|               |                 |             | 5.5          |                          | 27  | 47  |                           | 71  |            | 59  |    |
|               | LE              | Any Q       | 4.5          |                          | 38  | 52  |                           | 79  |            | 65  |    |
|               |                 |             | 5.5          |                          | 36  | 47  |                           | 71  |            | 59  |    |
| $t_{en}$      | $\overline{OE}$ | Any Q       | 4.5          |                          | 33  | 52  |                           | 79  |            | 65  | ns |
|               |                 |             | 5.5          |                          | 28  | 47  |                           | 71  |            | 59  |    |
| $t_t$         |                 | Any Q       | 4.5          |                          | 18  | 42  |                           | 63  |            | 53  | ns |
|               |                 |             | 5.5          |                          | 16  | 38  |                           | 57  |            | 48  |    |

(1) SN54HCT573 is in product preview.

## 5.7 Operating Characteristics

$T_A = 25^\circ\text{C}$

|          |                                         | Test Conditions | TYP | UNIT |
|----------|-----------------------------------------|-----------------|-----|------|
| $C_{pd}$ | Power dissipation capacitance per latch | No load         | 50  | pF   |

## 6 Parameter Measurement Information

$t_{pd}$  is the maximum between  $t_{PLH}$  and  $t_{PHL}$

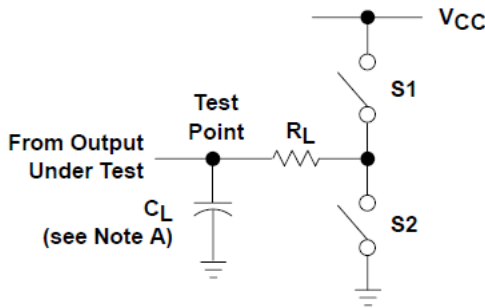


图 6-1. Load Circuit

| PARAMETER         |           | $R_L$        | $C_L$           | S1     | S2     |
|-------------------|-----------|--------------|-----------------|--------|--------|
| $t_{en}$          | $t_{PZH}$ | 1 k $\Omega$ | 50 pF or 150 pF | Open   | Closed |
|                   | $t_{PZL}$ |              |                 | Closed | Open   |
| $t_{dis}$         | $t_{PHZ}$ | 1 k $\Omega$ | 50 pF           | Open   | Closed |
|                   | $t_{PLZ}$ |              |                 | Closed | Open   |
| $t_{pd}$ or $t_t$ |           | —            | 50 pF or 150 pF | Open   | Open   |

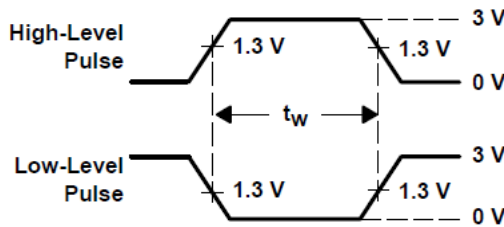


图 6-2. Voltage Waveforms Pulse Durations

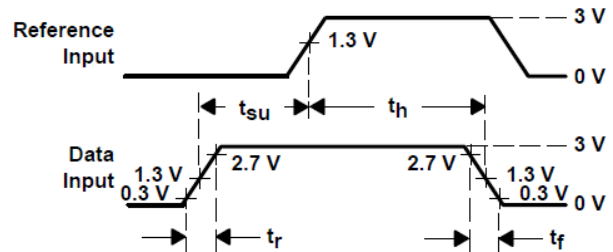


图 6-3. Voltage Waveforms Setup and Hold and Input Rise and Fall Times

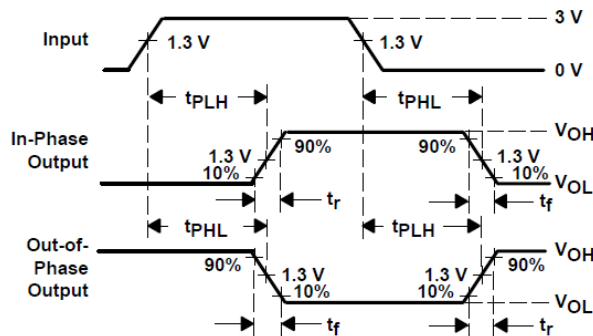


图 6-4. Voltage Waveforms Propagation Delay and Output Rise and Fall Times

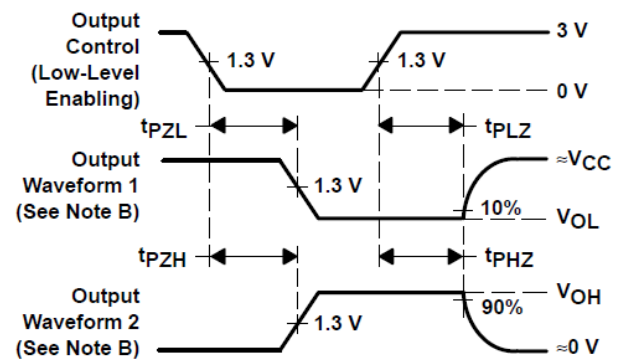


图 6-5. Voltage Waveforms Enable and Diable Times for 3-State Outputs

A.  $C_L$  includes probe and test-fixture capacitance.

B. Waveform 1 is for an output with internal conditions such that the output is low except when disabled by the output control.

Waveform 2 is for an output with internal conditions such that the output is high except when disabled by the output control.

C. Phase relationships between waveforms were chosen arbitrarily. All input pulses are supplied by generators having the following characteristics:  $PRR \leq 1$  MHz,  $Z_O = 50 \Omega$ ,  $t_r = 6$  ns,  $t_f = 6$  ns.

D. The outputs are measured one at a time with one input transition per measurement.

E.  $t_{PLZ}$  and  $t_{PHZ}$  are the same as  $t_{dis}$ .

F.  $t_{PZL}$  and  $t_{PZH}$  are the same as  $t_{en}$ .

## 7 Detailed Description

### 7.1 Overview

These octal transparent D-type latches feature 3-state outputs designed specifically for driving highly capacitive or relatively low-impedance loads. The 'HCT573 devices are particularly suitable for implementing buffer registers, I/O ports, bidirectional bus drivers, and working registers.

While the latch-enable (LE) input is high, the Q outputs respond to the data (D) inputs. When LE is low, the outputs are latched to retain the data that was set up at the D inputs.

A buffered output-enable ( $\overline{OE}$ ) input can be used to place the eight outputs in either a normal logic state (high or low logic levels) or the high-impedance state. In the high-impedance state, the outputs neither load nor drive the bus lines significantly. The high-impedance state and increased drive provide the capability to drive bus lines without interface or pullup components.

$\overline{OE}$  does not affect the internal operations of the latches. Old data can be retained or new data can be entered while the outputs are in the high-impedance state.

### 7.2 Functional Block Diagram

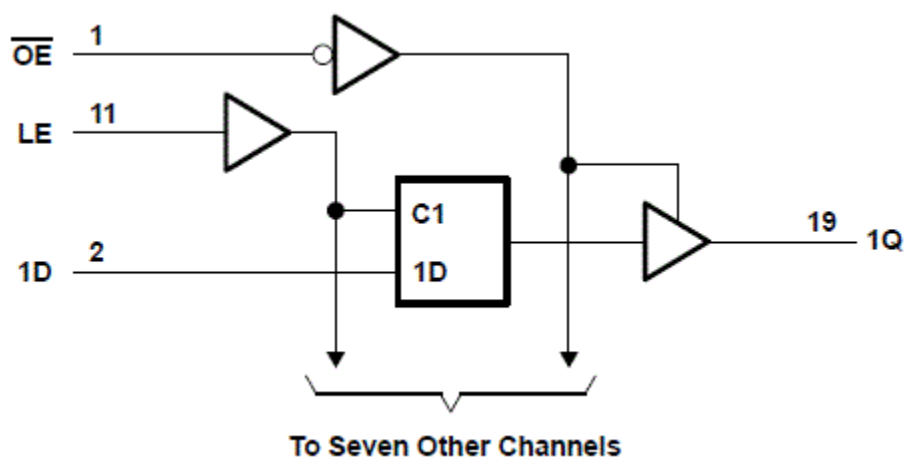


FIG 7-1. Functional Block Diagram

### 7.3 Device Functional Modes

Function Table  
(Each Flip-Flop)

| INPUTS          |    |   | OUTPUT<br>Q |
|-----------------|----|---|-------------|
| $\overline{OE}$ | LE | D |             |
| L               | H  | H | H           |
| L               | H  | L | L           |
| L               | L  | X | $Q_0$       |
| H               | X  | X | Z           |



## 8 Power Supply Recommendations

The power supply can be any voltage between the minimum and maximum supply voltage rating located in the *Recommended Operating Conditions*. Each  $V_{CC}$  terminal should have a good bypass capacitor to prevent power disturbance. A 0.1- $\mu$ F capacitor is recommended for this device. It is acceptable to parallel multiple bypass caps to reject different frequencies of noise. The 0.1- $\mu$ F and 1- $\mu$ F capacitors are commonly used in parallel. The bypass capacitor should be installed as close to the power terminal as possible for best results.

## 9 Layout

### 9.1 Layout Guidelines

When using multiple-input and multiple-channel logic devices inputs must not ever be left floating. In many cases, functions or parts of functions of digital logic devices are unused; for example, when only two inputs of a triple-input AND gate are used or only 3 of the 4 buffer gates are used. Such unused input pins must not be left unconnected because the undefined voltages at the outside connections result in undefined operational states. All unused inputs of digital logic devices must be connected to a logic high or logic low voltage, as defined by the input voltage specifications, to prevent them from floating. The logic level that must be applied to any particular unused input depends on the function of the device. Generally, the inputs are tied to GND or  $V_{CC}$ , whichever makes more sense for the logic function or is more convenient.

## 10 Device and Documentation Support

TI offers an extensive line of development tools. Tools and software to evaluate the performance of the device, generate code, and develop solutions are listed below.

### 10.1 Documentation Support

#### 10.1.1 Related Documentation

### 10.2 Receiving Notification of Documentation Updates

To receive notification of documentation updates, navigate to the device product folder on [ti.com](https://www.ti.com). Click on *Subscribe to updates* to register and receive a weekly digest of any product information that has changed. For change details, review the revision history included in any revised document.

### 10.3 サポート・リソース

TI E2E™ [サポート・フォーラム](#)は、エンジニアが検証済みの回答と設計に関するヒントをエキスパートから迅速かつ直接得ることができる場所です。既存の回答を検索したり、独自の質問をしたりすることで、設計に必要な支援を迅速に得ることができます。

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### 10.4 Trademarks

TI E2E™ is a trademark of Texas Instruments.

すべての商標は、それぞれの所有者に帰属します。

### 10.5 Electrostatic Discharge Caution



This integrated circuit can be damaged by ESD. Texas Instruments recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage.

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

### 10.6 Glossary

[TI Glossary](#) This glossary lists and explains terms, acronyms, and definitions.

## 11 Mechanical, Packaging, and Orderable Information

The following pages include mechanical, packaging, and orderable information. This information is the most current data available for the designated devices. This data is subject to change without notice and revision of this document. For browser-based versions of this data sheet, refer to the left-hand navigation.

## PACKAGING INFORMATION

| Orderable part number         | Status<br>(1) | Material type<br>(2) | Package   Pins  | Package qty   Carrier | RoHS<br>(3) | Lead finish/<br>Ball material<br>(4) | MSL rating/<br>Peak reflow<br>(5) | Op temp (°C) | Part marking<br>(6) |
|-------------------------------|---------------|----------------------|-----------------|-----------------------|-------------|--------------------------------------|-----------------------------------|--------------|---------------------|
| <a href="#">SN74HCT573DBR</a> | Active        | Production           | SSOP (DB)   20  | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HT573               |
| SN74HCT573DBR.A               | Active        | Production           | SSOP (DB)   20  | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HT573               |
| SN74HCT573DBRG4               | Active        | Production           | SSOP (DB)   20  | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HT573               |
| <a href="#">SN74HCT573DW</a>  | Obsolete      | Production           | SOIC (DW)   20  | -                     | -           | Call TI                              | Call TI                           | -40 to 85    | HCT573              |
| <a href="#">SN74HCT573DWR</a> | Active        | Production           | SOIC (DW)   20  | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HCT573              |
| SN74HCT573DWR.A               | Active        | Production           | SOIC (DW)   20  | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HCT573              |
| SN74HCT573DWRG4               | Active        | Production           | SOIC (DW)   20  | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HCT573              |
| <a href="#">SN74HCT573N</a>   | Active        | Production           | PDIP (N)   20   | 20   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -40 to 85    | SN74HCT573N         |
| SN74HCT573N.A                 | Active        | Production           | PDIP (N)   20   | 20   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -40 to 85    | SN74HCT573N         |
| <a href="#">SN74HCT573NSR</a> | Active        | Production           | SOP (NS)   20   | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HCT573              |
| SN74HCT573NSR.A               | Active        | Production           | SOP (NS)   20   | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HCT573              |
| <a href="#">SN74HCT573PW</a>  | Obsolete      | Production           | TSSOP (PW)   20 | -                     | -           | Call TI                              | Call TI                           | -40 to 85    | HT573               |
| <a href="#">SN74HCT573PWR</a> | Active        | Production           | TSSOP (PW)   20 | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HT573               |
| SN74HCT573PWR.A               | Active        | Production           | TSSOP (PW)   20 | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HT573               |

<sup>(1)</sup> **Status:** For more details on status, see our [product life cycle](#).

<sup>(2)</sup> **Material type:** When designated, preproduction parts are prototypes/experimental devices, and are not yet approved or released for full production. Testing and final process, including without limitation quality assurance, reliability performance testing, and/or process qualification, may not yet be complete, and this item is subject to further changes or possible discontinuation. If available for ordering, purchases will be subject to an additional waiver at checkout, and are intended for early internal evaluation purposes only. These items are sold without warranties of any kind.

<sup>(3)</sup> **RoHS values:** Yes, No, RoHS Exempt. See the [TI RoHS Statement](#) for additional information and value definition.

<sup>(4)</sup> **Lead finish/Ball material:** Parts may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead finish/Ball material values may wrap to two lines if the finish value exceeds the maximum column width.

<sup>(5)</sup> **MSL rating/Peak reflow:** The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will be used to mount the part to the printed circuit board.

<sup>(6)</sup> **Part marking:** There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

Multiple part markings will be inside parentheses. Only one part marking contained in parentheses and separated by a "~" will appear on a part. If a line is indented then it is a continuation of the previous line and the two combined represent the entire part marking for that device.

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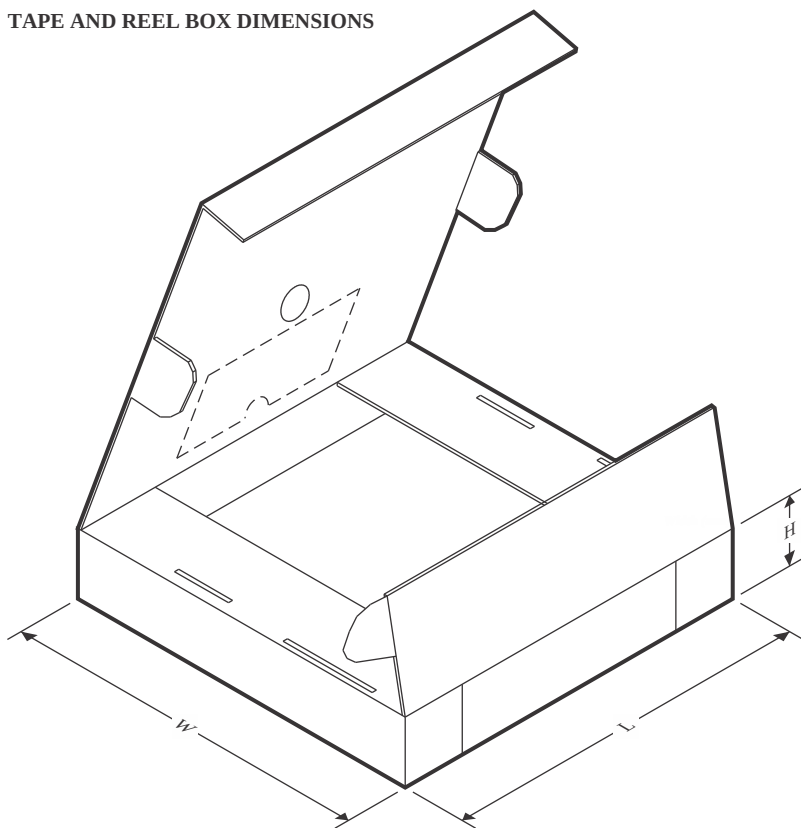
## TAPE AND REEL INFORMATION



\*All dimensions are nominal

| Device        | Package Type | Package Drawing | Pins | SPQ  | Reel Diameter (mm) | Reel Width W1 (mm) | A0 (mm) | B0 (mm) | K0 (mm) | P1 (mm) | W (mm) | Pin1 Quadrant |
|---------------|--------------|-----------------|------|------|--------------------|--------------------|---------|---------|---------|---------|--------|---------------|
| SN74HCT573DBR | SSOP         | DB              | 20   | 2000 | 330.0              | 16.4               | 8.2     | 7.5     | 2.5     | 12.0    | 16.0   | Q1            |
| SN74HCT573DWR | SOIC         | DW              | 20   | 2000 | 330.0              | 24.4               | 10.9    | 13.3    | 2.7     | 12.0    | 24.0   | Q1            |
| SN74HCT573NSR | SOP          | NS              | 20   | 2000 | 330.0              | 24.4               | 8.4     | 13.0    | 2.5     | 12.0    | 24.0   | Q1            |
| SN74HCT573PWR | TSSOP        | PW              | 20   | 2000 | 330.0              | 16.4               | 6.95    | 7.0     | 1.4     | 8.0     | 16.0   | Q1            |

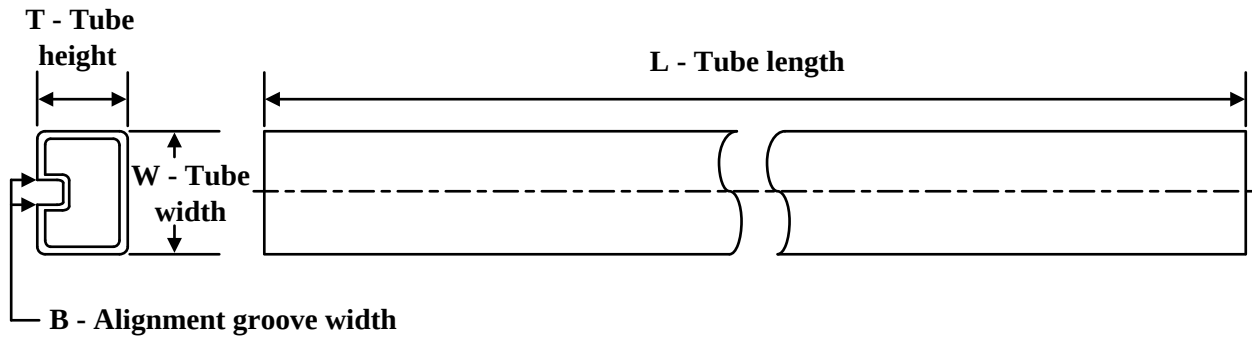
## TAPE AND REEL BOX DIMENSIONS



\*All dimensions are nominal

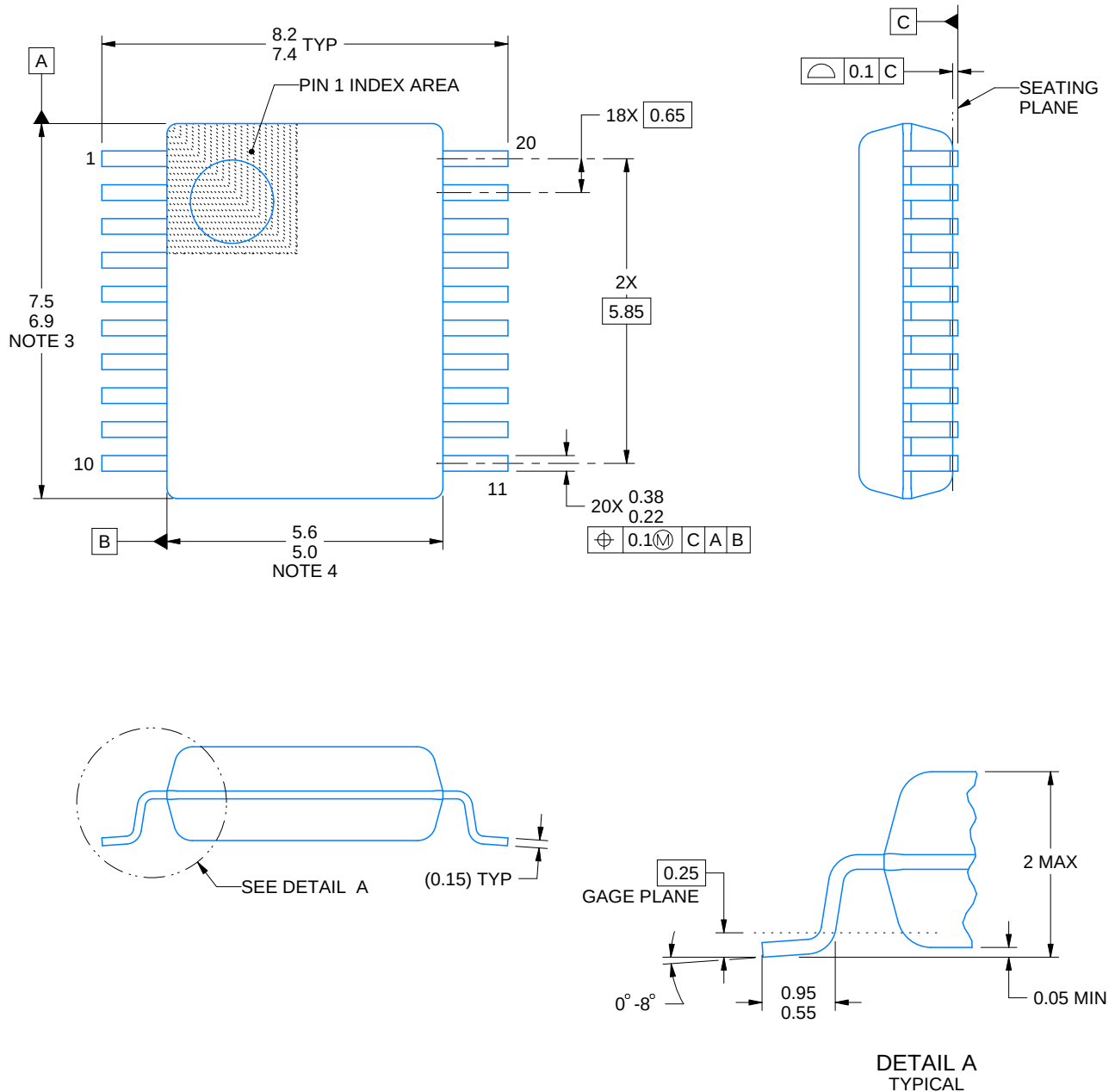
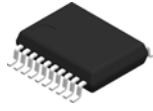
| Device        | Package Type | Package Drawing | Pins | SPQ  | Length (mm) | Width (mm) | Height (mm) |
|---------------|--------------|-----------------|------|------|-------------|------------|-------------|
| SN74HCT573DBR | SSOP         | DB              | 20   | 2000 | 353.0       | 353.0      | 32.0        |
| SN74HCT573DWR | SOIC         | DW              | 20   | 2000 | 356.0       | 356.0      | 45.0        |
| SN74HCT573NSR | SOP          | NS              | 20   | 2000 | 356.0       | 356.0      | 45.0        |
| SN74HCT573PWR | TSSOP        | PW              | 20   | 2000 | 353.0       | 353.0      | 32.0        |

## TUBE



\*All dimensions are nominal

| Device        | Package Name | Package Type | Pins | SPQ | L (mm) | W (mm) | T (μm) | B (mm) |
|---------------|--------------|--------------|------|-----|--------|--------|--------|--------|
| SN74HCT573N   | N            | PDIP         | 20   | 20  | 506    | 13.97  | 11230  | 4.32   |
| SN74HCT573N.A | N            | PDIP         | 20   | 20  | 506    | 13.97  | 11230  | 4.32   |



4214851/B 08/2019

## NOTES:

1. All linear dimensions are in millimeters. Any dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. This dimension does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.15 mm per side.
4. This dimension does not include interlead flash. Interlead flash shall not exceed 0.25 mm per side.
5. Reference JEDEC registration MO-150.

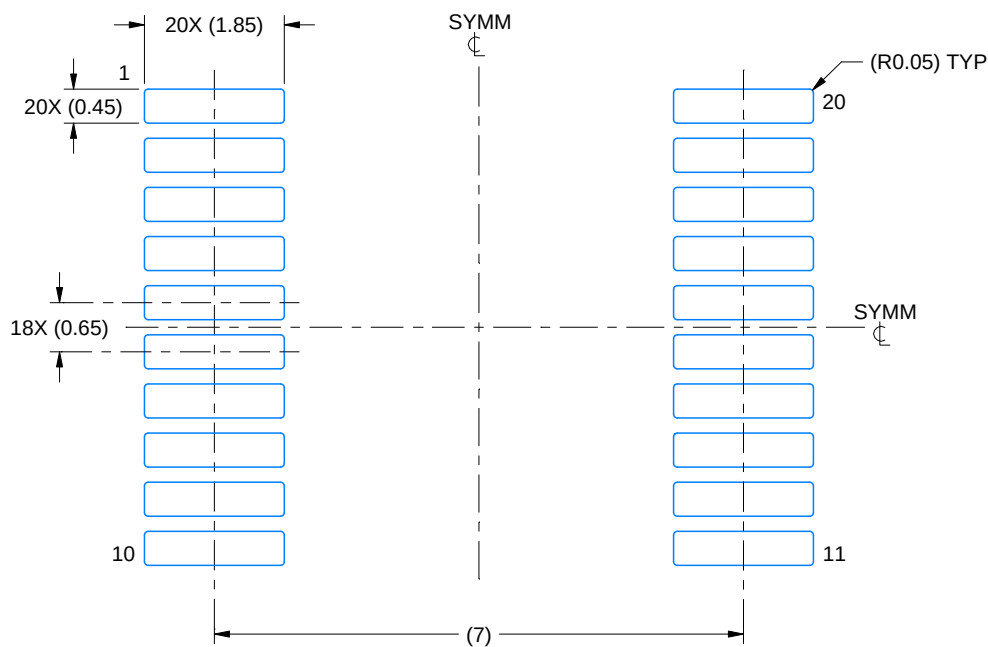


# EXAMPLE BOARD LAYOUT

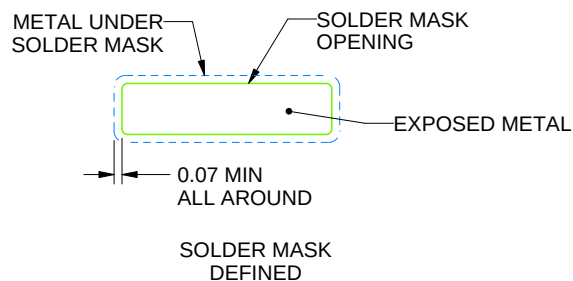
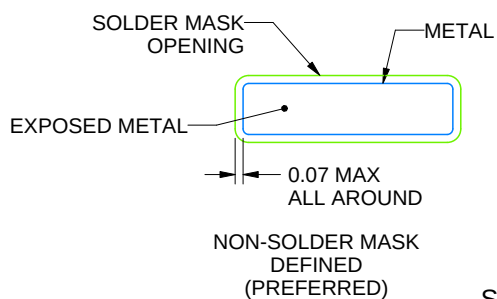
DB0020A

SSOP - 2 mm max height

SMALL OUTLINE PACKAGE



LAND PATTERN EXAMPLE  
EXPOSED METAL SHOWN  
SCALE: 10X



SOLDER MASK DETAILS

4214851/B 08/2019

NOTES: (continued)

6. Publication IPC-7351 may have alternate designs.

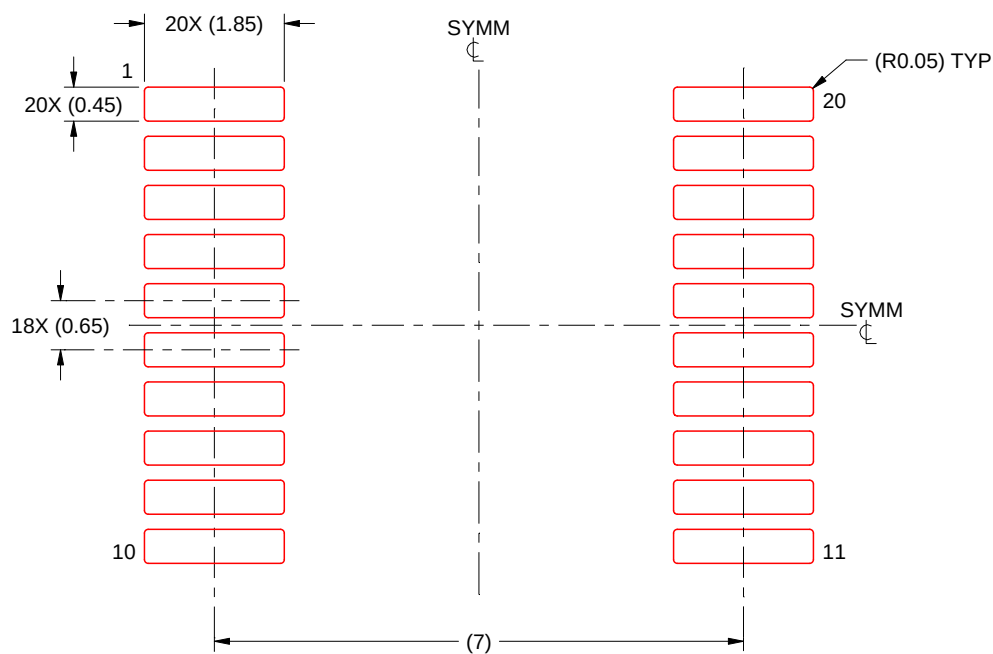
7. Solder mask tolerances between and around signal pads can vary based on board fabrication site.

## EXAMPLE STENCIL DESIGN

DB0020A

SSOP - 2 mm max height

SMALL OUTLINE PACKAGE



SOLDER PASTE EXAMPLE  
BASED ON 0.125 mm THICK STENCIL  
SCALE: 10X

4214851/B 08/2019

NOTES: (continued)

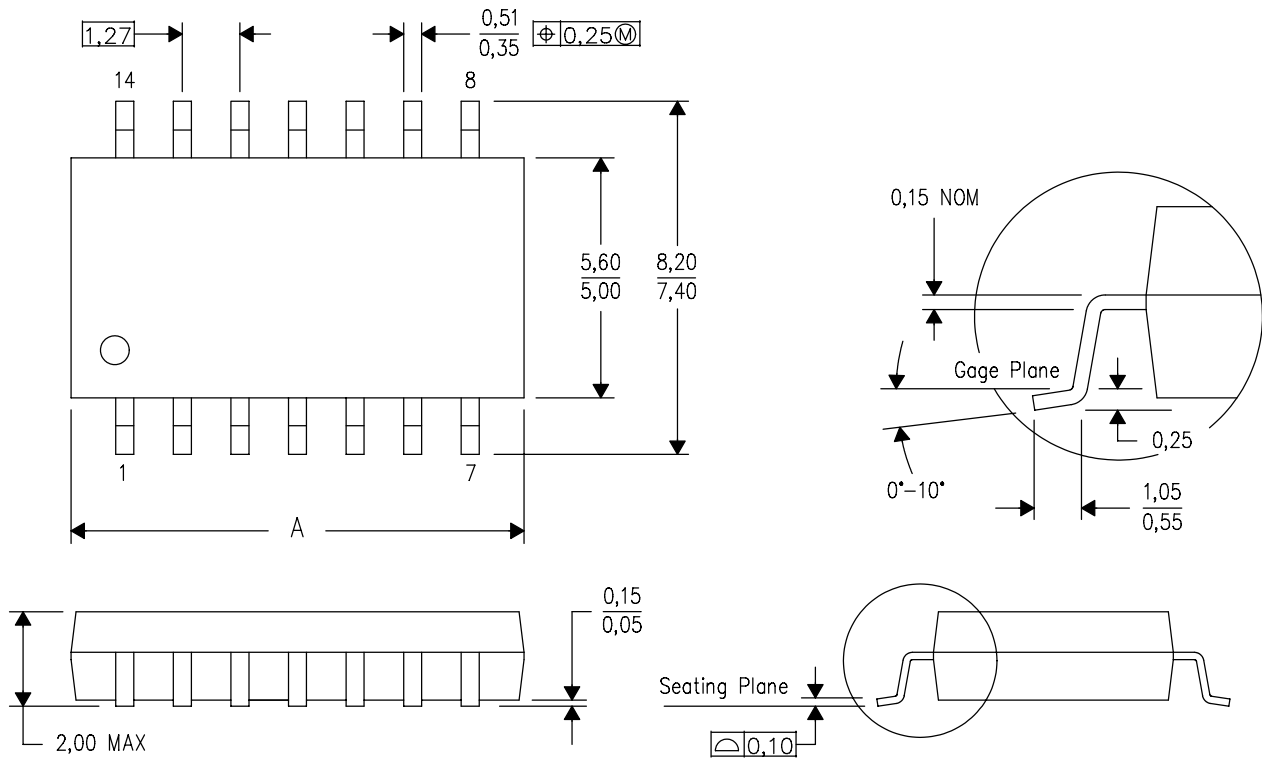
8. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.
9. Board assembly site may have different recommendations for stencil design.

# MECHANICAL DATA

NS (R-PDSO-G\*\*)

PLASTIC SMALL-OUTLINE PACKAGE

14-PINS SHOWN



| DIM \ PINS ** | 14    | 16    | 20    | 24    |
|---------------|-------|-------|-------|-------|
| A MAX         | 10,50 | 10,50 | 12,90 | 15,30 |
| A MIN         | 9,90  | 9,90  | 12,30 | 14,70 |

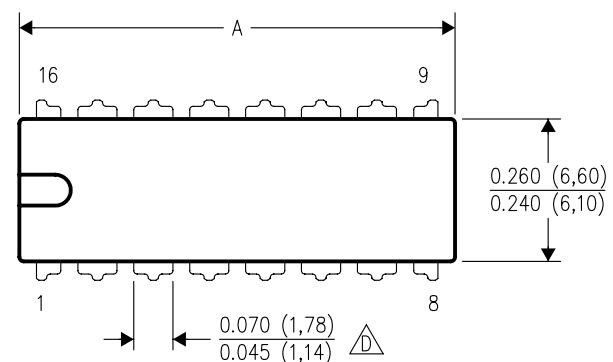
4040062/C 03/03

- NOTES:
- A. All linear dimensions are in millimeters.
  - B. This drawing is subject to change without notice.
  - C. Body dimensions do not include mold flash or protrusion, not to exceed 0,15.

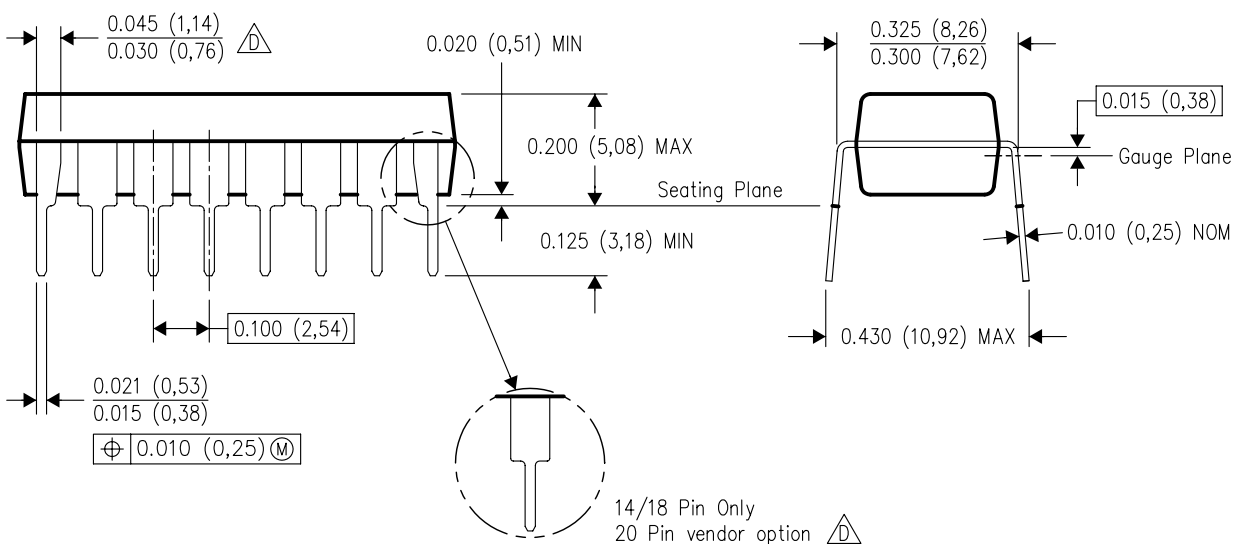
N (R-PDIP-T\*\*)

16 PINS SHOWN

## PLASTIC DUAL-IN-LINE PACKAGE



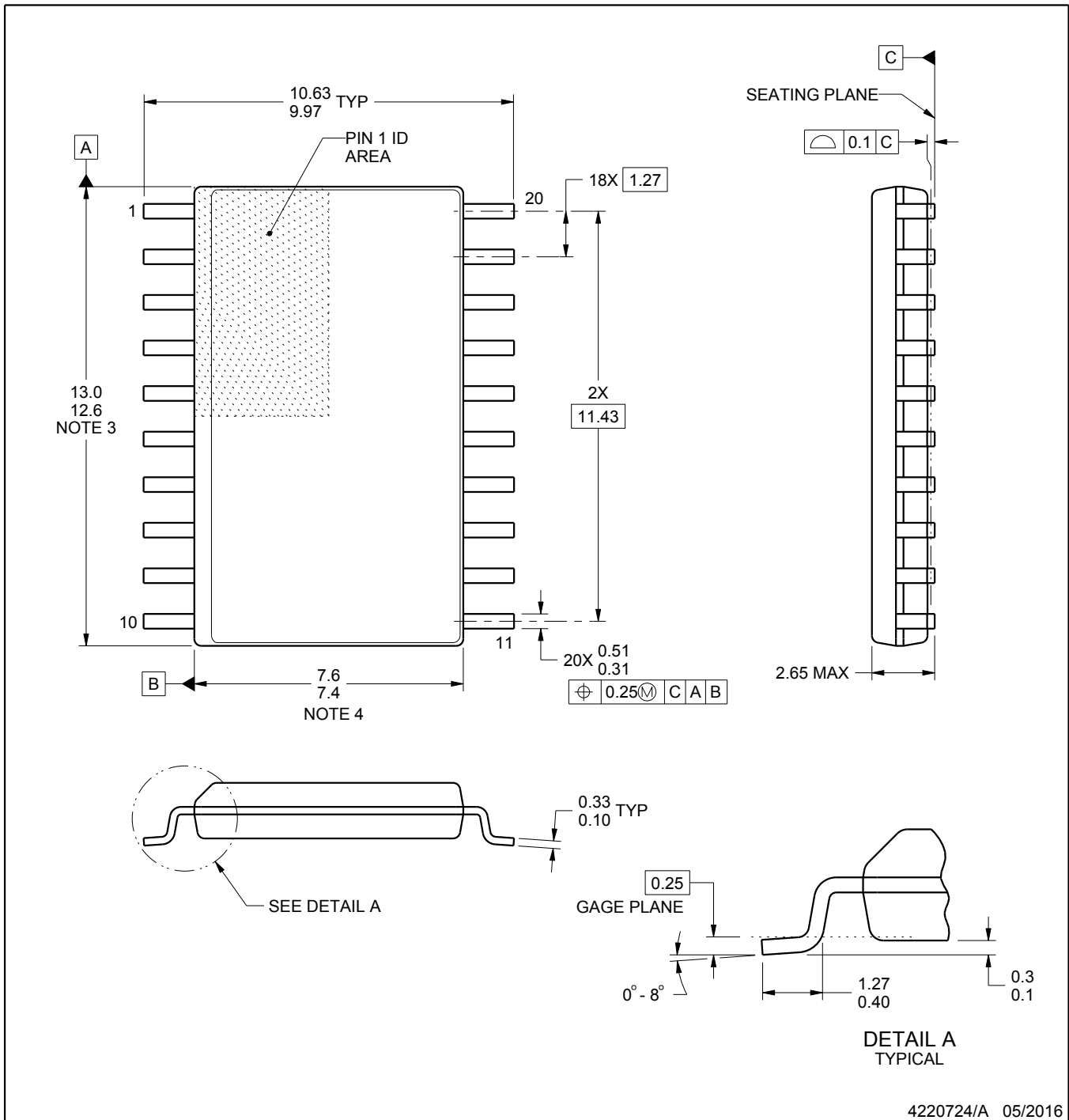
| PINS **<br>DIM      | 14               | 16               | 18               | 20               |
|---------------------|------------------|------------------|------------------|------------------|
| A MAX               | 0.775<br>(19,69) | 0.775<br>(19,69) | 0.920<br>(23,37) | 1.060<br>(26,92) |
| A MIN               | 0.745<br>(18,92) | 0.745<br>(18,92) | 0.850<br>(21,59) | 0.940<br>(23,88) |
| MS-001<br>VARIATION | AA               | BB               | AC               | AD               |



4040049/E 12/2002

NOTES:

- A. All linear dimensions are in inches (millimeters).  
B. This drawing is subject to change without notice.
-  Falls within JEDEC MS-001, except 18 and 20 pin minimum body length (Dim A).  
 The 20 pin end lead shoulder width is a vendor option, either half or full width.



4220724/A 05/2016

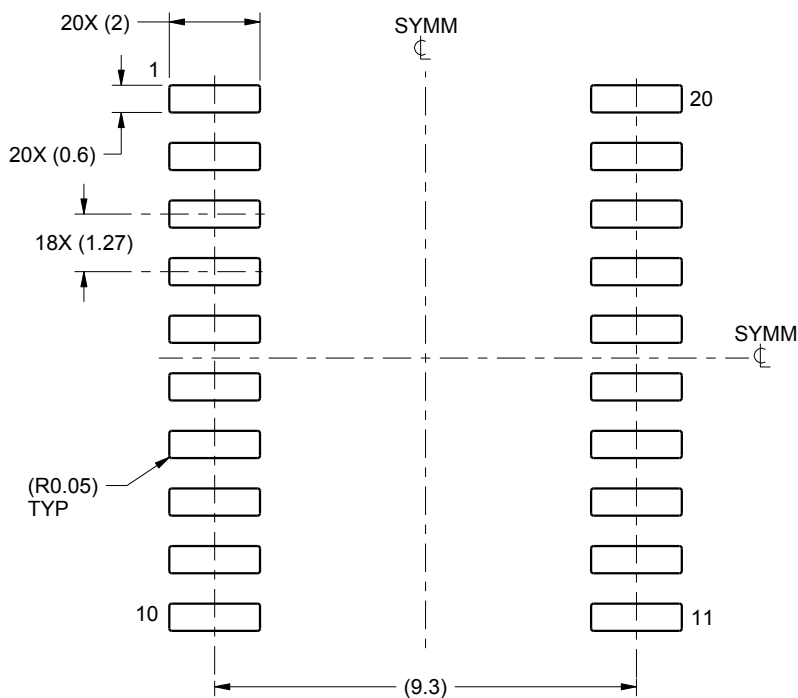
## NOTES:

1. All linear dimensions are in millimeters. Dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. This dimension does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.15 mm per side.
4. This dimension does not include interlead flash. Interlead flash shall not exceed 0.43 mm per side.
5. Reference JEDEC registration MS-013.

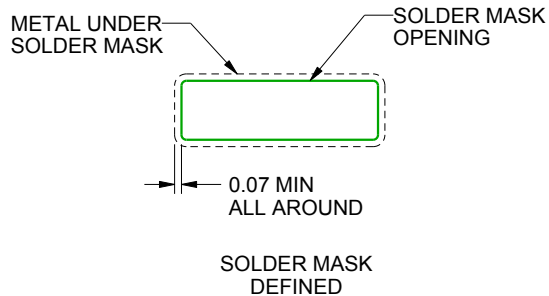
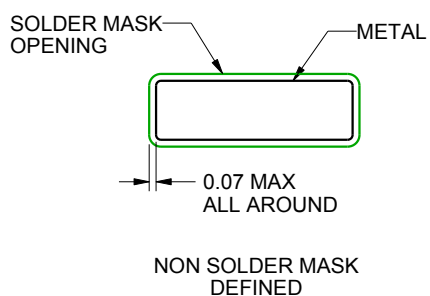
**DW0020A**

### SOIC - 2.65 mm max height

SOIC



LAND PATTERN EXAMPLE  
SCALE:6X



## SOLDER MASK DETAILS

4220724/A 05/2016

NOTES: (continued)

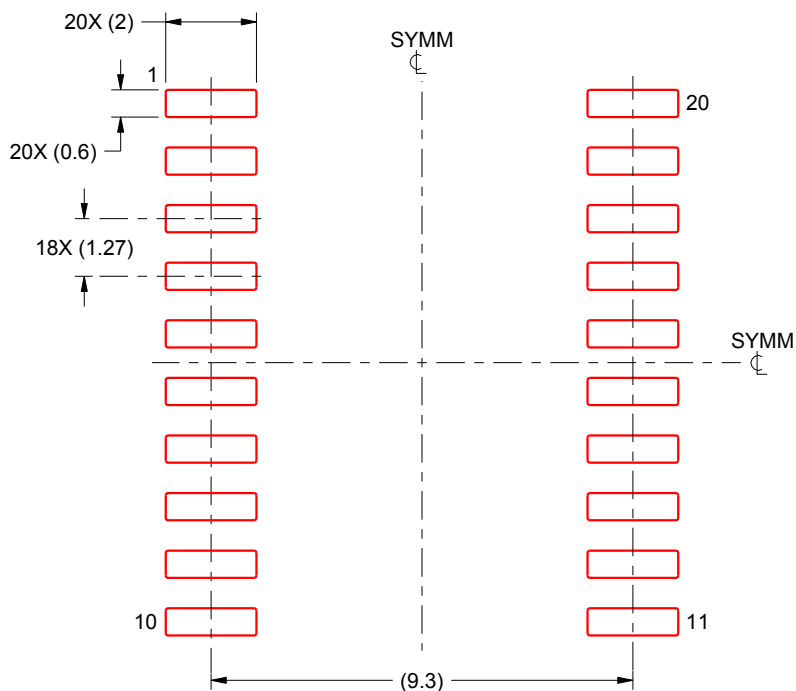
6. Publication IPC-7351 may have alternate designs.  
7. Solder mask tolerances between and around signal pads can vary based on board fabrication site.

## EXAMPLE STENCIL DESIGN

DW0020A

SOIC - 2.65 mm max height

SOIC

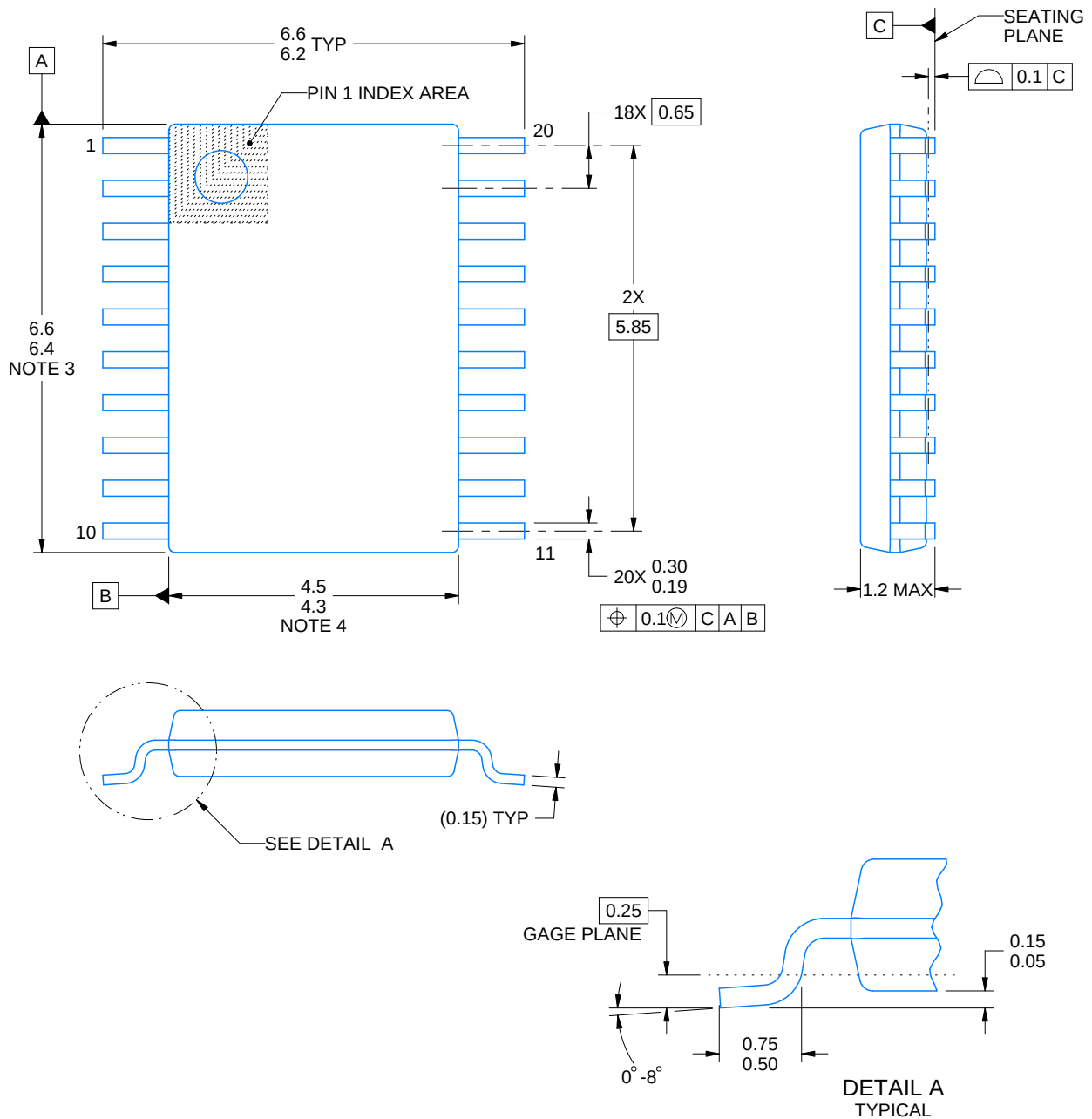
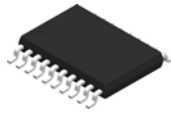


SOLDER PASTE EXAMPLE  
BASED ON 0.125 mm THICK STENCIL  
SCALE:6X

4220724/A 05/2016

NOTES: (continued)

8. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.
9. Board assembly site may have different recommendations for stencil design.



4220206/A 02/2017

## NOTES:

1. All linear dimensions are in millimeters. Any dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. This dimension does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.15 mm per side.
4. This dimension does not include interlead flash. Interlead flash shall not exceed 0.25 mm per side.
5. Reference JEDEC registration MO-153.

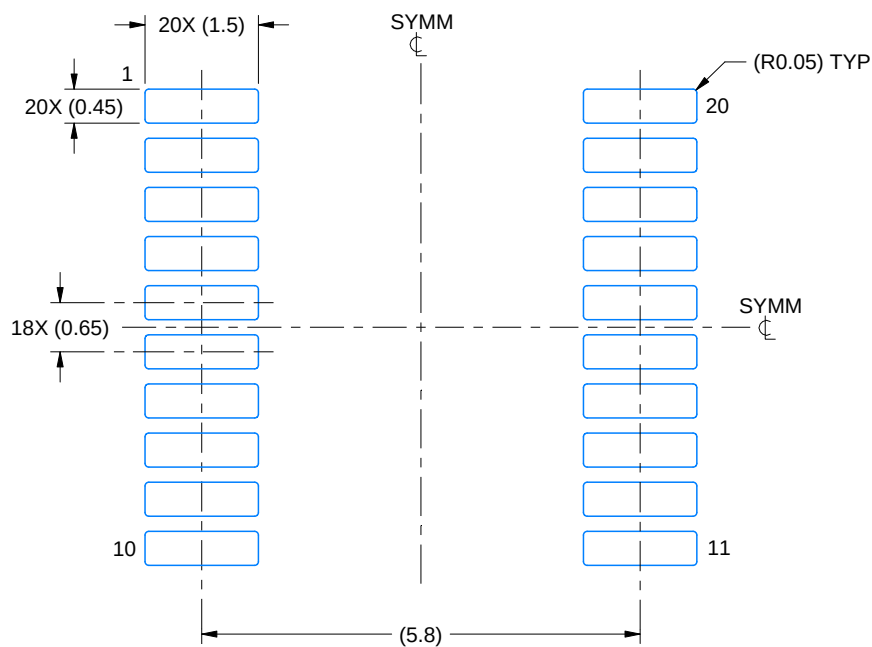


# EXAMPLE BOARD LAYOUT

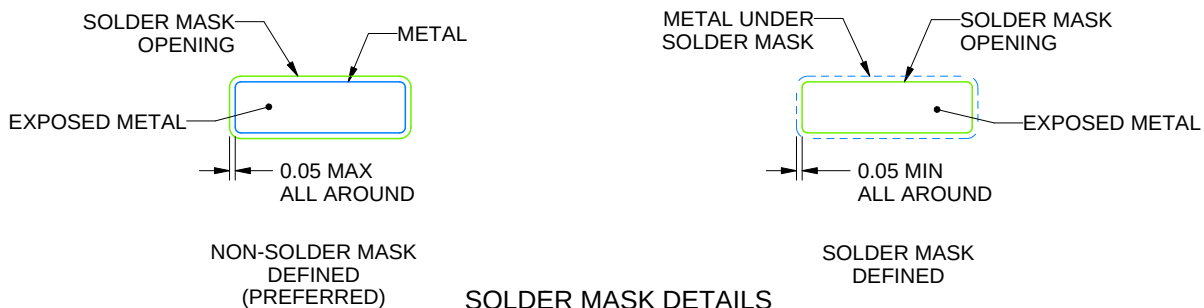
PW0020A

TSSOP - 1.2 mm max height

SMALL OUTLINE PACKAGE



LAND PATTERN EXAMPLE  
EXPOSED METAL SHOWN  
SCALE: 10X



4220206/A 02/2017

NOTES: (continued)

6. Publication IPC-7351 may have alternate designs.

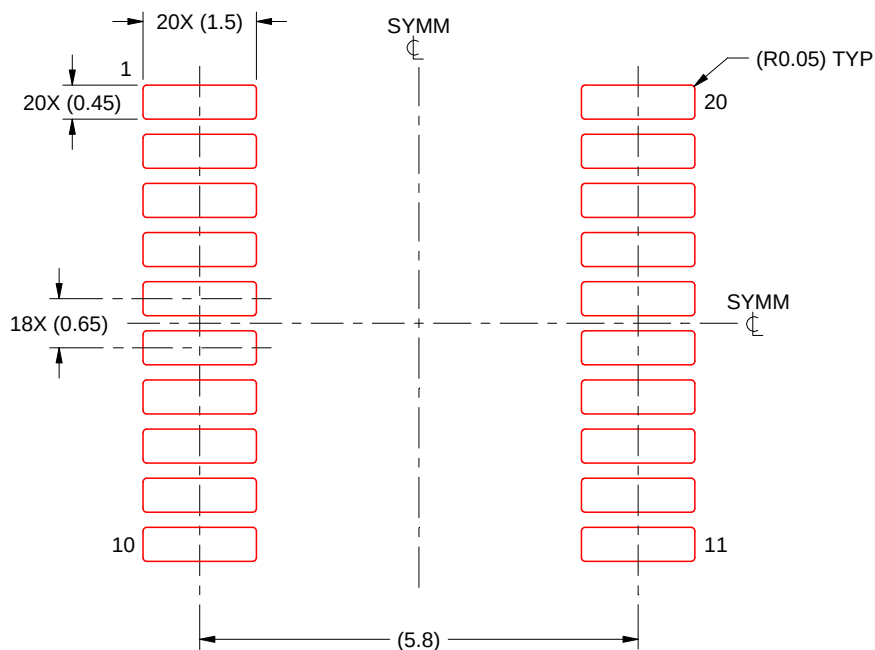
7. Solder mask tolerances between and around signal pads can vary based on board fabrication site.

## EXAMPLE STENCIL DESIGN

PW0020A

TSSOP - 1.2 mm max height

SMALL OUTLINE PACKAGE



SOLDER PASTE EXAMPLE  
BASED ON 0.125 mm THICK STENCIL  
SCALE: 10X

4220206/A 02/2017

NOTES: (continued)

8. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.
9. Board assembly site may have different recommendations for stencil design.

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最終更新日：2025 年 10 月