

# SNx4AC373 具有三态输出的八路 D 类透明锁存器

## 1 特性

- 工作范围为 2V 至 6V  $V_{CC}$
- 输入电压高达 6V
- 电压为 5V 时,  $t_{pd}$  最大值为 9.5ns
- 三态同相输出直接驱动总线
- 支持全并行加载访问

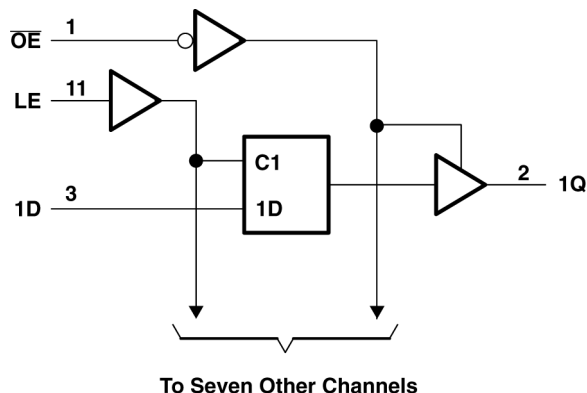
## 2 说明

这些 8 位锁存器具有专门设计用于驱动高电容或相对低阻抗负载的三态输出。这些器件特别适用于实现缓冲寄存器、I/O 端口、双向总线驱动器和寄存器。

### 器件信息

器件型号	封装 <sup>(1)</sup>	封装尺寸 <sup>(2)</sup>	本体尺寸 <sup>(3)</sup>
SNx4AC373	DB ( SSOP , 20 )	7.2mm x 7.8mm	7.2mm x 5.30mm
	DW ( SOIC , 20 )	12.80mm x 10.3mm	12.80mm x 7.50mm
	N ( PDIP , 20 )	24.33mm x 9.4mm	24.33mm x 6.35mm
	NS ( SOP , 20 )	12.6mm x 7.8mm	12.6mm x 5.3mm
	PW ( TSSOP , 20 )	6.50mm x 6.4mm	6.50mm x 4.40mm

- (1) 有关更多信息, 请参阅第 10 节。
- (2) 封装尺寸 (长 × 宽) 为标称值, 并包括引脚 (如适用)。
- (3) 本体尺寸 (长 × 宽) 为标称值, 不包括引脚。



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### 3 Pin Configuration and Functions

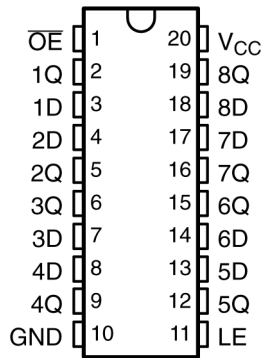


图 3-1. SN54AC373 J or W Package; SN74AC373 DB, DW, N, NS, or PW Package (Top View)

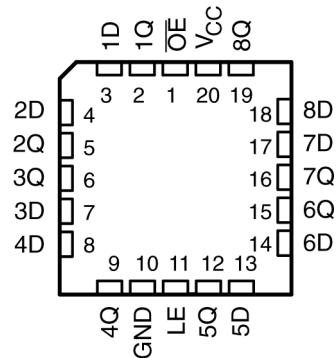


图 3-2. SN54AC373 FK Package (Top View)

表 3-1. Pin Functions

NO.	PIN		TYPE	DESCRIPTION
	SSOP, TVSOP, SOIC, SO, or TSSOP	VQFN		
1	OE	OE	I	Output Enable
2	1Q	1Q	O	1Q Output
3	1D	1D	I	1D Input
4	2D	2D	I	2D Input
5	2Q	2Q	O	2Q Output
6	3Q	3Q	O	3Q Output
7	3D	3D	I	3D Input
8	4D	4D	I	4D Input
9	4Q	4Q	O	4Q Output
10	GND	GND	—	Ground Pin
11	LE	LE	I	Latch Enable
12	5Q	5Q	O	5Q Output
13	5D	5D	I	5D Input
14	6D	6D	I	6D Input
15	6Q	6Q	O	6Q Output
16	7Q	7Q	O	7Q Output
17	7D	7D	I	7D Input
18	8D	8D	I	8D Input
19	8Q	8Q	O	8Q Output
20	V <sub>CC</sub>	V <sub>CC</sub>	—	Power Pin
—	—	Thermal Pad	—	Thermal Pad, normally tied to GND

## 4 Specifications

### 4.1 Absolute Maximum Ratings

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

		MIN	MAX	UNIT
V <sub>CC</sub>	Supply voltage range	-0.5	7	V
V <sub>I</sub> <sup>1</sup>	Input voltage range	-0.5	V <sub>CC</sub> + 0.5	V
V <sub>O</sub> <sup>1</sup>	Output voltage range	-0.5	V <sub>CC</sub> + 0.5	V
I <sub>IK</sub>	Input clamp current (V <sub>I</sub> < 0 or V <sub>I</sub> > V <sub>CC</sub> )		±20	mA
I <sub>OK</sub>	Output clamp current (V <sub>O</sub> < 0 or V <sub>O</sub> > V <sub>CC</sub> )		±20	mA
I <sub>O</sub>	Continuous output current (V <sub>O</sub> = 0 to V <sub>CC</sub> )		±50	mA
	Continuous current through V <sub>CC</sub> or GND		±200	mA
T <sub>stg</sub>	Storage temperature range	-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.

### 4.2 Recommended Operating Conditions

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

		SN54AC373		SN74AC373		UNIT
		MIN	MAX	MIN	MAX	
V <sub>CC</sub>	Supply voltage	2	6	2	6	V
V <sub>IH</sub>	High-level input voltage	V <sub>CC</sub> = 3 V	2.1	2.1		V
		V <sub>CC</sub> = 4.5 V	3.15	3.15		
		V <sub>CC</sub> = 5.5 V	3.85	3.85		
V <sub>IL</sub>	Low-level input voltage	V <sub>CC</sub> = 3 V		0.9	0.9	V
		V <sub>CC</sub> = 4.5 V		1.35	1.35	
		V <sub>CC</sub> = 5.5 V		1.65	1.65	
V <sub>I</sub>	Input voltage	0	V <sub>CC</sub>	0	V <sub>CC</sub>	V
V <sub>O</sub>	Output voltage	0	V <sub>CC</sub>	0	V <sub>CC</sub>	V
I <sub>OH</sub>	High-level output current	V <sub>CC</sub> = 3 V		-12	-12	mA
		V <sub>CC</sub> = 4.5 V		-24	-24	
		V <sub>CC</sub> = 5.5 V		-24	-24	
I <sub>OL</sub>	Low-level output current	V <sub>CC</sub> = 3 V		12	12	mA
		V <sub>CC</sub> = 4.5 V		24	24	
		V <sub>CC</sub> = 5.5 V		24	24	
Δt/Δv	Input transition rise or fall rate		8		8	ns/V
T <sub>A</sub>	Operating free-air temperature	-55	125	-40	85	°C

- (1) All unused inputs of the device must be held at V<sub>CC</sub> or GND to for proper device operation. Refer to the TI application report, *Implications of Slow or Floating CMOS Inputs*, literature number SCBA004.

### 4.3 Thermal Information

THERMAL METRIC <sup>(1)</sup>	SNx4AC373					UNIT
	DB (SSOP)	DW (SOIC)	N	NS (SO)	PW (TSSOP)	
	20 PINS					
$R_{\theta JA}$ Junction-to-ambient thermal resistance	70	101.2	69	60	126.2	°C/W

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

### 4.4 Electrical Characteristics

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

PARAMETER	TEST CONDITIONS	$V_{CC}$	$T_A = 25^\circ\text{C}$			SN54AC373		SN74AC373		UNIT
			MIN	TYP	MAX	MIN	MAX	MIN	MAX	
$V_{OH}$	$I_{OH} = -50 \mu\text{A}$	3 V	2.9			2.9		2.9	V	
		4.5 V	4.4			4.4		4.4		
		5.5 V	5.4			5.4		5.4		
	$I_{OH} = -12 \text{ mA}$	3 V	2.56			2.4		2.46		
		4.5 V	3.86			3.7		3.76		
		5.5 V	4.86			4.7		4.76		
$V_{OL}$	$I_{OL} = 50 \mu\text{A}$	3 V			0.1		0.1	0.1	V	
		4.5 V			0.1		0.1	0.1		
		5.5 V			0.1		0.1	0.1		
	$I_{OL} = 12 \text{ mA}$	3 V			0.36		0.5	0.44		
		4.5 V			0.36		0.5	0.44		
		5.5 V			0.36		0.5	0.44		
$I_I$	$V_I = V_{CC}$ or GND	5.5 V			$\pm 0.1$		$\pm 1$	$\pm 1$	$\mu\text{A}$	
$I_{OZ}$	$V_O = V_{CC}$ or GND	5.5 V			$\pm 0.25$		$\pm 5$	$\pm 2.5$	$\mu\text{A}$	
$I_{CC}$	$V_I = V_{CC}$ or GND, $I_O = 0$	5.5 V			4		80	40	$\mu\text{A}$	
$C_i$	$V_I = V_{CC}$ or GND	5 V		4.5					pF	

### 4.5 Timing Requirements, $V_{CC} = 3.3 \text{ V} \pm 0.3 \text{ V}$

over recommended operating free-air temperature range,  $V_{CC} = 3.3 \text{ V} \pm 0.3 \text{ V}$  (unless otherwise noted) (see [Load Circuit and Voltage Waveforms](#))

		$T_A = 25^\circ\text{C}$		SN54AC373		SN74AC373		UNIT
		MIN	MAX	MIN	MAX	MIN	MAX	
$t_w$	Pulse duration, LE high	5.5		6.5		6		ns
$t_{su}$	Setup time, data before LE ↓	5.5		6.5		6		ns
$t_h$	Hold time, data after LE ↓	1		1		1		ns

### 4.6 Timing Requirements, $V_{CC} = 5 \text{ V} \pm 0.5 \text{ V}$

over recommended operating free-air temperature range,  $V_{CC} = 5 \text{ V} \pm 0.5 \text{ V}$  (unless otherwise noted) (see [Load Circuit and Voltage Waveforms](#))

		$T_A = 25^\circ\text{C}$		SN54AC373		SN74AC373		UNIT
		MIN	MAX	MIN	MAX	MIN	MAX	
$t_w$	Pulse duration, LE high	4		5		4.5		ns
$t_{su}$	Setup time, data before LE ↓	4		5		4.5		ns
$t_h$	Hold time, data after LE ↓	1		1		1		ns

#### 4.7 Switching Characteristics, $V_{CC} = 3.3 V \pm 0.3 V$

over recommended operating free-air temperature range,  $V_{CC} = 3.3 V \pm 0.3 V$  (unless otherwise noted) (see [Load Circuit and Voltage Waveforms](#))

PARAMETER	TO (INPUT)	TO (OUTPUT)	$T_A = 25^\circ\text{C}$			SN54AC373		SN74AC373		UNIT
			MIN	TYP	MAX	MIN	MAX	MIN	MAX	
$t_{PLH}$	D	Q	1.5	10	13.5	1	16.5	1.5	15	ns
$t_{PHL}$			1.5	9.5	13.0	1	16	1.5	14.5	
$t_{PLH}$	LE	Q	1.5	10	13.5	1	16.5	1.5	15	ns
$t_{PHL}$			1.5	9.5	12.5	1	15	1.5	14	
$t_{PZH}$	$\overline{OE}$	Q	1.5	9	11.5	1	14	1	13	ns
$t_{PZL}$			1.5	8.5	11.5	1	13.5	1	13	
$t_{PHZ}$	$\overline{OE}$	Q	1.5	10	12.5	1	16	1	14.5	ns
$t_{PLZ}$			1.5	8	11.5	1	13	1	12.5	

#### 4.8 Switching Characteristics, $V_{CC} = 5 V \pm 0.5 V$

over recommended operating free-air temperature range,  $V_{CC} = 5 V \pm 0.5 V$  (unless otherwise noted) (see [Load Circuit and Voltage Waveforms](#))

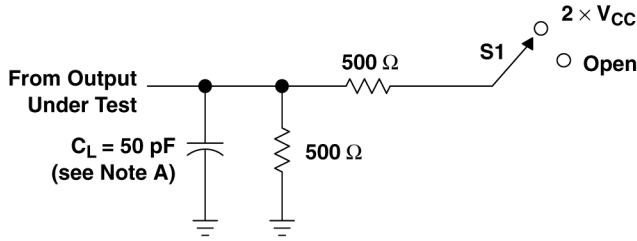
PARAMETER	TO (INPUT)	TO (OUTPUT)	$T_A = 25^\circ\text{C}$			SN54AC373		SN74AC373		UNIT
			MIN	TYP	MAX	MIN	MAX	MIN	MAX	
$t_{PLH}$	D	Q	1.5	7	9.5	1	11.5	1.5	10.5	ns
$t_{PHL}$			1.5	7	9.5	1	11.5	1.5	10.5	
$t_{PLH}$	LE	Q	1.5	7.5	9.5	1	12	1.5	10.5	ns
$t_{PHL}$			1.5	7	9.5	1	11	1.5	10.5	
$t_{PZH}$	$\overline{OE}$	Q	1.5	7	8.5	1	10.5	1	9.5	ns
$t_{PZL}$			1.5	6.5	8.5	1	10	1	9.5	
$t_{PHZ}$	$\overline{OE}$	Q	1.5	8	11	1	13.5	1	12.5	ns
$t_{PLZ}$			1.5	6.5	8.5	1	10.5	1	10	

#### 4.9 Operating Characteristics

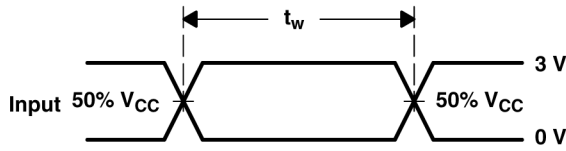
$V_{CC} = 5 V, T_A = 25^\circ\text{C}$

PARAMETER	TEST CONDITIONS	TYP	UNIT
$C_{pd}$ Power dissipation capacitance	$C_L = 50 \text{ pF}, f = 1 \text{ MHz}$	40	pF

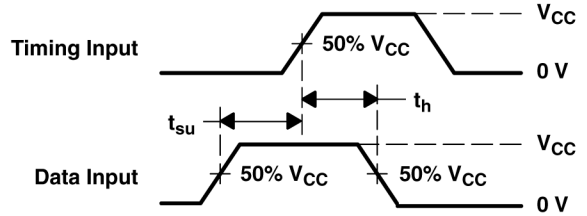
## 5 Parameter Measurement Information



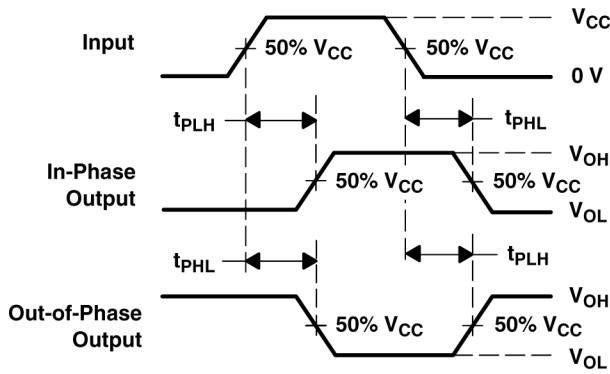
LOAD CIRCUIT



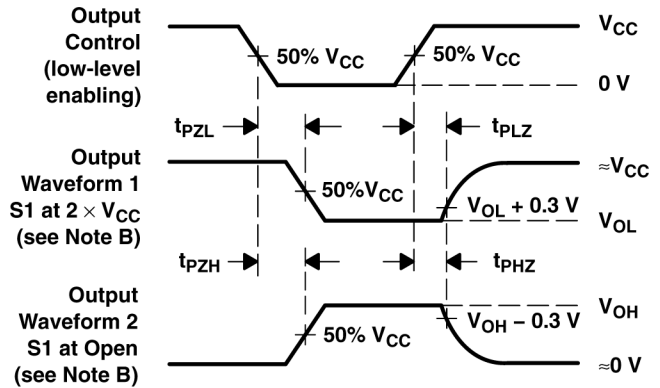
VOLTAGE WAVEFORMS



VOLTAGE WAVEFORMS



VOLTAGE WAVEFORMS



VOLTAGE WAVEFORMS

- A.  $C_L$  includes probe and jig 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. All input pulses are supplied by generators having the following characteristics:  $PRR \leq 1$  MHz,  $Z_O = 50 \Omega$ ,  $t_r \leq 2.5$  ns,  $t_f \leq 2.5$  ns.
- D. The outputs are measured one at a time with one input transition per measurement.

图 5-1. Load Circuit and Voltage Waveforms

TEST	S1
$t_{PLH}/t_{PHL}$	Open
$t_{PLZ}/t_{PZL}$	$2 \times V_{CC}$
$t_{PHZ}/t_{PZH}$	Open

## 6 Detailed Description

### 6.1 Overview

The eight latches are D-type transparent latches. When the latch-enable (LE) input is high, the Q outputs follow the data (D) inputs. When LE is taken low, the Q outputs are latched at the logic levels 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 in bus-organized systems without need for 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.

For specified 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.

### 6.2 Functional Block Diagram

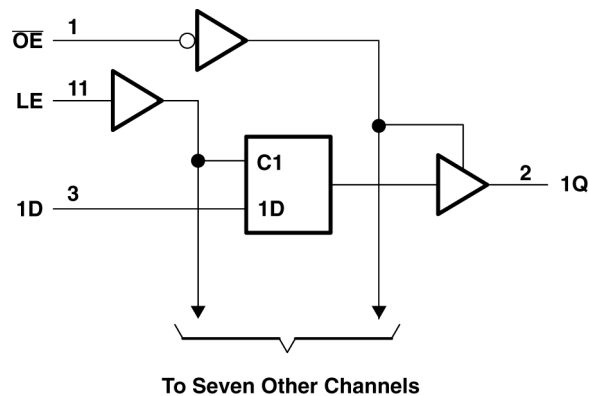


图 6-1. Logic Diagram (Positive Logic)

### 6.3 Device Functional Modes

表 6-1. Function Table (Each Latch)

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



## 7 Application and Implementation

### 备注

以下应用部分中的信息不属于 TI 器件规格的范围，TI 不担保其准确性和完整性。TI 的客户应负责确定器件是否适用于其应用。客户应验证并测试其设计，以确保系统功能。

### 7.1 Power Supply Recommendations

### 7.2 Layout

#### 7.2.1 Layout Guidelines

When using multiple bit logic devices, inputs should not float. In many cases, functions or parts of functions of digital logic devices are unused. Some examples are when only two inputs of a triple-input AND gate are used, or when only 3 of the 4-buffer gates are used. Such input pins should not be left unconnected because the undefined voltages at the outside connections result in undefined operational states.

Specified in [Layout Diagram](#) are 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 should be applied to any particular unused input depends on the function of the device. Generally they will be 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 will disable the outputs section of the part when asserted. This will not disable the input section of the I/Os so they also cannot float when disabled.

#### 7.2.2 Layout Example

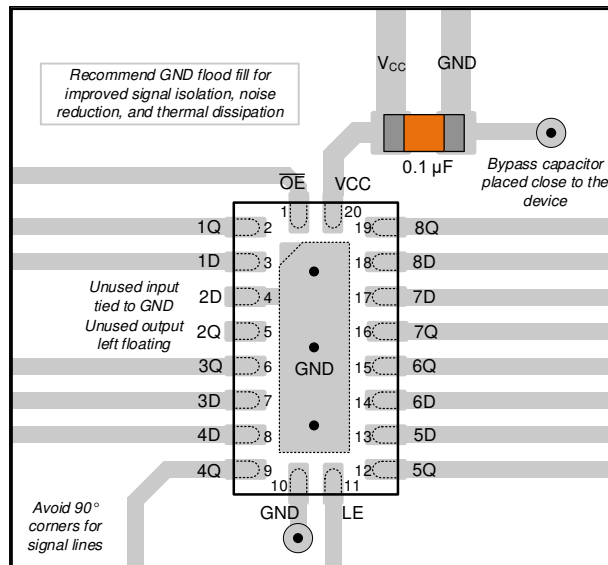


图 7-1. Layout example for the SNx4AC373

## 8 Device and Documentation Support

### 8.1 Documentation Support

#### 8.1.1 Related Documentation

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 8-1. Related Links

PARTS	PRODUCT FOLDER	SAMPLE & BUY	TECHNICAL DOCUMENTS	TOOLS & SOFTWARE	SUPPORT & COMMUNITY
SN54AC373	<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>
SN74AC373	<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>

### 8.2 接收文档更新通知

要接收文档更新通知，请导航至 [ti.com](http://ti.com) 上的器件产品文件夹。点击 [通知](#) 进行注册，即可每周接收产品信息更改摘要。有关更改的详细信息，请查看任何已修订文档中包含的修订历史记录。

### 8.3 支持资源

TI E2E™ [中文支持论坛](#) 是工程师的重要参考资料，可直接从专家处获得快速、经过验证的解答和设计帮助。搜索现有解答或提出自己的问题，获得所需的快速设计帮助。

链接的内容由各个贡献者“按原样”提供。这些内容并不构成 TI 技术规范，并且不一定反映 TI 的观点；请参阅 TI 的 [使用条款](#)。

### 8.4 Trademarks

TI E2E™ is a trademark of Texas Instruments.  
所有商标均为其各自所有者的财产。

### 8.5 静电放电警告



静电放电 (ESD) 会损坏这个集成电路。德州仪器 (TI) 建议通过适当的预防措施处理所有集成电路。如果不遵守正确的处理和安装程序，可能会损坏集成电路。

ESD 的损坏小至导致微小的性能降级，大至整个器件故障。精密的集成电路可能更容易受到损坏，这是因为非常细微的参数更改都可能会导致器件与其发布的规格不相符。

### 8.6 术语表

[TI 术语表](#) 本术语表列出并解释了术语、首字母缩略词和定义。

## 9 Revision History

注：以前版本的页码可能与当前版本的页码不同

### Changes from Revision E (August 2023) to Revision F (February 2024) Page

- Updated R<sub>θ</sub> JA values: DW = 58 to 101.2, PW = 83 to 126.2, all values in °C/W .....5
- Added *Application and Implementation* section.....9

### Changes from Revision D (October 2003) to Revision E (August 2023) Page

- 添加了 *器件信息表*、*引脚功能表*、*热性能信息表*、*器件功能模式*、*器件和文档支持* 部分以及 *机械*、*封装和可订购信息* 部分 .....1

## 10 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 Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead finish/ Ball material (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
5962-87555012A	ACTIVE	LCCC	FK	20	55	Non-RoHS & Green	SNPB	N / A for Pkg Type	-55 to 125	5962-87555012A SNJ54AC 373FK	<a href="#">Samples</a>
5962-8755501RA	ACTIVE	CDIP	J	20	20	Non-RoHS & Green	SNPB	N / A for Pkg Type	-55 to 125	5962-8755501RA SNJ54AC373J	<a href="#">Samples</a>
5962-8755501SA	ACTIVE	CFP	W	20	25	Non-RoHS & Green	SNPB	N / A for Pkg Type	-55 to 125	5962-8755501SA SNJ54AC373W	<a href="#">Samples</a>
5962-8755501VSA	ACTIVE	CFP	W	20	25	Non-RoHS & Green	SNPB	N / A for Pkg Type	-55 to 125	5962-8755501VSA SNV54AC373W	<a href="#">Samples</a>
SN74AC373DBR	ACTIVE	SSOP	DB	20	2000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AC373	<a href="#">Samples</a>
SN74AC373DW	OBSOLETE	SOIC	DW	20		TBD	Call TI	Call TI	-40 to 85	AC373	
SN74AC373DWR	ACTIVE	SOIC	DW	20	2000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AC373	<a href="#">Samples</a>
SN74AC373DWRE4	ACTIVE	SOIC	DW	20	2000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AC373	<a href="#">Samples</a>
SN74AC373N	ACTIVE	PDIP	N	20	20	RoHS & Green	NIPDAU	N / A for Pkg Type	-40 to 85	SN74AC373N	<a href="#">Samples</a>
SN74AC373NE4	ACTIVE	PDIP	N	20	20	RoHS & Green	NIPDAU	N / A for Pkg Type	-40 to 85	SN74AC373N	<a href="#">Samples</a>
SN74AC373NSR	ACTIVE	SOP	NS	20	2000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AC373	<a href="#">Samples</a>
SN74AC373PW	OBSOLETE	TSSOP	PW	20		TBD	Call TI	Call TI	-40 to 85	AC373	
SN74AC373PWR	ACTIVE	TSSOP	PW	20	2000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AC373	<a href="#">Samples</a>
SNJ54AC373FK	ACTIVE	LCCC	FK	20	55	Non-RoHS & Green	SNPB	N / A for Pkg Type	-55 to 125	5962-87555012A SNJ54AC 373FK	<a href="#">Samples</a>
SNJ54AC373J	ACTIVE	CDIP	J	20	20	Non-RoHS & Green	SNPB	N / A for Pkg Type	-55 to 125	5962-8755501RA SNJ54AC373J	<a href="#">Samples</a>
SNJ54AC373W	ACTIVE	CFP	W	20	25	Non-RoHS & Green	SNPB	N / A for Pkg Type	-55 to 125	5962-8755501SA SNJ54AC373W	<a href="#">Samples</a>

(1) The marketing status values are defined as follows:

**ACTIVE:** Product device recommended for new designs.

**LIFEBUY:** TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.

**NRND:** Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.

**PREVIEW:** Device has been announced but is not in production. Samples may or may not be available.

**OBSOLETE:** TI has discontinued the production of the device.

(2) **RoHS:** TI defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, "RoHS" products are suitable for use in specified lead-free processes. TI may reference these types of products as "Pb-Free".

**RoHS Exempt:** TI defines "RoHS Exempt" to mean products that contain lead but are compliant with EU RoHS pursuant to a specific EU RoHS exemption.

**Green:** TI defines "Green" to mean the content of Chlorine (Cl) and Bromine (Br) based flame retardants meet JS709B low halogen requirements of  $\leq 1000$ ppm threshold. Antimony trioxide based flame retardants must also meet the  $\leq 1000$ ppm threshold requirement.

(3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

(4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

(6) Lead finish/Ball material - Orderable Devices 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.

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**OTHER QUALIFIED VERSIONS OF SN54AC373, SN54AC373-SP, SN74AC373 :**

● Catalog : [SN74AC373](#), [SN54AC373](#)

● Enhanced Product : [SN74AC373-EP](#), [SN74AC373-EP](#)

● Military : [SN54AC373](#)

- Space : [SN54AC373-SP](#)

NOTE: Qualified Version Definitions:

- Catalog - TI's standard catalog product
- Enhanced Product - Supports Defense, Aerospace and Medical Applications
- 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**

**QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE**


\*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
SN74AC373DBR	SSOP	DB	20	2000	330.0	16.4	8.2	7.5	2.5	12.0	16.0	Q1
SN74AC373DWR	SOIC	DW	20	2000	330.0	24.4	10.9	13.3	2.7	12.0	24.0	Q1
SN74AC373DWR	SOIC	DW	20	2000	330.0	24.4	10.8	13.3	2.7	12.0	24.0	Q1
SN74AC373NSR	SOP	NS	20	2000	330.0	24.4	8.4	13.0	2.5	12.0	24.0	Q1
SN74AC373PWR	TSSOP	PW	20	2000	330.0	16.4	6.95	7.0	1.4	8.0	16.0	Q1
SN74AC373PWR	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)
SN74AC373DBR	SSOP	DB	20	2000	356.0	356.0	35.0
SN74AC373DWR	SOIC	DW	20	2000	356.0	356.0	45.0
SN74AC373DWR	SOIC	DW	20	2000	367.0	367.0	45.0
SN74AC373NSR	SOP	NS	20	2000	367.0	367.0	45.0
SN74AC373PWR	TSSOP	PW	20	2000	353.0	353.0	32.0
SN74AC373PWR	TSSOP	PW	20	2000	356.0	356.0	35.0



**TUBE**


\*All dimensions are nominal

Device	Package Name	Package Type	Pins	SPQ	L (mm)	W (mm)	T (μm)	B (mm)
5962-87555012A	FK	LCCC	20	55	506.98	12.06	2030	NA
5962-8755501SA	W	CFP	20	25	506.98	26.16	6220	NA
5962-8755501VSA	W	CFP	20	25	506.98	26.16	6220	NA
SN74AC373N	N	PDIP	20	20	506	13.97	11230	4.32
SN74AC373NE4	N	PDIP	20	20	506	13.97	11230	4.32
SNJ54AC373FK	FK	LCCC	20	55	506.98	12.06	2030	NA
SNJ54AC373W	W	CFP	20	25	506.98	26.16	6220	NA

W (R-GDFP-F20)

CERAMIC DUAL FLATPACK



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

PW0020A



# PACKAGE OUTLINE

## TSSOP - 1.2 mm max height

SMALL OUTLINE PACKAGE



4220206/A 02/2017

### NOTES:

- All linear dimensions are in millimeters. Any dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
- This drawing is subject to change without notice.
- 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.
- This dimension does not include interlead flash. Interlead flash shall not exceed 0.25 mm per side.
- 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.

# DB0020A



# PACKAGE OUTLINE

## SSOP - 2 mm max height

SMALL OUTLINE PACKAGE



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.

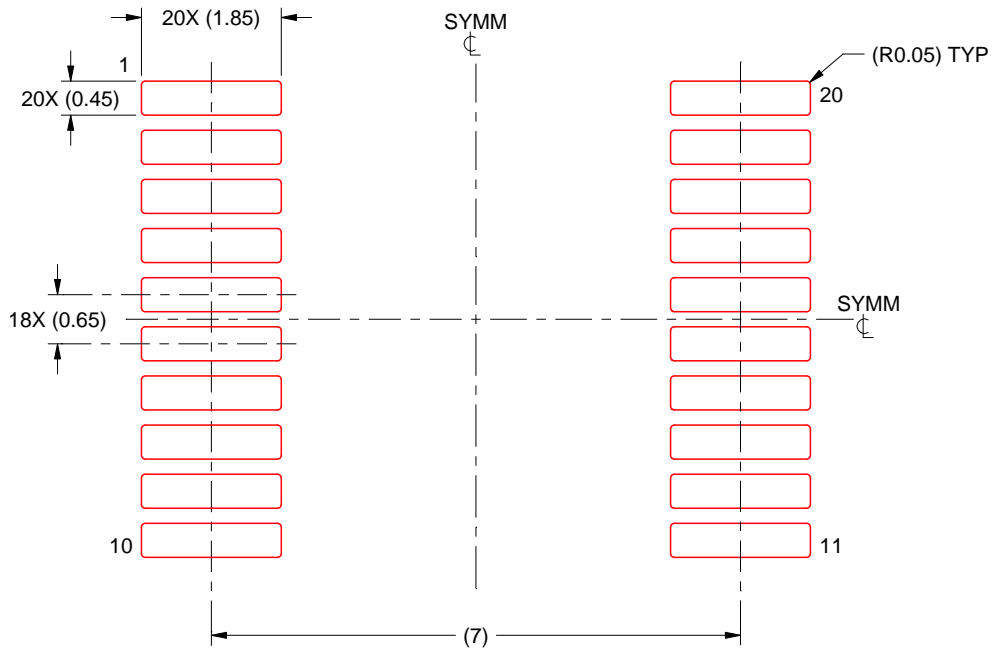


# EXAMPLE STENCIL DESIGN

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



- 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.



## 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\*\*)

PLASTIC DUAL-IN-LINE PACKAGE

16 PINS SHOWN



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

4040049/E 12/2002

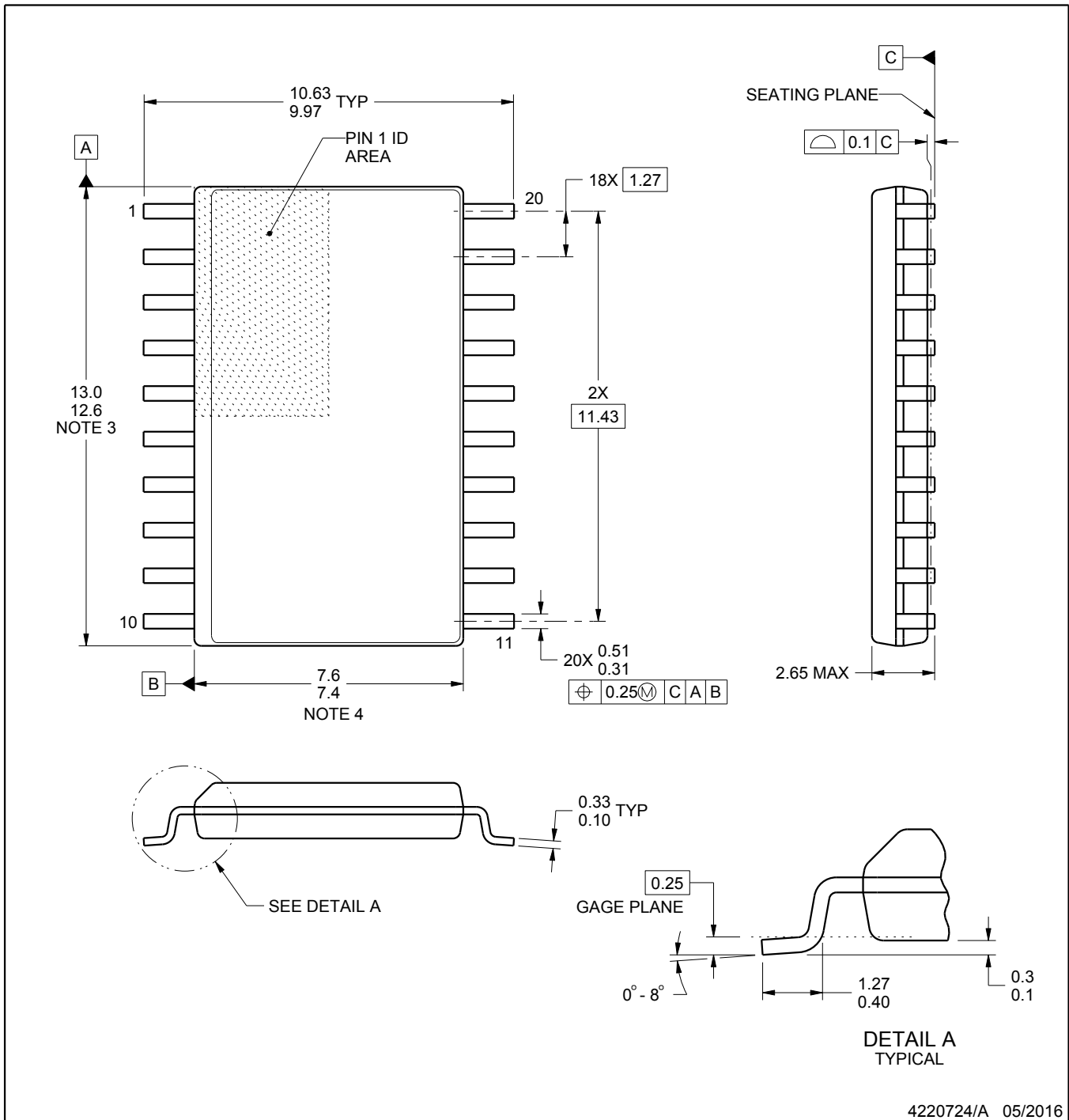
# DW0020A



# PACKAGE OUTLINE

## SOIC - 2.65 mm max height

SOIC



**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.

# EXAMPLE BOARD LAYOUT

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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