

# SNx4HC573A 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

- 広い動作電圧範囲: 2V~6V
- 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
- 低い消費電力:  $I_{CC} = 80\mu A$  (最大値)
- $t_{pd} = 21ns$  (標準値)
- 5V で  $\pm 6mA$  の出力駆動能力
- 低い入力電流:  $1\mu A$  (最大値)
- バス配線に適したピン配置

## 2 アプリケーション

- バッファ・レジスタ
- 双方向バス・ドライバ
- 作業レジスタ

## 3 概要

SNx4HC573A は、オクタール・トランスペアレント D タイプ・ラッチで、大きい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。

特に、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適しています。

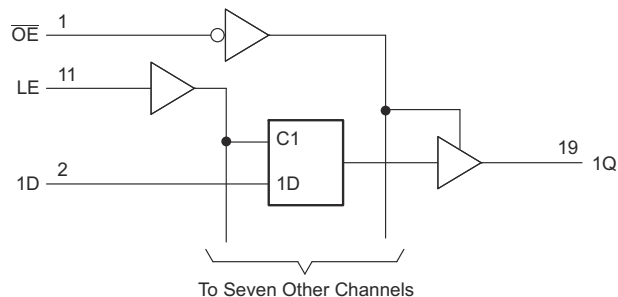
ラッチ・イネーブル (LE) 入力が HIGH のとき、Q 出力はデータ (D) 入力に従います。

LE が LOW のとき、出力はラッチされて、設定されたデータを保持します。

### 製品情報<sup>(1)</sup>

| 部品番号         | パッケージ      | 本体サイズ (公称)       |
|--------------|------------|------------------|
| SN54HC573AJ  | CDIP (20)  | 26.92mm × 6.92mm |
| SN54HC573AW  | CFP (20)   | 13.72mm × 6.92mm |
| SN54HC573AFK | LCCC (20)  | 8.89mm × 8.89mm  |
| SN74HC573AN  | PDIP (20)  | 25.40mm × 6.35mm |
| SN74HC573ADW | SOIC (20)  | 12.80mm × 7.50mm |
| SN74HC573ADB | SSOP (20)  | 7.20mm × 5.30mm  |
| SN74HC573APW | TSSOP (20) | 5.00mm × 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。



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### 論理図 (正論理)



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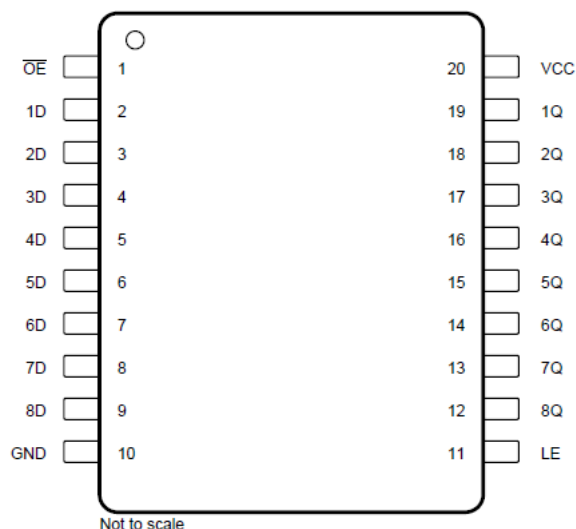
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## 4 Revision History

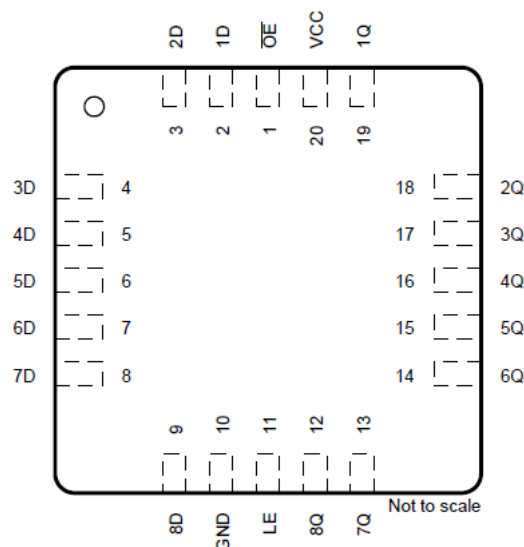
資料番号末尾の英字は改訂を表しています。その改訂履歴は英語版に準じています。

| <b>Changes from Revision E (September 2003) to Revision F (October 2016)</b>                                                                                                                                                                                                                                                                                                                                                             | <b>Page</b>                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <ul style="list-style-type: none"> <li>「ESD 定格」表、「機能説明」セクション、「デバイスの機能モード」セクション、「アプリケーションと実装」セクション、「電源に関する推奨事項」セクション、「レイアウト」セクション、「デバイスおよびドキュメントのサポート」セクション、「メカニカル、パッケージ、および注文情報」セクションを追加。.....</li> <li>「注文情報」表を削除 (データシートの末尾にある POA を参照).....</li> <li>Changed Package thermal impedance, <math>R_{\theta JA}</math>, values from 70 to 92.5 (DB), from 58 to 78.3 (DW), from 69 to 49.1 (N), and from 83 to 101.1 (PW).....</li> </ul> | <p>1</p> <p>1</p> <p>5</p> |
| <b>Changes from Revision F (October 2016) to Revision G (April 2022)</b>                                                                                                                                                                                                                                                                                                                                                                 | <b>Page</b>                |
| <ul style="list-style-type: none"> <li>Updated ESD ratings table to modern TI standards.....</li> <li>Changed Package thermal impedance, <math>R_{\theta JA}</math>, values from 92.5 to 122.7 (DB), from 78.3 to 109.1 (DW), from 49.1 to 84.6 (N), and from 101.1 to 131.8 (PW).....</li> </ul>                                                                                                                                        | <p>4</p> <p>5</p>          |

## 5 Pin Configuration and Functions



DB, DW, J, N, PW, or W Packages  
20-Pin SSOP, SOIC, CDIP, PDIP, TSSOP, or CFP  
Top View



FK Package  
20-Pin LCCC  
Top View

## Pin Functions

| PIN |                 | I/O <sup>(1)</sup> | DESCRIPTION        |
|-----|-----------------|--------------------|--------------------|
| NO. | NAME            |                    |                    |
| 1   | $\overline{OE}$ | I                  | Output enable      |
| 2   | 1D              | I                  | 1D input           |
| 3   | 2D              | I                  | 2D input           |
| 4   | 3D              | I                  | 3D input           |
| 5   | 4D              | I                  | 4D input           |
| 6   | 5D              | I                  | 5D input           |
| 7   | 6D              | I                  | 6D input           |
| 8   | 7D              | I                  | 7D input           |
| 9   | 8D              | I                  | 8D input           |
| 10  | GND             | —                  | Ground             |
| 11  | LE              | I                  | Latch enable input |
| 12  | 8Q              | O                  | 8Q output          |
| 13  | 7Q              | O                  | 7Q output          |
| 14  | 6Q              | O                  | 6Q output          |
| 15  | 5Q              | O                  | 5Q output          |
| 16  | 4Q              | O                  | 4Q output          |
| 17  | 3Q              | O                  | 3Q output          |
| 18  | 2Q              | O                  | 2Q output          |
| 19  | 1Q              | O                  | 1Q output          |
| 20  | V <sub>CC</sub> | —                  | Power pin          |

(1) Signal Types: I = Input, O = Output, I/O = Input or Output.

## 6 Specifications

### 6.1 Absolute Maximum Ratings

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

|                  |                                                   | MIN                                                    | MAX | UNIT      |
|------------------|---------------------------------------------------|--------------------------------------------------------|-----|-----------|
| V <sub>CC</sub>  | Supply voltage                                    | −0.5                                                   | 7   | V         |
| I <sub>IK</sub>  | Input clamp current <sup>(2)</sup>                | V <sub>I</sub> < 0 or V <sub>I</sub> > V <sub>CC</sub> |     | ±20<br>mA |
| I <sub>OK</sub>  | Output clamp current <sup>(2)</sup>               | V <sub>O</sub> < 0 or V <sub>O</sub> > V <sub>CC</sub> |     | ±20<br>mA |
| I <sub>O</sub>   | Continuous output current                         | V <sub>O</sub> = 0 to V <sub>CC</sub>                  |     | ±35<br>mA |
|                  | Continuous current through V <sub>CC</sub> or GND |                                                        |     | ±70<br>mA |
| T <sub>J</sub>   | Junction temperature                              |                                                        |     | 150<br>°C |
| T <sub>stg</sub> | Storage temperature                               | −65                                                    |     | 150<br>°C |

(1) Stresses beyond those listed under *Absolute Maximum Ratings* may cause permanent damage to the device. These are stress ratings only, which do not imply functional operation of the device at these or any other conditions beyond those indicated under *Recommended Operating Conditions*. 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.

### 6.2 ESD Ratings

|                    |                         | VALUE                                                                 | UNIT  |
|--------------------|-------------------------|-----------------------------------------------------------------------|-------|
| V <sub>(ESD)</sub> | Electrostatic discharge | Human-body model (HBM), per ANSI/ESDA/JEDEC JS-001 <sup>(1)</sup>     | ±3500 |
|                    |                         | Charged device model (CDM), per ANSI/ESDA/JEDEC JS-002 <sup>(2)</sup> | ±1000 |

(1) JEDEC document JEP155 states that 500-V HBM allows safe manufacturing with a standard ESD control process.

(2) JEDEC document JEP157 states that 250-V CDM allows safe manufacturing with a standard ESD control process.

### 6.3 Recommended Operating Conditions

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

|                 |                                       | MIN                     | NOM  | MAX             | UNIT |
|-----------------|---------------------------------------|-------------------------|------|-----------------|------|
| V <sub>CC</sub> | Supply voltage                        | 2                       | 5    | 6               | V    |
| V <sub>IH</sub> | High-level input voltage              | V <sub>CC</sub> = 2 V   | 1.5  |                 | V    |
|                 |                                       | V <sub>CC</sub> = 4.5 V | 3.15 |                 |      |
|                 |                                       | V <sub>CC</sub> = 6 V   | 4.2  |                 |      |
| V <sub>IL</sub> | Low-level input voltage               | V <sub>CC</sub> = 2 V   |      | 0.5             | V    |
|                 |                                       | V <sub>CC</sub> = 4.5 V |      | 1.35            |      |
|                 |                                       | V <sub>CC</sub> = 6 V   |      | 1.8             |      |
| V <sub>I</sub>  | Input voltage                         | 0                       |      | V <sub>CC</sub> | V    |
| V <sub>O</sub>  | Output voltage                        | 0                       |      | V <sub>CC</sub> | V    |
| t <sub>i</sub>  | Input transition (rise and fall) time | V <sub>CC</sub> = 2 V   |      | 1000            | ns   |
|                 |                                       | V <sub>CC</sub> = 4.5 V |      | 500             |      |
|                 |                                       | V <sub>CC</sub> = 6 V   |      | 400             |      |
| T <sub>A</sub>  | Operating free-air temperature        | SN54HC573A              | −55  | 125             | °C   |
|                 |                                       | SN74HC573A              | −40  | 85              |      |

(1) All unused inputs of the device must be held at V<sub>CC</sub> or GND to ensure proper device operation. See the [Implications of Slow or Floating CMOS Inputs](#) application report (SCBA004).

## 6.4 Thermal Information

| THERMAL METRIC        |                                                       | SN74HC573A |           |          |            | UNIT |
|-----------------------|-------------------------------------------------------|------------|-----------|----------|------------|------|
|                       |                                                       | DW (SOIC)  | DB (SSOP) | N (PDIP) | PW (TSSOP) |      |
|                       |                                                       | 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     | 131.8      | °C/W |
| $R_{\theta JC (top)}$ | Junction-to-case (top) thermal resistance             | 76         | 81.6      | 72.5     | 72.2       | °C/W |
| $R_{\theta JB}$       | Junction-to-board thermal resistance                  | 77.6       | 77.5      | 65.3     | 82.8       | °C/W |
| $\Psi_{JT}$           | Junction-to-top characterization parameter            | 51.5       | 46.1      | 55.3     | 21.5       | °C/W |
| $\Psi_{JB}$           | Junction-to-board characterization parameter          | 77.1       | 77.1      | 65.2     | 82.4       | °C/W |
| $R_{\theta JC (bot)}$ | Junction-to-case (bottom) thermal resistance          | 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.

## 6.5 Electrical Characteristics

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

| PARAMETER       | TEST CONDITIONS                                                                  |                                                  |                         | MIN   | TYP   | MAX | UNIT |
|-----------------|----------------------------------------------------------------------------------|--------------------------------------------------|-------------------------|-------|-------|-----|------|
| V <sub>OH</sub> | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>                              | I <sub>OH</sub> = −20 μA                         | V <sub>CC</sub> = 2 V   | 1.9   | 1.998 | V   |      |
|                 |                                                                                  |                                                  | V <sub>CC</sub> = 4.5 V | 4.4   | 4.499 |     |      |
|                 |                                                                                  |                                                  | V <sub>CC</sub> = 6 V   | 5.9   | 5.999 |     |      |
|                 |                                                                                  | I <sub>OH</sub> = −6 mA, V <sub>CC</sub> = 4.5 V | T <sub>A</sub> = 25°C   | 3.98  | 4.3   |     |      |
|                 |                                                                                  |                                                  | SN54HC573A              | 3.7   |       |     |      |
|                 |                                                                                  |                                                  | SN74HC573A              | 3.84  |       |     |      |
|                 |                                                                                  | I <sub>OH</sub> = −7.8 mA, V <sub>CC</sub> = 6 V | T <sub>A</sub> = 25°C   | 5.48  | 5.8   |     |      |
|                 |                                                                                  |                                                  | SN54HC573A              | 5.2   |       |     |      |
|                 |                                                                                  |                                                  | SN74HC573A              | 5.34  |       |     |      |
| V <sub>OL</sub> | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>                              | I <sub>OL</sub> = 20 μA                          | V <sub>CC</sub> = 2 V   | 0.002 | 0.1   | V   |      |
|                 |                                                                                  |                                                  | V <sub>CC</sub> = 4.5 V | 0.001 | 0.1   |     |      |
|                 |                                                                                  |                                                  | V <sub>CC</sub> = 6 V   | 0.001 | 0.1   |     |      |
|                 |                                                                                  | I <sub>OL</sub> = 6 mA, V <sub>CC</sub> = 4.5 V  | T <sub>A</sub> = 25°C   | 0.17  | 0.26  |     |      |
|                 |                                                                                  |                                                  | SN54HC573A              | 0.4   |       |     |      |
|                 |                                                                                  |                                                  | SN74HC573A              | 0.33  |       |     |      |
|                 |                                                                                  | I <sub>OL</sub> = 7.8 mA, V <sub>CC</sub> = 6 V  | T <sub>A</sub> = 25°C   | 0.15  | 0.26  |     |      |
|                 |                                                                                  |                                                  | SN54HC573A              | 0.4   |       |     |      |
|                 |                                                                                  |                                                  | SN74HC573A              | 0.33  |       |     |      |
| I <sub>I</sub>  | V <sub>I</sub> = V <sub>CC</sub> or 0, V <sub>CC</sub> = 6 V                     | T <sub>A</sub> = 25°C                            | ±0.1                    | ±100  | nA    |     |      |
|                 |                                                                                  | SNx4HC573A                                       | ±1000                   |       |       |     |      |
| I <sub>OZ</sub> | V <sub>O</sub> = V <sub>CC</sub> or 0, V <sub>CC</sub> = 6 V                     | T <sub>A</sub> = 25°C                            | ±0.01                   | ±0.5  | μA    |     |      |
|                 |                                                                                  | SN54HC573A                                       | ±10                     |       |       |     |      |
|                 |                                                                                  | SN74HC573A                                       | ±5                      |       |       |     |      |
| I <sub>CC</sub> | V <sub>I</sub> = V <sub>CC</sub> or 0, I <sub>O</sub> = 0, V <sub>CC</sub> = 6 V | T <sub>A</sub> = 25°C                            | 8                       | μA    |       |     |      |
|                 |                                                                                  | SN54HC573A                                       | 160                     |       |       |     |      |
|                 |                                                                                  | SN74HC573A                                       | 80                      |       |       |     |      |
| C <sub>i</sub>  | V <sub>CC</sub> = 2 V to 6 V                                                     |                                                  |                         | 3     | 10    | pF  |      |

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

| PARAMETER                                        | TEST CONDITIONS                    | MIN | TYP | MAX | UNIT |
|--------------------------------------------------|------------------------------------|-----|-----|-----|------|
| $C_{pd}$ Power dissipation capacitance per latch | $T_A = 25^\circ\text{C}$ , no load |     | 50  |     | pF   |

## 6.6 Timing Requirements

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

|                                       |                         |                          | MIN | NOM | MAX | UNIT |
|---------------------------------------|-------------------------|--------------------------|-----|-----|-----|------|
| $t_w$ Pulse duration, LE high         | $V_{CC} = 2\text{ V}$   | $T_A = 25^\circ\text{C}$ | 80  |     |     | ns   |
|                                       |                         | SN54HC573A               | 120 |     |     |      |
|                                       |                         | SN74HC573A               | 100 |     |     |      |
|                                       | $V_{CC} = 4.5\text{ V}$ | $T_A = 25^\circ\text{C}$ | 16  |     |     |      |
|                                       |                         | SN54HC573A               | 24  |     |     |      |
|                                       |                         | SN74HC573A               | 20  |     |     |      |
|                                       | $V_{CC} = 6\text{ V}$   | $T_A = 25^\circ\text{C}$ | 14  |     |     |      |
|                                       |                         | SN54HC573A               | 20  |     |     |      |
|                                       |                         | SN74HC573A               | 17  |     |     |      |
| $t_{su}$ Setup time, data before LE ↓ | $V_{CC} = 2\text{ V}$   | $T_A = 25^\circ\text{C}$ | 50  |     |     | ns   |
|                                       |                         | SN54HC573A               | 75  |     |     |      |
|                                       |                         | SN74HC573A               | 63  |     |     |      |
|                                       | $V_{CC} = 4.5\text{ V}$ | $T_A = 25^\circ\text{C}$ | 10  |     |     |      |
|                                       |                         | SN54HC573A               | 15  |     |     |      |
|                                       |                         | SN74HC573A               | 13  |     |     |      |
|                                       | $V_{CC} = 6\text{ V}$   | $T_A = 25^\circ\text{C}$ | 9   |     |     |      |
|                                       |                         | SN54HC573A               | 13  |     |     |      |
|                                       |                         | SN74HC573A               | 11  |     |     |      |
| $t_h$ Hold time, data after LE ↓      | $V_{CC} = 2\text{ V}$   | $T_A = 25^\circ\text{C}$ | 20  |     |     | ns   |
|                                       |                         | SNx4HC573A               | 24  |     |     |      |
|                                       | $V_{CC} = 4.5\text{ V}$ |                          | 5   |     |     |      |
|                                       | $V_{CC} = 6\text{ V}$   |                          | 5   |     |     |      |

## 6.7 Switching Characteristics

over operating free-air temperature range (unless otherwise noted; see [7-1](#))

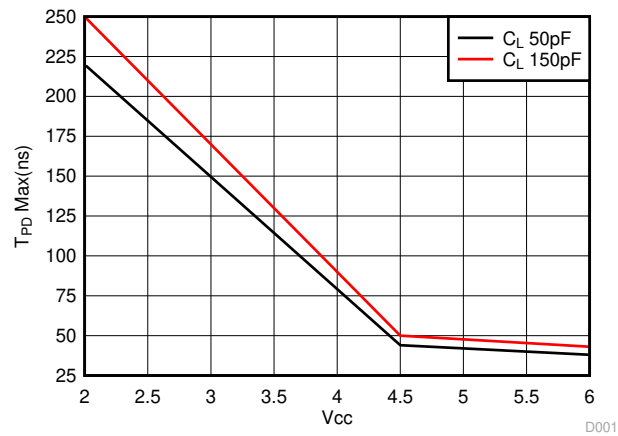
| PARAMETER | TEST CONDITIONS                                                        |                          |                          | MIN | TYP | MAX | UNIT |
|-----------|------------------------------------------------------------------------|--------------------------|--------------------------|-----|-----|-----|------|
| $t_{pd}$  | $C_L = 50 \text{ pF}$ , from D (input) to Q (output)                   | $V_{CC} = 2 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 77  | 175 | ns   |
|           |                                                                        |                          | SN54HC573A               |     |     | 265 |      |
|           |                                                                        |                          | SN74HC573A               |     |     | 220 |      |
|           |                                                                        | $V_{CC} = 4.5 \text{ V}$ | $T_A = 25^\circ\text{C}$ |     | 26  | 35  |      |
|           |                                                                        |                          | SN54HC573A               |     |     | 53  |      |
|           |                                                                        |                          | SN74HC573A               |     |     | 44  |      |
|           |                                                                        | $V_{CC} = 6 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 23  | 30  |      |
|           |                                                                        |                          | SN54HC573A               |     |     | 45  |      |
|           |                                                                        |                          | SN74HC573A               |     |     | 38  |      |
|           | $C_L = 50 \text{ pF}$ , from LE (input) to any Q (output)              | $V_{CC} = 2 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 87  | 175 |      |
|           |                                                                        |                          | SN54HC573A               |     |     | 265 |      |
|           |                                                                        |                          | SN74HC573A               |     |     | 220 |      |
|           |                                                                        | $V_{CC} = 4.5 \text{ V}$ | $T_A = 25^\circ\text{C}$ |     | 27  | 35  |      |
|           |                                                                        |                          | SN54HC573A               |     |     | 53  |      |
|           |                                                                        |                          | SN74HC573A               |     |     | 44  |      |
|           |                                                                        | $V_{CC} = 6 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 23  | 30  |      |
|           |                                                                        |                          | SN54HC573A               |     |     | 45  |      |
|           |                                                                        |                          | SN74HC573A               |     |     | 38  |      |
| $t_{en}$  | $C_L = 50 \text{ pF}$ , from $\overline{OE}$ (input) to any Q (output) | $V_{CC} = 2 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 68  | 150 | ns   |
|           |                                                                        |                          | SN54HC573A               |     |     | 225 |      |
|           |                                                                        |                          | SN74HC573A               |     |     | 190 |      |
|           |                                                                        | $V_{CC} = 4.5 \text{ V}$ | $T_A = 25^\circ\text{C}$ |     | 24  | 30  |      |
|           |                                                                        |                          | SN54HC573A               |     |     | 45  |      |
|           |                                                                        |                          | SN74HC573A               |     |     | 38  |      |
|           |                                                                        | $V_{CC} = 6 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 21  | 26  |      |
|           |                                                                        |                          | SN54HC573A               |     |     | 38  |      |
|           |                                                                        |                          | SN74HC573A               |     |     | 32  |      |
| $t_{dis}$ | $C_L = 50 \text{ pF}$ , from $\overline{OE}$ (input) to any Q (output) | $V_{CC} = 2 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 47  | 150 | ns   |
|           |                                                                        |                          | SN54HC573A               |     |     | 225 |      |
|           |                                                                        |                          | SN74HC573A               |     |     | 190 |      |
|           |                                                                        | $V_{CC} = 4.5 \text{ V}$ | $T_A = 25^\circ\text{C}$ |     | 23  | 30  |      |
|           |                                                                        |                          | SN54HC573A               |     |     | 45  |      |
|           |                                                                        |                          | SN74HC573A               |     |     | 38  |      |
|           |                                                                        | $V_{CC} = 6 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 21  | 26  |      |
|           |                                                                        |                          | SN54HC573A               |     |     | 38  |      |
|           |                                                                        |                          | SN74HC573A               |     |     | 32  |      |

over operating free-air temperature range (unless otherwise noted; see [7-1](#))

| PARAMETER | TEST CONDITIONS                                                                |                          |                          | MIN | TYP | MAX | UNIT |
|-----------|--------------------------------------------------------------------------------|--------------------------|--------------------------|-----|-----|-----|------|
| $t_t$     | $C_L = 50 \text{ pF}$ to any Q (output)                                        | $V_{CC} = 2 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 28  | 60  | ns   |
|           |                                                                                |                          | SN54HC573A               |     |     | 90  |      |
|           |                                                                                |                          | SN74HC573A               |     |     | 75  |      |
|           |                                                                                | $V_{CC} = 4.5 \text{ V}$ | $T_A = 25^\circ\text{C}$ |     | 8   | 12  |      |
|           |                                                                                |                          | SN54HC573A               |     |     | 18  |      |
|           |                                                                                |                          | SN74HC573A               |     |     | 15  |      |
|           |                                                                                | $V_{CC} = 6 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 6   | 10  |      |
|           |                                                                                |                          | SN54HC573A               |     |     | 15  |      |
|           |                                                                                |                          | SN74HC573A               |     |     | 13  |      |
| $t_{pd}$  | $C_L = 150 \text{ pF}$ , from D (input) to Q (output)                          | $V_{CC} = 2 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 95  | 200 | ns   |
|           |                                                                                |                          | SN54HC573A               |     |     | 300 |      |
|           |                                                                                |                          | SN74HC573A               |     |     | 250 |      |
|           |                                                                                | $V_{CC} = 4.5 \text{ V}$ | $T_A = 25^\circ\text{C}$ |     | 33  | 40  |      |
|           |                                                                                |                          | SN54HC573A               |     |     | 60  |      |
|           |                                                                                |                          | SN74HC573A               |     |     | 50  |      |
|           |                                                                                | $V_{CC} = 6 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 21  | 34  |      |
|           |                                                                                |                          | SN54HC573A               |     |     | 51  |      |
|           |                                                                                |                          | SN74HC573A               |     |     | 43  |      |
|           | $C_L = 150 \text{ pF}$ , from LE (input) to any Q (output)                     | $V_{CC} = 2 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 103 | 225 |      |
|           |                                                                                |                          | SN54HC573A               |     |     | 335 |      |
|           |                                                                                |                          | SN74HC573A               |     |     | 285 |      |
|           |                                                                                | $V_{CC} = 4.5 \text{ V}$ | $T_A = 25^\circ\text{C}$ |     | 33  | 45  |      |
|           |                                                                                |                          | SN54HC573A               |     |     | 67  |      |
|           |                                                                                |                          | SN74HC573A               |     |     | 57  |      |
|           |                                                                                | $V_{CC} = 6 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 29  | 40  |      |
|           |                                                                                |                          | SN54HC573A               |     |     | 60  |      |
|           |                                                                                |                          | SN74HC573A               |     |     | 50  |      |
| $t_{en}$  | $C_L = 150 \text{ pF}$ , from $\overline{\text{OE}}$ (input) to any Q (output) | $V_{CC} = 2 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 85  | 200 | ns   |
|           |                                                                                |                          | SN54HC573A               |     |     | 300 |      |
|           |                                                                                |                          | SN74HC573A               |     |     | 250 |      |
|           |                                                                                | $V_{CC} = 4.5 \text{ V}$ | $T_A = 25^\circ\text{C}$ |     | 29  | 40  |      |
|           |                                                                                |                          | SN54HC573A               |     |     | 60  |      |
|           |                                                                                |                          | SN74HC573A               |     |     | 50  |      |
|           |                                                                                | $V_{CC} = 6 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 26  | 34  |      |
|           |                                                                                |                          | SN54HC573A               |     |     | 51  |      |
|           |                                                                                |                          | SN74HC573A               |     |     | 43  |      |
| $t_t$     | $C_L = 150 \text{ pF}$ to any Q (output)                                       | $V_{CC} = 2 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 60  | 210 | ns   |
|           |                                                                                |                          | SN54HC573A               |     |     | 315 |      |
|           |                                                                                |                          | SN74HC573A               |     |     | 265 |      |
|           |                                                                                | $V_{CC} = 4.5 \text{ V}$ | $T_A = 25^\circ\text{C}$ |     | 17  | 42  |      |
|           |                                                                                |                          | SN54HC573A               |     |     | 63  |      |
|           |                                                                                |                          | SN74HC573A               |     |     | 53  |      |
|           |                                                                                | $V_{CC} = 6 \text{ V}$   | $T_A = 25^\circ\text{C}$ |     | 14  | 36  |      |
|           |                                                                                |                          | SN54HC573A               |     |     | 53  |      |
|           |                                                                                |                          | SN74HC573A               |     |     | 45  |      |

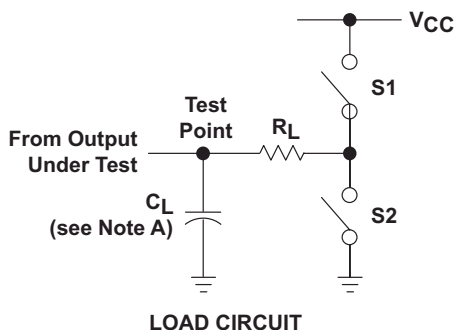


## 6.8 Typical Characteristics

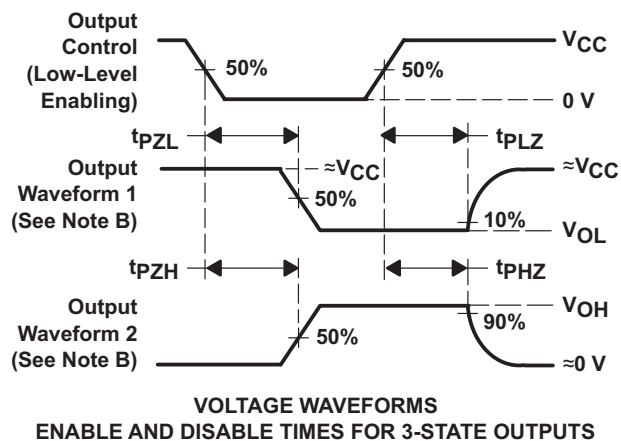
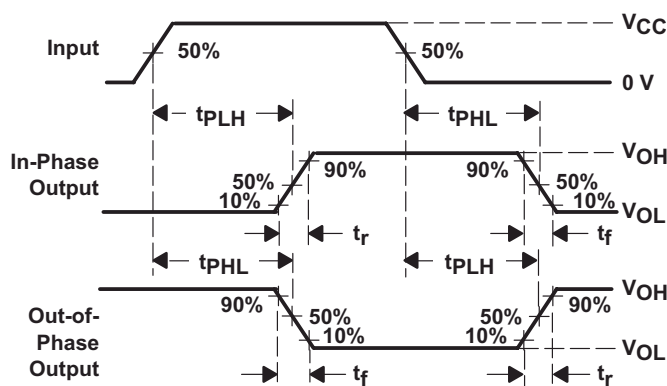
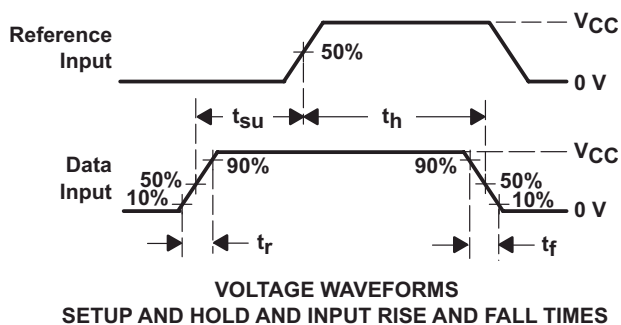
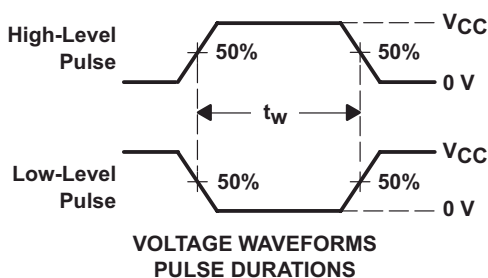


**6-1. Maximum Propagation Delay Curves**

## 7 Parameter Measurement Information



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



- $C_L$  includes probe and test-fixture capacitance.
- 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.
- 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.
- The outputs are measured one at a time with one input transition per measurement.
- $t_{PLZ}$  and  $t_{PHZ}$  are the same as  $t_{dis}$ .
- $t_{PZL}$  and  $t_{PZH}$  are the same as  $t_{en}$ .
- $t_{PLH}$  and  $t_{PHL}$  are the same as  $t_{pd}$ .

**7-1. Load Circuit and Voltage Waveforms**

## 8 Detailed Description

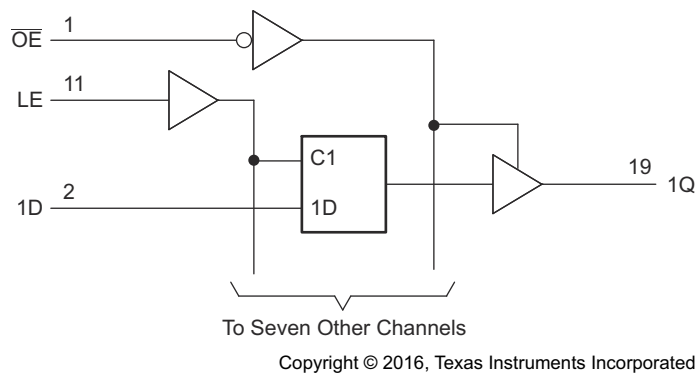
### 8.1 Overview

The SNx4HC573A devices are octal transparent D-type latches that feature 3-state outputs designed specifically for driving highly capacitive or relatively low-impedance loads. 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.

To ensure the high-impedance state during power up or power down,  $\overline{OE}$  must be tied to  $V_{CC}$  through a pullup resistor; the minimum value of the resistor is determined by the current-sinking capability of the driver.

$\overline{OE}$  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.

### 8.2 Functional Block Diagram



**8-1. Logic Diagram (Positive Logic)**

### 8.3 Feature Description

The SNx4HC573A is a high current 3-state output device which can drive bus lines directly or up to 15 LSTTL loads. It has low power consumption up to 80- $\mu$ A maximum  $I_{CC}$ . The high speed CMOS family has typical propagation delay of 21 ns with  $\pm 6$ -mA output drive at 5 V. The input leakage current is a very low 1- $\mu$ A (maximum).

### 8.4 Device Functional Modes

表 8-1 lists the functional modes of the SNx4HC573A.

**表 8-1. Function Table (Each Latch)**

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

## 9 Application and Implementation

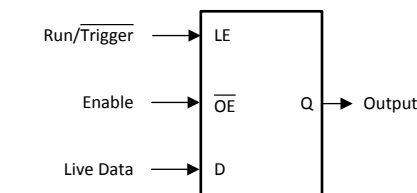
### Note

以下のアプリケーション情報は、TI の製品仕様に含まれるものではなく、TI ではその正確性または完全性を保証いたしません。個々の目的に対する製品の適合性については、お客様の責任で判断していただくことになります。また、お客様は自身の設計実装を検証しテストすることで、システムの機能を確認する必要があります。

### 9.1 Application Information

To ensure the high-impedance state during power up or power down,  $\overline{OE}$  must be tied to  $V_{CC}$  through a pullup resistor; the minimum value of the resistor is determined by the current-sinking capability of the driver.  $\overline{OE}$  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. The SNx4HC573A latches can be used to store 8 bits of data. [図 9-1](#) shows a typical application. A low trigger event latches the output to preserve the event for processing later. With latch input high, this acts as a buffer which follows the live data at the D input when output enable pin held is low.

### 9.2 Typical Application



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図 9-1. Typical Application Schematic

#### 9.2.1 Design Requirements

The SNx4HC573A device uses CMOS technology and has balanced output drive ( $\pm 7.8\text{-mA}$ ). Take care to avoid bus contention, because it can drive currents that would exceed maximum limits.

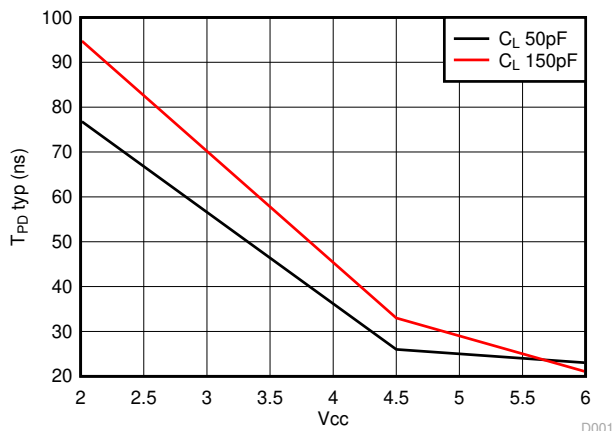
#### 9.2.2 Detailed Design Procedure

Design requirements must adhere to the [セクション 6.3](#) and must never exceed the [セクション 6.1](#).

The inputs must have a ramp time less than input transition time mentioned in the [セクション 6.3](#). Slow inputs can cause oscillations at the output, false triggering, and increased current consumption. TI recommends a Schmitt trigger device like SN74HC14 which can tolerate slower signals.

The inputs and outputs must never exceed  $V_{CC}$  to not forward bias the internal ESD diodes. The maximum frequency supported by this device is 28 MHz.

### 9.2.3 Application Curve



9-2. Typical Propagation Delay Curves

## 10 Power Supply Recommendations

The power supply can be any voltage between the minimum and maximum supply voltage rating located in the セクション 6.3 table. The total current through Ground or  $V_{CC}$  must not exceed  $\pm 70$  mA as per セクション 6.1 table.

Each  $V_{CC}$  pin must have a good bypass capacitor to prevent power disturbance. For devices with a single supply, TI recommends 0.1- $\mu\text{F}$  capacitor; if there are multiple  $V_{CC}$  pins, then TI recommends 0.01- $\mu\text{F}$  or 0.022- $\mu\text{F}$  capacitor for each power pin. It is acceptable to parallel multiple bypass capacitors to reject different frequencies of noise. A 0.1- $\mu\text{F}$  and 1- $\mu\text{F}$  capacitor are commonly used in parallel. The bypass capacitor must be installed as close to the power pin as possible for best results.

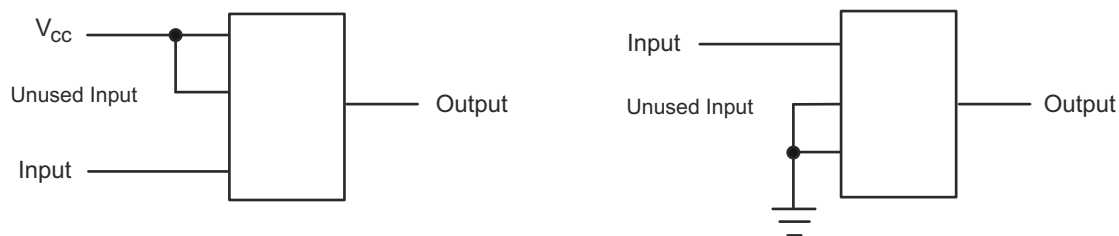
## 11 Layout

### 11.1 Layout Guidelines

When using multiple-bit logic devices, inputs must never float.

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 the gate are used, or only 3 of the 4 buffer gates are used. Such input pins must not be left unconnected because the undefined voltages at the outside connections result in undefined operational states. [Figure 11-1](#) specifies the rules that must be observed under all circumstances. All unused inputs of digital logic devices must be connected to a high or low bias 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, they are tied to GND or  $V_{CC}$ , whichever makes more sense or is more convenient. It is acceptable to float outputs, unless the part is a transceiver. If the transceiver has an output enable pin, it disables the output section of the part when asserted. This does not disable the input section of the I/Os, so they cannot float when disabled.

### 11.2 Layout Example



**Figure 11-1. Layout Diagram**

## 12 Device and Documentation Support

### 12.1 Documentation Support

#### 12.1.1 Related Documentation

For related documentation see the following:

[Implications of Slow or Floating CMOS Inputs](#) (SCBA004)

### 12.2 Related Links

The table below lists quick access links. Categories include technical documents, support and community resources, tools and software, and quick access to sample or buy.

**表 12-1. Related Links**

| PARTS      | PRODUCT FOLDER             | SAMPLE & BUY               | TECHNICAL DOCUMENTS        | TOOLS & SOFTWARE           | SUPPORT & COMMUNITY        |
|------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| SN54HC573A | <a href="#">Click here</a> | <a href="#">Click here</a> | <a href="#">Click here</a> | <a href="#">Click here</a> | <a href="#">Click here</a> |
| SN74HC573A | <a href="#">Click here</a> | <a href="#">Click here</a> | <a href="#">Click here</a> | <a href="#">Click here</a> | <a href="#">Click here</a> |

### 12.3 Receiving Notification of Documentation Updates

To receive notification of documentation updates, navigate to the device product folder on ti.com. In the upper right corner, click on *Alert me* 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.

### 12.4 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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### 12.5 Trademarks

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### 12.6 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.

### 12.7 Glossary

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

## 13 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="#">5962-8512801VRA</a>  | Active        | Production           | CDIP (J)   20   | 20   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | 5962-8512801VR<br>A<br>SNV54HC573AJ |
| 5962-8512801VRA.A                | Active        | Production           | CDIP (J)   20   | 20   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | 5962-8512801VR<br>A<br>SNV54HC573AJ |
| <a href="#">85128012A</a>        | Active        | Production           | LCCC (FK)   20  | 55   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | 85128012A<br>SNJ54HC<br>573AFK      |
| <a href="#">8512801RA</a>        | Active        | Production           | CDIP (J)   20   | 20   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | 8512801RA<br>SNJ54HC573AJ           |
| <a href="#">8512801SA</a>        | Active        | Production           | CFP (W)   20    | 25   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | 8512801SA<br>SNJ54HC573AW           |
| <a href="#">JM38510/65406BRA</a> | Active        | Production           | CDIP (J)   20   | 20   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | JM38510/<br>65406BRA                |
| JM38510/65406BRA.A               | Active        | Production           | CDIP (J)   20   | 20   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | JM38510/<br>65406BRA                |
| <a href="#">M38510/65406BRA</a>  | Active        | Production           | CDIP (J)   20   | 20   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | JM38510/<br>65406BRA                |
| <a href="#">SN54HC573AJ</a>      | Active        | Production           | CDIP (J)   20   | 20   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | SN54HC573AJ                         |
| SN54HC573AJ.A                    | Active        | Production           | CDIP (J)   20   | 20   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | SN54HC573AJ                         |
| <a href="#">SN74HC573ADBR</a>    | Active        | Production           | SSOP (DB)   20  | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HC573A                              |
| SN74HC573ADBR.A                  | Active        | Production           | SSOP (DB)   20  | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HC573A                              |
| <a href="#">SN74HC573ADW</a>     | Obsolete      | Production           | SOIC (DW)   20  | -                     | -           | Call TI                              | Call TI                           | -40 to 85    | HC573A                              |
| <a href="#">SN74HC573ADWR</a>    | Active        | Production           | SOIC (DW)   20  | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HC573A                              |
| SN74HC573ADWR.A                  | Active        | Production           | SOIC (DW)   20  | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HC573A                              |
| SN74HC573ADWRG4                  | Active        | Production           | SOIC (DW)   20  | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HC573A                              |
| <a href="#">SN74HC573AN</a>      | Active        | Production           | PDIP (N)   20   | 20   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -40 to 85    | SN74HC573AN                         |
| SN74HC573AN.A                    | Active        | Production           | PDIP (N)   20   | 20   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -40 to 85    | SN74HC573AN                         |
| SN74HC573ANE4                    | Active        | Production           | PDIP (N)   20   | 20   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -40 to 85    | SN74HC573AN                         |
| <a href="#">SN74HC573APWR</a>    | Active        | Production           | TSSOP (PW)   20 | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HC573A                              |
| SN74HC573APWR.A                  | Active        | Production           | TSSOP (PW)   20 | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HC573A                              |



| 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)            |
|-------------------------------|---------------|----------------------|-----------------|-----------------------|-------------|--------------------------------------|-----------------------------------|--------------|--------------------------------|
| SN74HC573APWRG4               | Active        | Production           | TSSOP (PW)   20 | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | HC573A                         |
| <a href="#">SN74HC573APWT</a> | Obsolete      | Production           | TSSOP (PW)   20 | -                     | -           | Call TI                              | Call TI                           | -40 to 85    | HC573A                         |
| <a href="#">SNJ54HC573AFK</a> | Active        | Production           | LCCC (FK)   20  | 55   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | 85128012A<br>SNJ54HC<br>573AFK |
| SNJ54HC573AFK.A               | Active        | Production           | LCCC (FK)   20  | 55   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | 85128012A<br>SNJ54HC<br>573AFK |
| <a href="#">SNJ54HC573AJ</a>  | Active        | Production           | CDIP (J)   20   | 20   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | 8512801RA<br>SNJ54HC573AJ      |
| SNJ54HC573AJ.A                | Active        | Production           | CDIP (J)   20   | 20   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | 8512801RA<br>SNJ54HC573AJ      |
| <a href="#">SNJ54HC573AW</a>  | Active        | Production           | CFP (W)   20    | 25   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | 8512801SA<br>SNJ54HC573AW      |
| SNJ54HC573AW.A                | Active        | Production           | CFP (W)   20    | 25   TUBE             | No          | SNPB                                 | N/A for Pkg Type                  | -55 to 125   | 8512801SA<br>SNJ54HC573AW      |

<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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In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

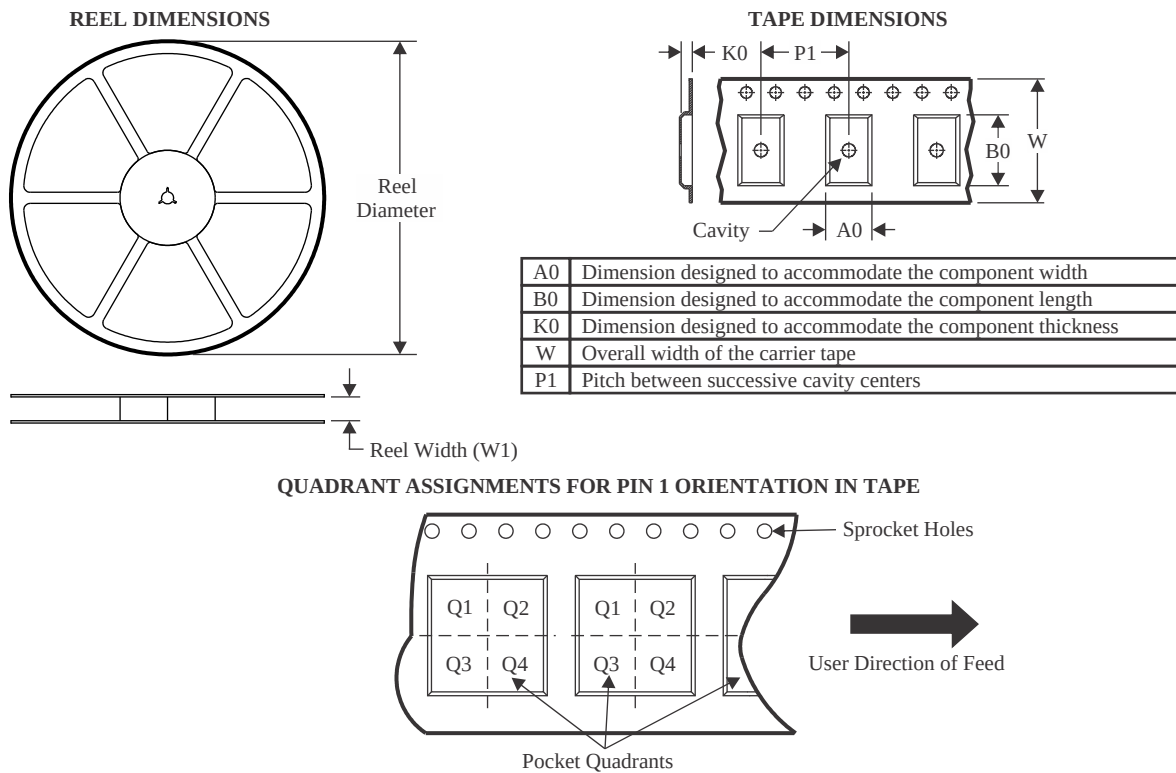
**OTHER QUALIFIED VERSIONS OF SN54HC573A, SN54HC573A-SP, SN74HC573A :**

- Catalog : [SN74HC573A](#), [SN54HC573A](#)
- Automotive : [SN74HC573A-Q1](#), [SN74HC573A-Q1](#)
- Military : [SN54HC573A](#)
- Space : [SN54HC573A-SP](#)

**NOTE: Qualified Version Definitions:**

- Catalog - TI's standard catalog product
- Automotive - Q100 devices qualified for high-reliability automotive applications targeting zero defects
- Military - QML certified for Military and Defense Applications
- Space - Radiation tolerant, ceramic packaging and qualified for use in Space-based application

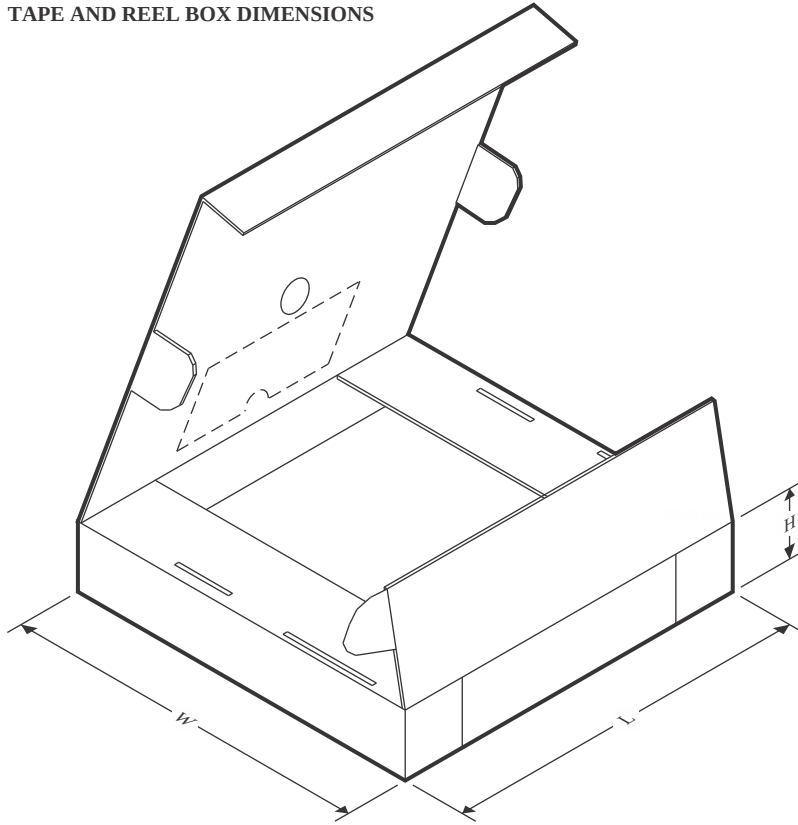
## TAPE AND REEL INFORMATION



\*All dimensions are nominal

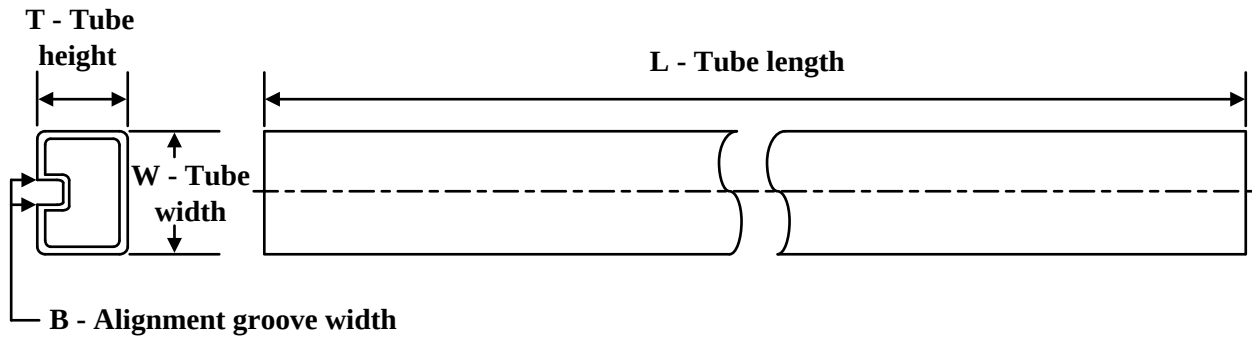
| Device        | Package Type | Package Drawing | Pins | SPQ  | Reel Diameter (mm) | Reel Width W1 (mm) | A0 (mm) | B0 (mm) | K0 (mm) | P1 (mm) | W (mm) | Pin1 Quadrant |
|---------------|--------------|-----------------|------|------|--------------------|--------------------|---------|---------|---------|---------|--------|---------------|
| SN74HC573ADBR | SSOP         | DB              | 20   | 2000 | 330.0              | 16.4               | 8.2     | 7.5     | 2.5     | 12.0    | 16.0   | Q1            |
| SN74HC573ADWR | SOIC         | DW              | 20   | 2000 | 330.0              | 24.4               | 10.9    | 13.3    | 2.7     | 12.0    | 24.0   | Q1            |
| SN74HC573APWR | 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) |
|---------------|--------------|-----------------|------|------|-------------|------------|-------------|
| SN74HC573ADBR | SSOP         | DB              | 20   | 2000 | 353.0       | 353.0      | 32.0        |
| SN74HC573ADWR | SOIC         | DW              | 20   | 2000 | 356.0       | 356.0      | 45.0        |
| SN74HC573APWR | TSSOP        | PW              | 20   | 2000 | 353.0       | 353.0      | 32.0        |

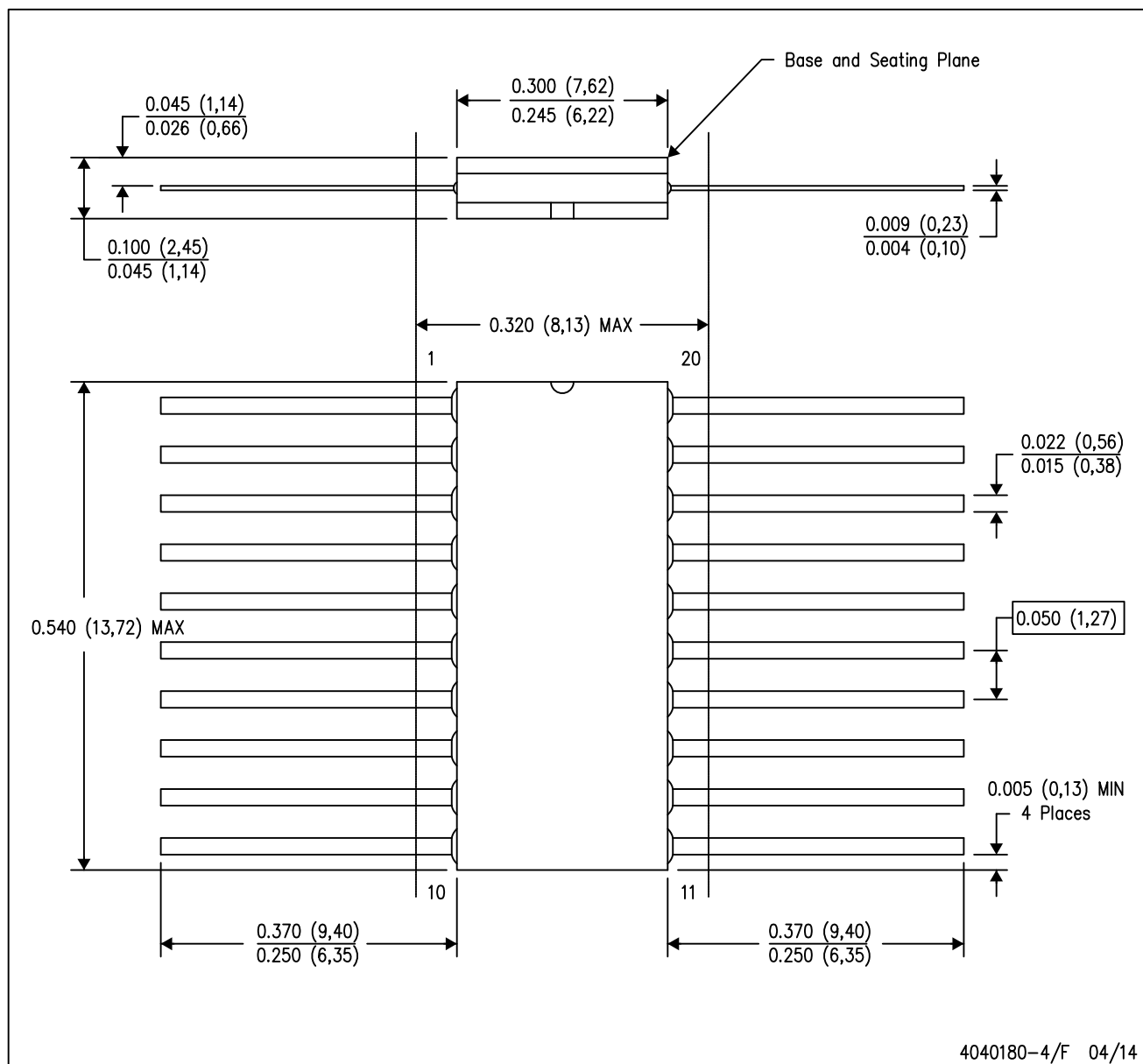
**TUBE**


\*All dimensions are nominal

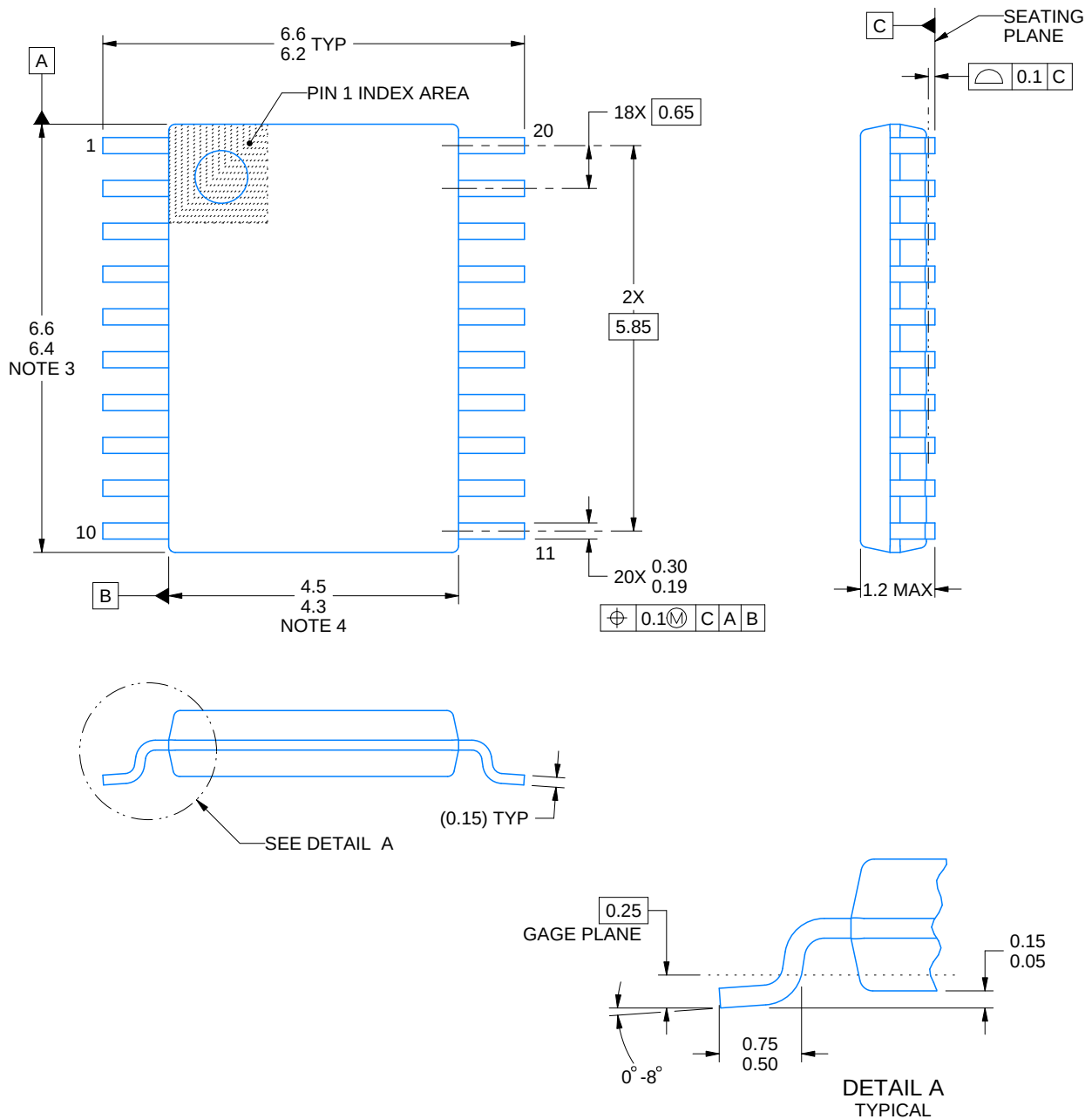
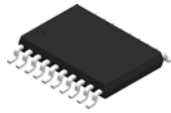
| Device          | Package Name | Package Type | Pins | SPQ | L (mm) | W (mm) | T (μm) | B (mm) |
|-----------------|--------------|--------------|------|-----|--------|--------|--------|--------|
| 85128012A       | FK           | LCCC         | 20   | 55  | 506.98 | 12.06  | 2030   | NA     |
| 8512801SA       | W            | CFP          | 20   | 25  | 506.98 | 26.16  | 6220   | NA     |
| SN74HC573AN     | N            | PDIP         | 20   | 20  | 506    | 13.97  | 11230  | 4.32   |
| SN74HC573AN.A   | N            | PDIP         | 20   | 20  | 506    | 13.97  | 11230  | 4.32   |
| SN74HC573ANE4   | N            | PDIP         | 20   | 20  | 506    | 13.97  | 11230  | 4.32   |
| SNJ54HC573AFK   | FK           | LCCC         | 20   | 55  | 506.98 | 12.06  | 2030   | NA     |
| SNJ54HC573AFK.A | FK           | LCCC         | 20   | 55  | 506.98 | 12.06  | 2030   | NA     |
| SNJ54HC573AW    | W            | CFP          | 20   | 25  | 506.98 | 26.16  | 6220   | NA     |
| SNJ54HC573AW.A  | W            | CFP          | 20   | 25  | 506.98 | 26.16  | 6220   | NA     |

W (R-GDFP-F20)

CERAMIC DUAL FLATPACK



- NOTES:
- All linear dimensions are in inches (millimeters).
  - This drawing is subject to change without notice.
  - This package can be hermetically sealed with a ceramic lid using glass frit.
  - Index point is provided on cap for terminal identification only.
  - Falls within Mil-Std 1835 GDFP2-F20



4220206/A 02/2017

## NOTES:

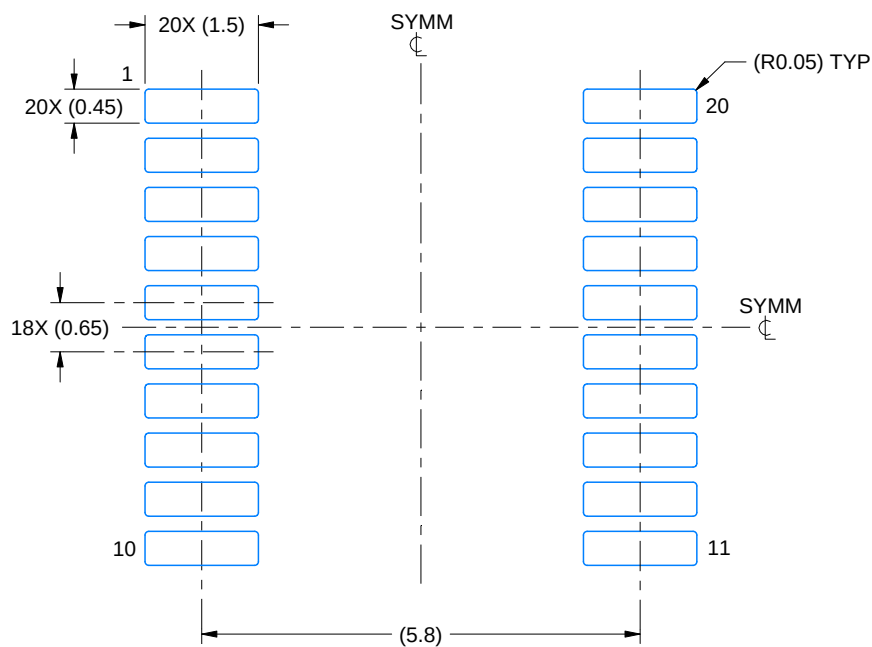
1. All linear dimensions are in millimeters. Any dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. This dimension does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or 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

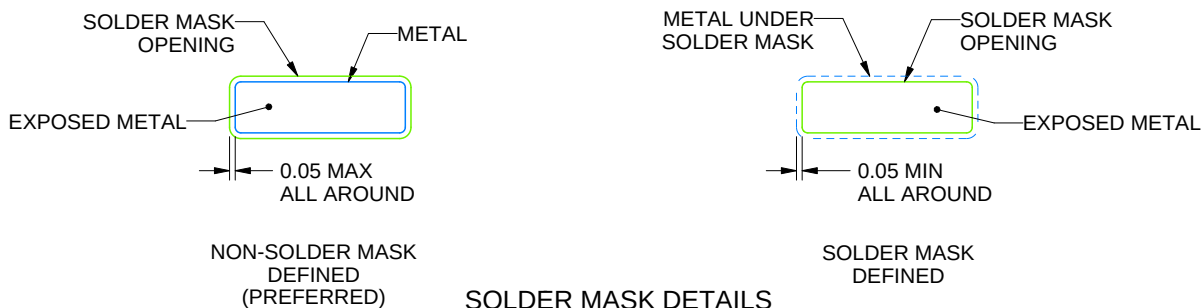
PW0020A

TSSOP - 1.2 mm max height

SMALL OUTLINE PACKAGE



LAND PATTERN EXAMPLE  
EXPOSED METAL SHOWN  
SCALE: 10X



SOLDER MASK DETAILS

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.

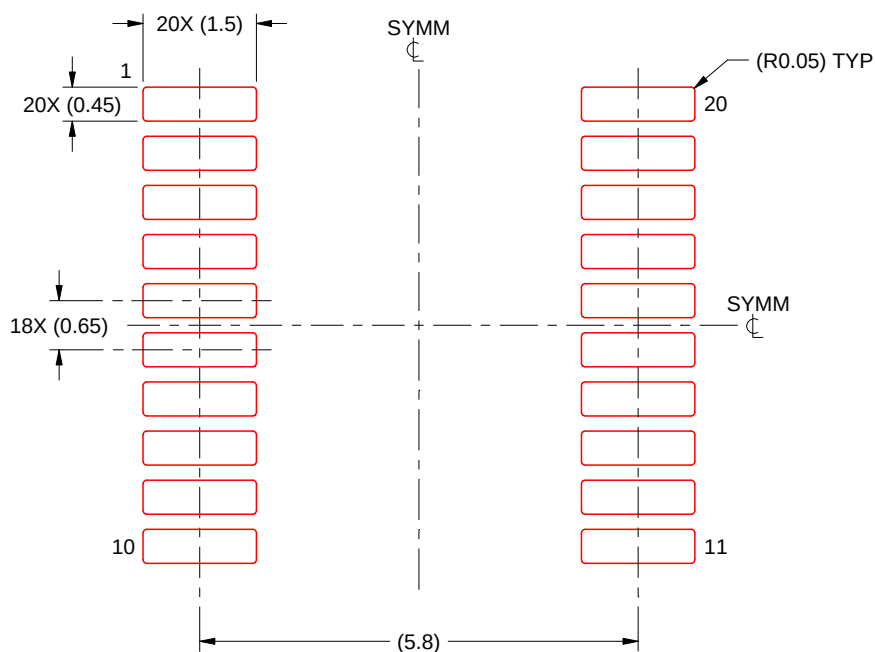


## EXAMPLE STENCIL DESIGN

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.

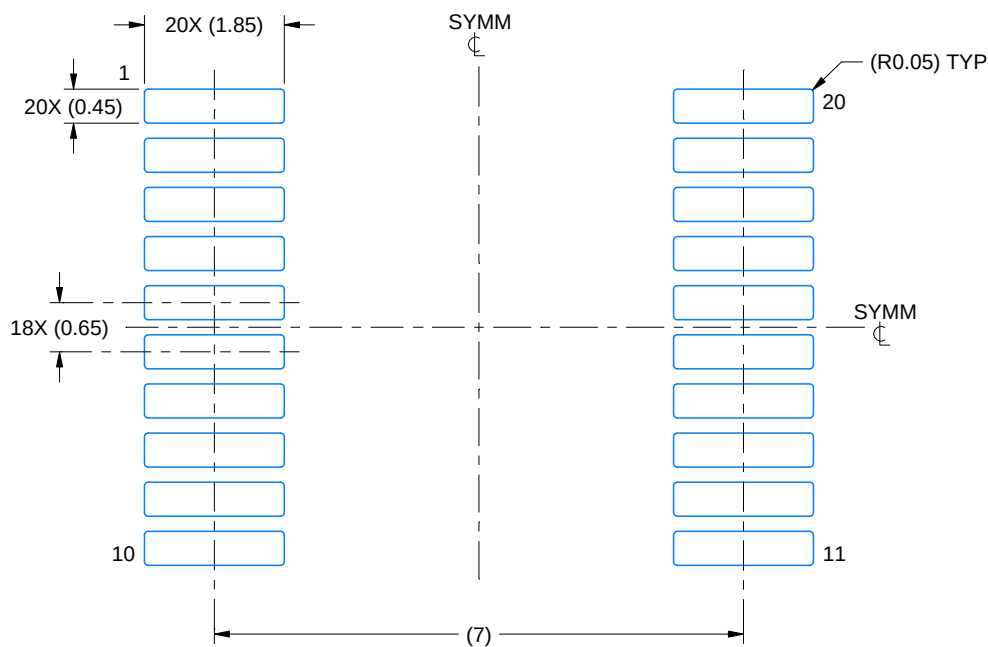


# EXAMPLE BOARD LAYOUT

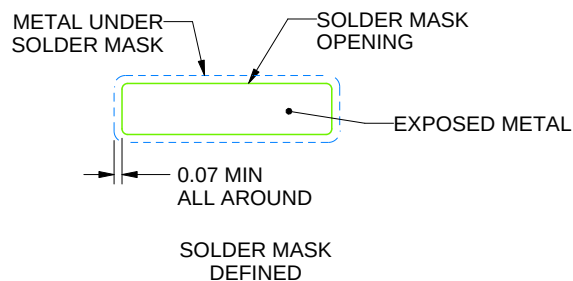
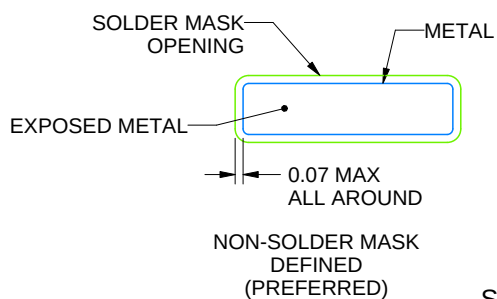
DB0020A

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.

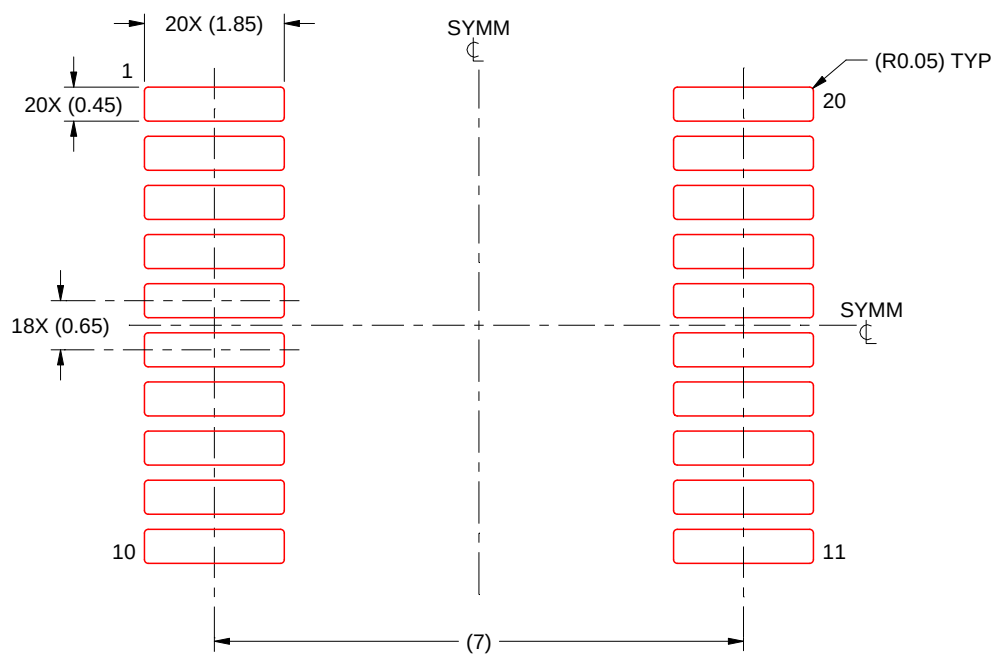
7. Solder mask tolerances between and around signal pads can vary based on board fabrication site.

## 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

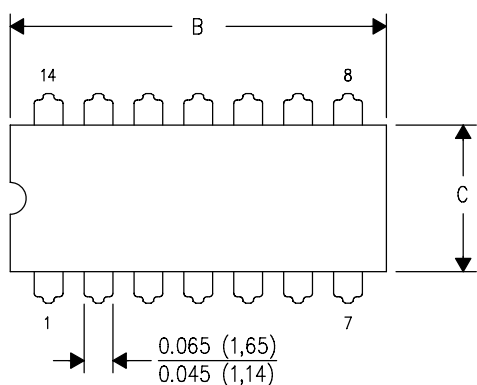
NOTES: (continued)

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.

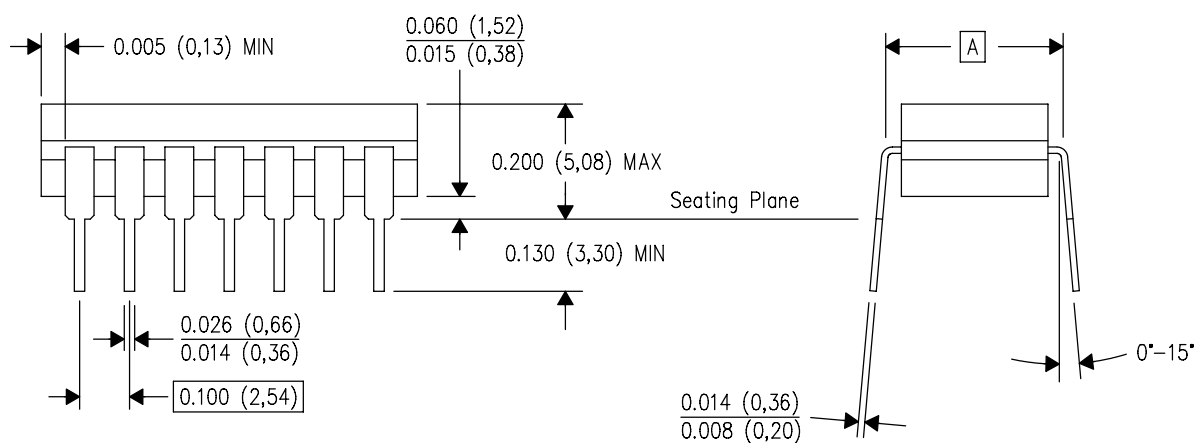
J (R-GDIP-T\*\*)

14 LEADS SHOWN

# CERAMIC DUAL IN-LINE PACKAGE



| PINS **<br>DIM | 14                     | 16                     | 18                     | 20                     |
|----------------|------------------------|------------------------|------------------------|------------------------|
| A              | 0.300<br>(7,62)<br>BSC | 0.300<br>(7,62)<br>BSC | 0.300<br>(7,62)<br>BSC | 0.300<br>(7,62)<br>BSC |
| B MAX          | 0.785<br>(19,94)       | .840<br>(21,34)        | 0.960<br>(24,38)       | 1.060<br>(26,92)       |
| B MIN          | —                      | —                      | —                      | —                      |
| C MAX          | 0.300<br>(7,62)        | 0.300<br>(7,62)        | 0.310<br>(7,87)        | 0.300<br>(7,62)        |
| C MIN          | 0.245<br>(6,22)        | 0.245<br>(6,22)        | 0.220<br>(5,59)        | 0.245<br>(6,22)        |



4040083/F 03/03

- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - C. This package is hermetically sealed with a ceramic lid using glass frit.
  - D. Index point is provided on cap for terminal identification only on press ceramic glass frit seal only.
  - E. Falls within MIL STD 1835 GDIP1-T14, GDIP1-T16, GDIP1-T18 and GDIP1-T20.

## GENERIC PACKAGE VIEW

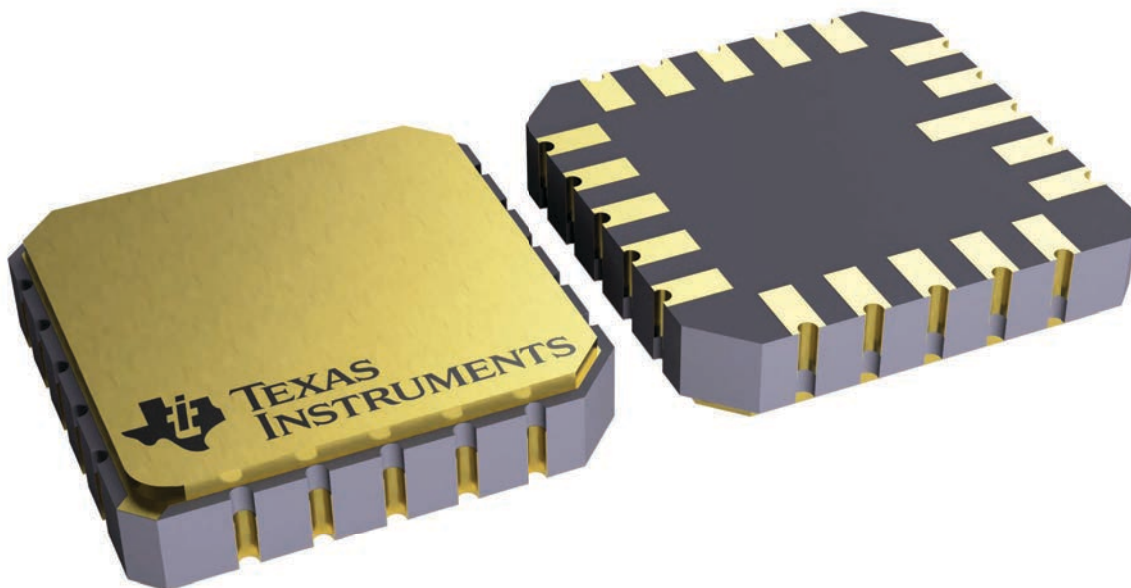
**FK 20**

**LCCC - 2.03 mm max height**

8.89 x 8.89, 1.27 mm pitch

LEADLESS CERAMIC CHIP CARRIER

This image is a representation of the package family, actual package may vary.  
Refer to the product data sheet for package details.

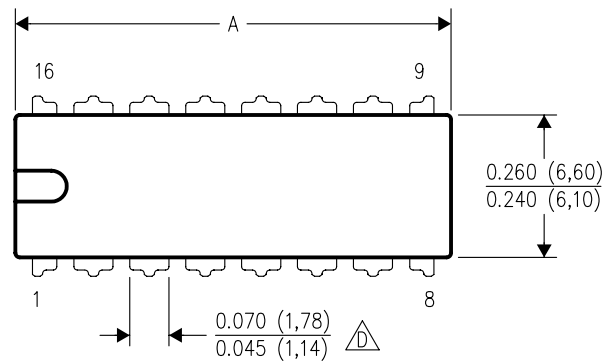


4229370VA\

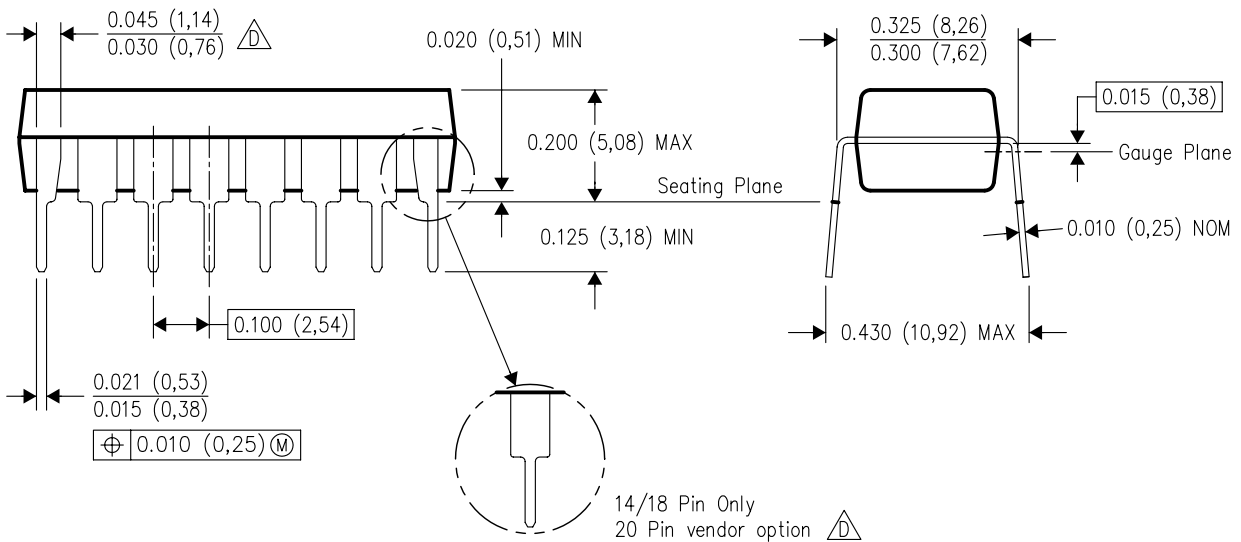
## N (R-PDIP-T\*\*)

16 PINS SHOWN

## PLASTIC DUAL-IN-LINE PACKAGE



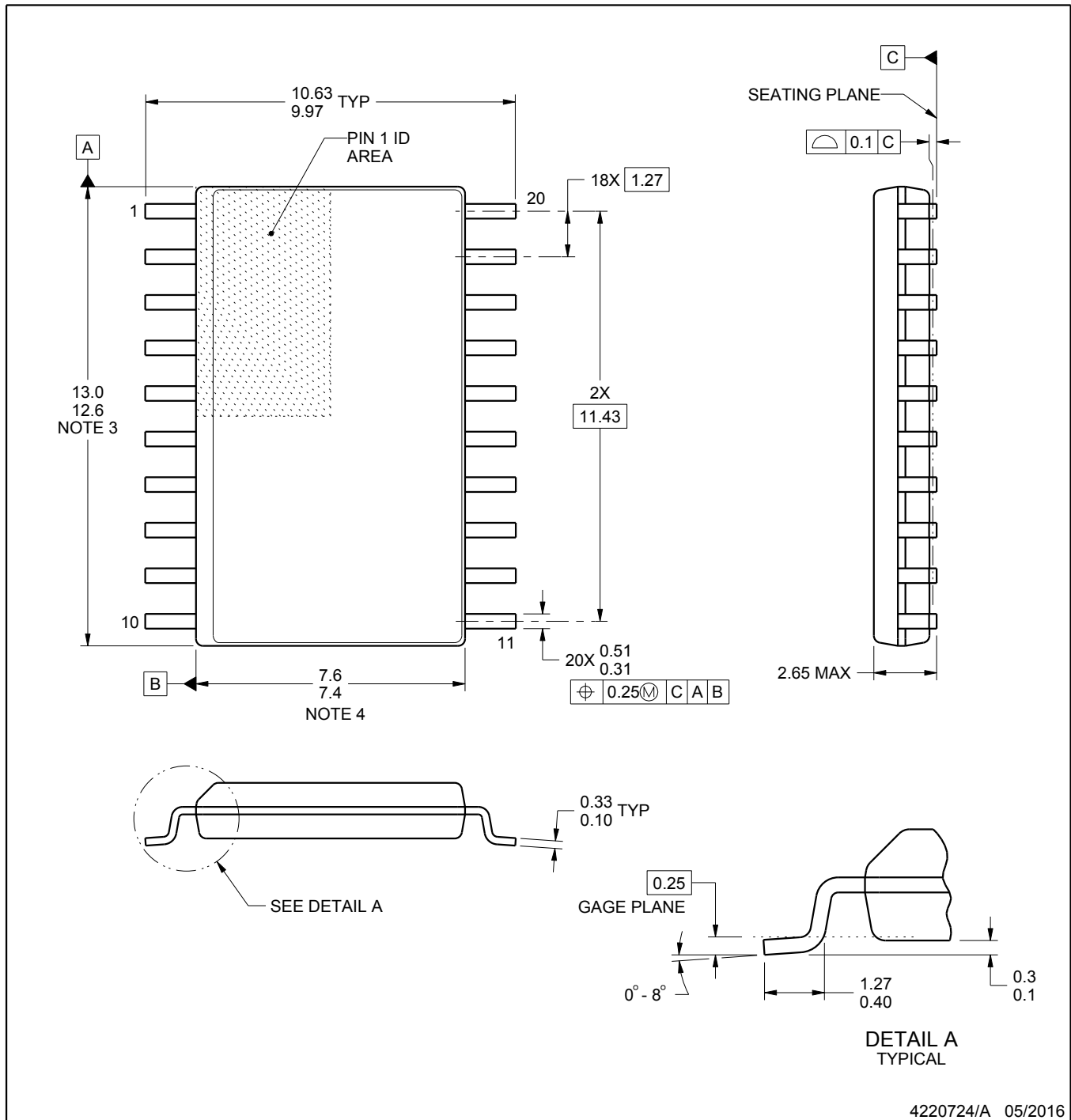
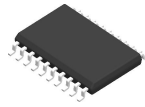
| PINS **             | 14               | 16               | 18               | 20               |
|---------------------|------------------|------------------|------------------|------------------|
| DIM                 |                  |                  |                  |                  |
| 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               |



14/18 Pin Only  
20 Pin vendor option

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:

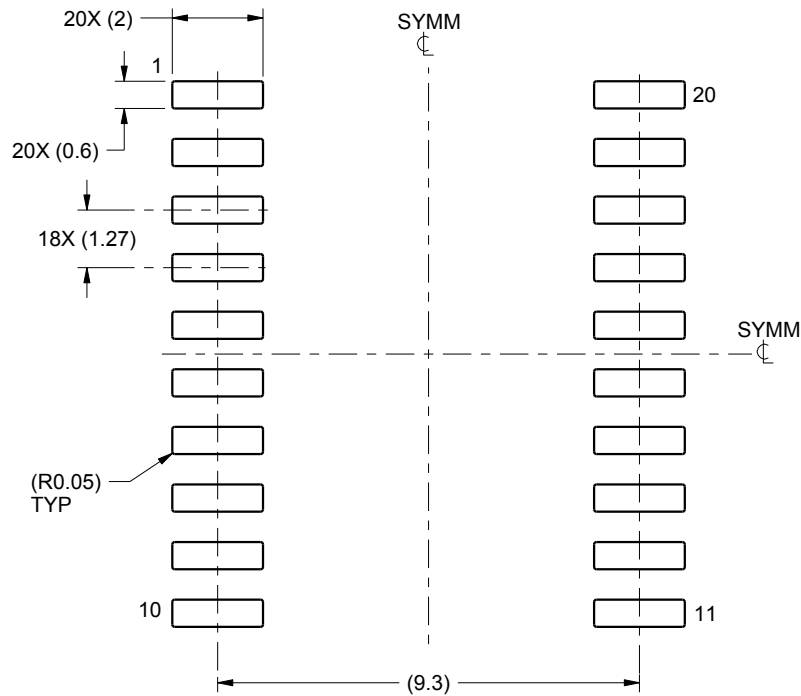
1. All linear dimensions are in millimeters. Dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. This dimension does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate 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.



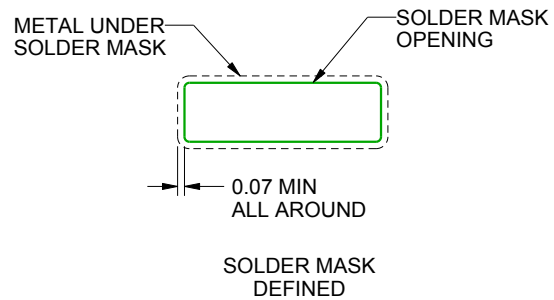
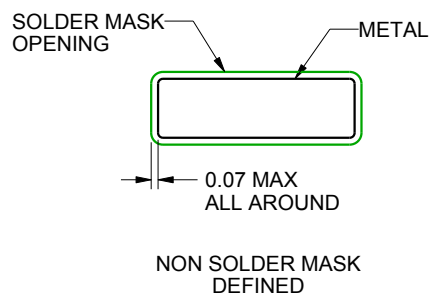
**DW0020A**

**SOIC - 2.65 mm max height**

SOIC



LAND PATTERN EXAMPLE  
SCALE:6X



## SOLDER MASK DETAILS

4220724/A 05/2016

NOTES: (continued)

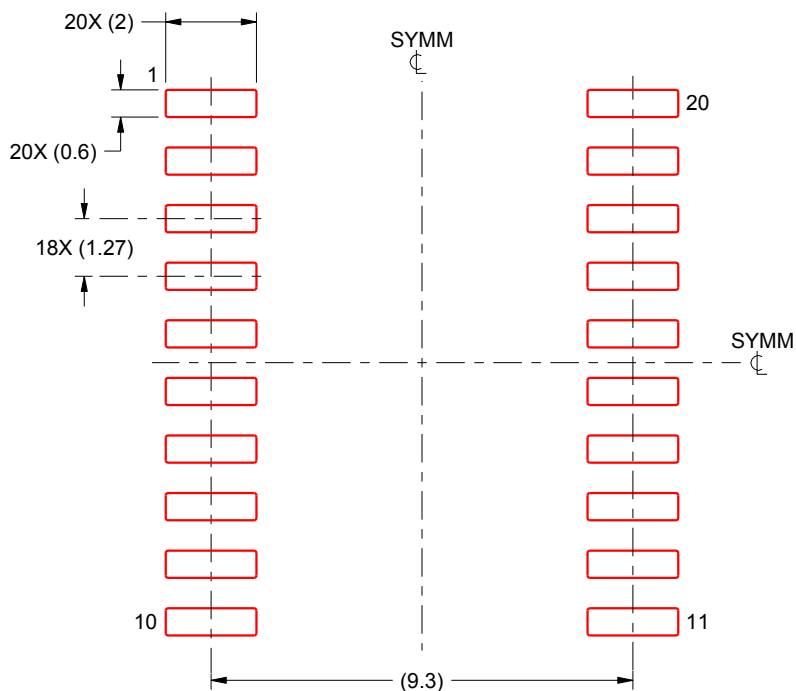
6. Publication IPC-7351 may have alternate designs.  
7. Solder mask tolerances between and around signal pads can vary based on board fabrication site.

## 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.

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最終更新日：2025 年 10 月