SNx4AHC373 具有三态输出的八路透明 D 型锁存器

1 特性

- 工作电压范围为 2V 至 5.5V V_{CC}
- 闩锁性能超过 250mA，符合 JESD 17 规范
- 对于符合 MIL-PRF-38535 标准的产品，所有参数均经过测试，除非另有说明。对于所有其他产品，生产流程不一定包含对所有参数的测试。

2 应用

- 启用或禁用数字信号
- 控制指示灯 LED
- 通信模块和系统控制器之间的转换

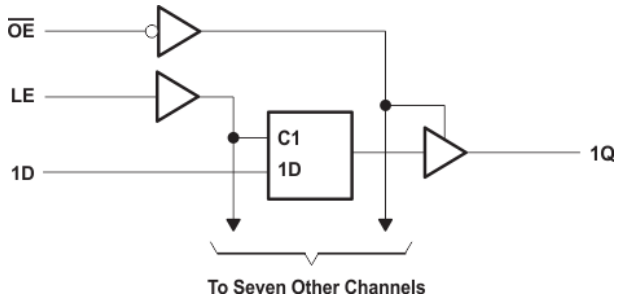
3 说明

SNx4AHC373 器件为八通道透明 D 类锁存器，可在 2V 至 5.5V V_{CC} 下运行。

器件信息

器件型号	封装(1)	封装尺寸(2)	本体尺寸(3)
SNx4AHC373	J（CDIP，20）	24.2mm x 7.62mm	24.2mm x 6.92mm
	W（CFP，20）	13.09mm x 8.13mm	13.09mm x 6.92mm
	FK（LCCC，20）	8.89mm x 8.89mm	8.89mm × 8.89mm
	DB（SSOP，20）	7.2mm × 7.8mm	7.50mm x 5.30mm
	DGV（TVSOP，20）	5.00mm x 6.4mm	5.00mm x 4.40mm
	DW（SOIC，20）	12.80mm × 10.3mm	12.8mm x 7.5mm
	NS（SOP，20）	12.60mm x 7.8mm	12.6mm x 5.30mm
	N（PDIP，20）	24.33mm x 9.4mm	25.40mm x 6.35mm
	PW（TSSOP，20）	6.50mm × 6.4mm	6.50mm x 4.40mm

(1) 如需了解更多信息，请参阅机械、封装和可订购信息。
(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。

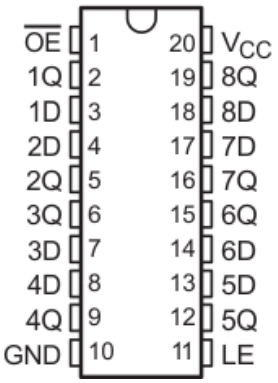


逻辑图（正逻辑）

Table of Contents

4 Pin Configuration and Functions

SN54AHC373 . . . J OR W PACKAGE
SN74AHC373 . . . DB, DGV, DW, N, NS, OR PW PACKAGE
(TOP VIEW)



SN54AHC373 . . . FK PACKAGE
(TOP VIEW)

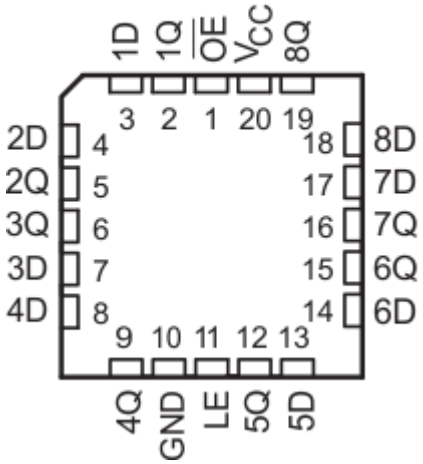


表 4-1. Pin Functions

PIN		I/O	DESCRIPTION
NO.	NAME		
1	$\overline{OE}$	I	Output Enable
2	1Q	O	1Q Output
3	1D	I	1D Input
4	2D	I	2D Input
5	2Q	O	2Q Output
6	3Q	O	3Q Output
7	3D	I	3D Input
8	4D	I	4D Input
9	4Q	O	4Q Output
10	GND	—	Ground
11	LE	I	Latch Enable
12	5Q	O	5Q Output
13	5D	I	5D Input
14	6D	I	6D Input
15	6Q	O	6Q Output
16	7Q	O	7Q Output
17	7D	I	7D Input
18	8D	I	8D Input
19	8Q	O	8Q Output
20	V_{CC}	—	Power Pin

5 Specifications

5.1 Absolute Maximum Ratings

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

			MIN	MAX	UNIT
V_{CC}	Supply voltage range		– 0.5	7	V
V_I	Input voltage range(1)		– 0.5	7	V
V_O	Output voltage range(1)		– 0.5	V_{CC} + 0.5	V
I_{IK}	Input clamp current	V_I < 0		– 20	mA
I_{OK}	Output clamp current	V_O < 0 or V_O > V_{CC}		±20	mA
I_O	Continuous output current	V_O = 0 to V_{CC}		±25	mA
	Continuous current through V_{CC} or GND			±75	mA
T_{stg}	Storage temperature		– 65	150	°C

(1) The input and output voltage ratings may be exceeded if the input and output current ratings are observed.

5.2 ESD Ratings

			Value	UNIT
$V_{(ESD)}$	Electrostatic discharge	Human body model (HBM), per ANSI/ESDA/JEDEC JS-001(1)	±2000	V
		Charged device model (CDM), per JEDEC specification JESD22-C101(2)	±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.

5.3 Recommended Operating Conditions

over operating free-air temperature range (unless otherwise noted)(1)

			SN54AHC373		SN74AHC373		UNIT
			MIN	MAX	MIN	MAX	
V_{CC}	Supply voltage		2	5.5	2	5.5	V
V_{IH}	High-level input voltage	V_{CC} = 2 V	1.5		1.5		V
		V_{CC} = 3 V	2.1		2.1		
		V_{CC} = 5.5 V	3.85		3.85		
V_{IL}	Low-level input voltage	V_{CC} = 2 V		0.5		0.5	V
		V_{CC} = 3 V		0.9		0.9	
		V_{CC} = 5.5 V		1.65		1.65	
V_I	Input voltage		0	5.5	0	5.5	V
V_O	Output voltage		0	V_{CC}	0	V_{CC}	V
I_{OH}	High-level output current	V_{CC} = 2 V		– 50		– 50	µA
		V_{CC} = 3.3 V ± 0.3 V		– 4		– 4	mA
		V_{CC} = 5 V ± 0.5 V		– 8		– 8	
I_{OL}	Low-level output current	V_{CC} = 2 V		50		50	µA
		V_{CC} = 3.3 V ± 0.3 V		4		4	mA
		V_{CC} = 5 V ± 0.5 V		8		8	
$\Delta t/\Delta v$	Input transition rise or fall rate	V_{CC} = 3.3 V ± 0.3 V		100		100	ns/V
		V_{CC} = 5 V ± 0.5 V		20		20	
T_A	Operating free-air temperature		– 55	125	– 40	85	°C

(1) All unused inputs of the device must be held at V_{CC} or GND for proper device operation. Refer to the TI application report, *Implications of Slow or Floating CMOS Inputs* (SCBA004).

5.4 Thermal Information

THERMAL METRIC[1]		SN74AHC373						UNIT
		DW	DB	DGV	N	NS	PW	
		20 PINS						
$R_{\theta JA}$	Junction-to-ambient thermal resistance	58	70	92	69	60	116.8	°C/W

(1) For more information about traditional and new thermal metrics, see the *IC Package Thermal Metrics* application report (SPRA953).

5.5 Electrical Characteristics

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

PARAMETER	TEST CONDITIONS	V_{CC}	T_A = 25°C			SN54AHC373		SN74AHC373		UNIT
			MIN	TYP	MAX	MIN	MAX	MIN	MAX	
V_{OH}	I_{OH} = −50 µA	2 V	1.9			1.9		1.9		V
		3 V	2.9			2.9		2.9		
		4.5 V	4.4			4.4		4.4		
	I_{OH} = −4 mA	3 V	2.58			2.48		2.48		
	I_{OH} = −8 mA	4.5 V	3.94			3.8		3.8		
V_{OL}	I_{OL} = 50 µA	2 V			0.1		0.1		0.1	V
		3 V			0.1		0.1		0.1	
		4.5 V			0.1		0.1		0.1	
	I_{OL} = 4 mA	3 V			0.36		0.5		0.44	
	I_{OL} = 8 mA	4.5 V			0.36		0.5		0.44	
I_I	V_I = 5.5 V or GND	0 V to 5.5 V			±0.1		±1[1]		±1	µA
I_{OZ}	$V_I = V_{IH}$ or V_{IL}, $V_O = V_{CC}$ or GND	5.5 V			±0.25		±2.5		±2.5	µA
I_{CC}	$V_I = V_{CC}$ or GND, I_O = 0	5.5 V			4		40		40	µA
C_i	$V_I = V_{CC}$ or GND	5 V		4	10				10	pF
C_o	$V_O = V_{CC}$ or GND	5 V		6						pF

(1) On products compliant to MIL-PRF-38535, this parameter is not production tested at V_{CC} = 0 V.

5.6 Timing Requirements, V_{CC} = 3.3 V ± 0.3 V

over recommended operating free-air temperature range (unless otherwise noted) (see Load Circuit and Voltage Waveforms)

PARAMETER		T_A = 25°C		SN54AHC373		SN74AHC373		UNIT
		MIN	MAX	MIN	MAX	MIN	MAX	
t_w	Pulse duration, LE high	5		5		5		ns
t_{su}	Setup time, data before LE ↓	4		4		4		ns
t_h	Hold time, data after LE ↓	1		1		1		ns

5.7 Timing Requirements, V_{CC} = 5 V ± 0.5 V

over recommended operating free-air temperature range (unless otherwise noted) (see Load Circuit and Voltage Waveforms)

PARAMETER		T_A = 25°C		SN54AHC373		SN74AHC373		UNIT
		MIN	MAX	MIN	MAX	MIN	MAX	
t_w	Pulse duration, LE high	5		5		5		ns
t_{su}	Setup time, data before LE ↓	4		4		4		ns
t_h	Hold time, data after LE ↓	1		1		1		ns

5.8 Switching Characteristics, V_{CC} = 3.3 V ± 0.3 V

over recommended operating free-air temperature range (unless otherwise noted) (see Load Circuit and Voltage Waveforms)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	LOAD CAPACITANCE	T_A = 25°C		SN54AHC373		SN74AHC373		UNIT
				TYP	MAX	MIN	MAX	MIN	MAX	
t_{PLH}	D	Q	C_L = 15 pF	7.3(1)	11.4(1)	1(1)	13.5(1)	1	13.5	ns
t_{PHL}				7.3(1)	11.4(1)	1(1)	13.5(1)	1	13.5	
t_{PLH}	LE	Q	C_L = 15 pF	7(1)	11(1)	1(1)	13(1)	1	13	ns
t_{PHL}				7(1)	11(1)	1(1)	13(1)	1	13	
t_{PZH}	$\overline{OE}$	Q	C_L = 15 pF	7.3(1)	11.4(1)	1(1)	13.5(1)	1	13.5	ns
t_{PZL}				7.3(1)	11.4(1)	1(1)	13.5(1)	1	13.5	
t_{PHZ}	$\overline{OE}$	Q	C_L = 15 pF	7(1)	10(1)	1(1)	12(1)	1	12	ns
t_{PLZ}				7(1)	10(1)	1(1)	12(1)	1	12	
t_{PLH}	D	Q	C_L = 50 pF	9.8	14.9	1	17	1	17	ns
t_{PHL}				9.8	14.9	1	17	1	17	
t_{PLH}	LE	Q	C_L = 50 pF	9.5	14.5	1	16.5	1	16.5	ns
t_{PHL}				9.5	14.5	1	16.5	1	16.5	
t_{PZH}	$\overline{OE}$	Q	C_L = 50 pF	9.8	14.9	1	17	1	17	ns
t_{PZL}				9.8	14.9	1	17	1	17	
t_{PHZ}	$\overline{OE}$	Q	C_L = 50 pF	9.5	13.2	1	15	1	15	ns
t_{PLZ}				9.5	13.2	1	15	1	15	
$t_{sk(o)}$			C_L = 50 pF		1.5(2)				1.5	ns

(1) On products compliant to MIL-PRF-38535, this parameter is not production tested.
(2) On products compliant to MIL-PRF-38535, this parameter does not apply.

5.9 Switching Characteristics, V_{CC} = 5 V ± 0.5 V

over recommended operating free-air temperature range (unless otherwise noted) (see Load Circuit and Voltage Waveforms)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	LOAD CAPACITANCE	T_A = 25°C		SN54AHC373		SN74AHC373		UNIT
				TYP	MAX	MIN	MAX	MIN	MAX	
t_{PLH}	D	Q	C_L = 15 pF	5(1)	7.2(1)	1(1)	8.5(1)	1	8.5	ns
t_{PHL}				5(1)	7.2(1)	1(1)	8.5(1)	1	8.5	
t_{PLH}	LE	Q	C_L = 15 pF	4.9(1)	7.2(1)	1(1)	8.5(1)	1	8.5	ns
t_{PHL}				4.9(1)	7.2(1)	1(1)	8.5(1)	1	8.5	
t_{PZH}	$\overline{OE}$	Q	C_L = 15 pF	5.5(1)	8.1(1)	1(1)	9.5(1)	1	9.5	ns
t_{PZL}				5.5(1)	8.1(1)	1(1)	9.5(1)	1	9.5	
t_{PHZ}	$\overline{OE}$	Q	C_L = 15 pF	5(1)	7.2(1)	1(1)	8.5(1)	1	8.5	ns
t_{PLZ}				5(1)	7.2(1)	1(1)	8.5(1)	1	8.5	
t_{PLH}	D	Q	C_L = 50 pF	6.5	9.2	1	10.5	1	10.5	ns
t_{PHL}				6.5	9.2	1	10.5	1	10.5	
t_{PLH}	LE	Q	C_L = 50 pF	6.4	9.2	1	10.5	1	10.5	ns
t_{PHL}				6.4	9.2	1	10.5	1	10.5	
t_{PZH}	$\overline{OE}$	Q	C_L = 50 pF	7	10.1	1	11.5	1	11.5	ns
t_{PZL}				7	10.1	1	11.5	1	11.5	
t_{PHZ}	$\overline{OE}$	Q	C_L = 50 pF	6.5	9.2	1	10.5	1	10.5	ns
t_{PLZ}				6.5	9.2	1	10.5	1	10.5	
$t_{sk(o)}$			C_L = 50 pF		1(2)				1	ns

(1) On products compliant to MIL-PRF-38535, this parameter is not production tested.
(2) On products compliant to MIL-PRF-38535, this parameter does not apply.

5.10 Noise Characteristics

V_{CC} = 5 V, C_L = 50 pF, T_A = 25°C(1)

PARAMETER		SN74AHC373		UNIT
		MIN	MAX	
$V_{OL(P)}$	Quiet output, maximum dynamic V_{OL}		0.8	V
$V_{OL(V)}$	Quiet output, minimum dynamic V_{OL}		–0.8	V
$V_{OH(V)}$	Quiet output, minimum dynamic V_{OH}	4.1		V
$V_{IH(D)}$	High-level dynamic input voltage	3.5		V
$V_{IL(D)}$	Low-level dynamic input voltage		1.5	V

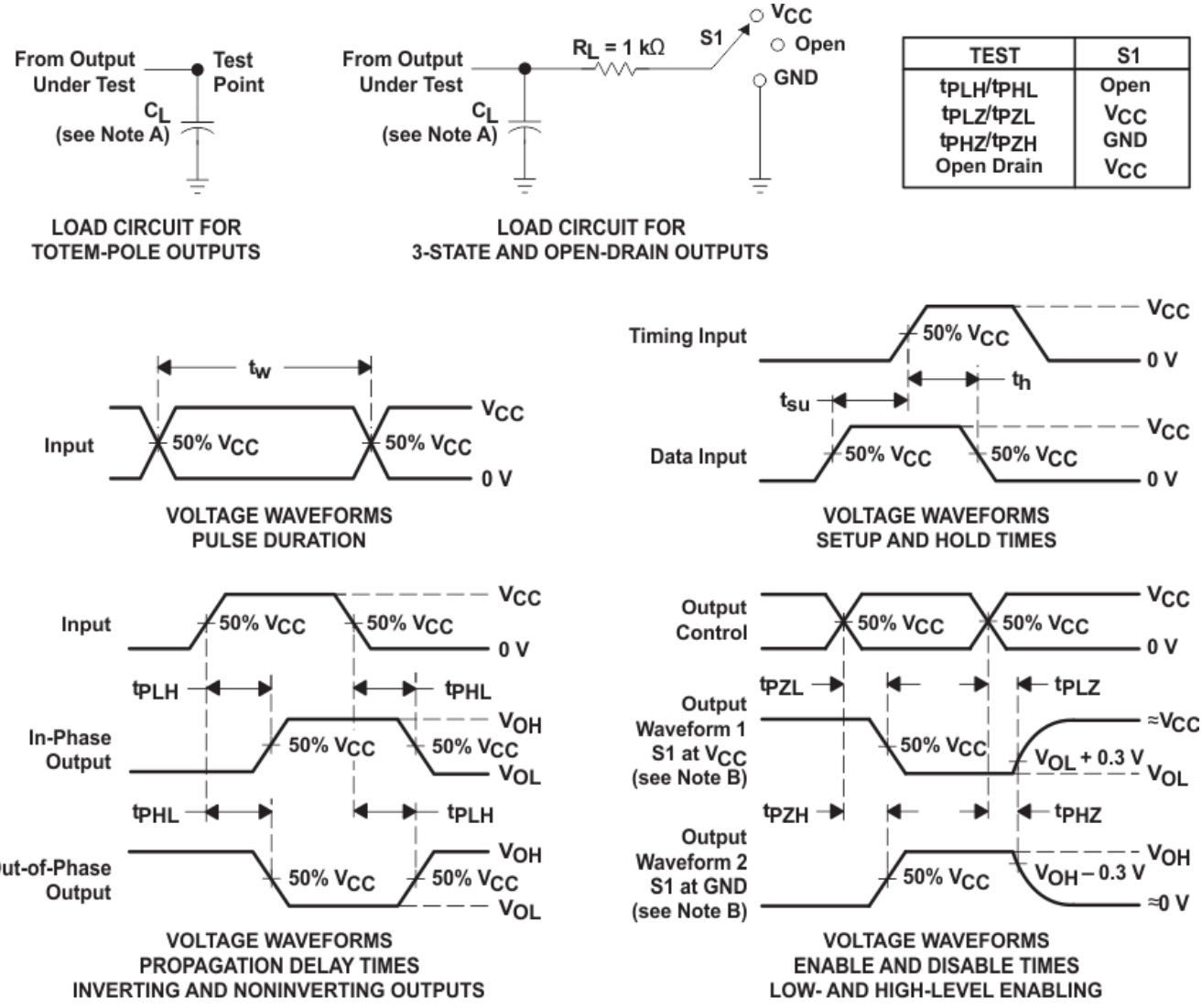
(1) Characteristics are for surface-mount packages only.

5.11 Operating Characteristics

V_{CC} = 5 V, T_A = 25°C

PARAMETER		TEST CONDITIONS		TYP	UNIT
C_{pd}	Power dissipation capacitance	No load,	f = 1 MHz	18	pF

6 Parameter Measurement Information



NOTES: 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 ≤ 1 MHz, Z_O = 50 Ω, t_r ≤ 3 ns, t_f ≤ 3 ns.
D. The outputs are measured one at a time with one input transition per measurement.
E. All parameters and waveforms are not applicable to all devices.

图 6-1. Load Circuit and Voltage Waveforms

7 Detailed Description

7.1 Overview

When the latch-enable (LE) input is high, the Q outputs follow the data (D) inputs. When LE is low, the Q outputs are latched at the logic levels of 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) or the high-impedance state. In the high-impedance state, the outputs neither load nor drive the bus lines significantly. The high-impedance state and increased drive provide the capability to drive bus lines without interface or pullup components.

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

For the 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.

7.2 Functional Block Diagram

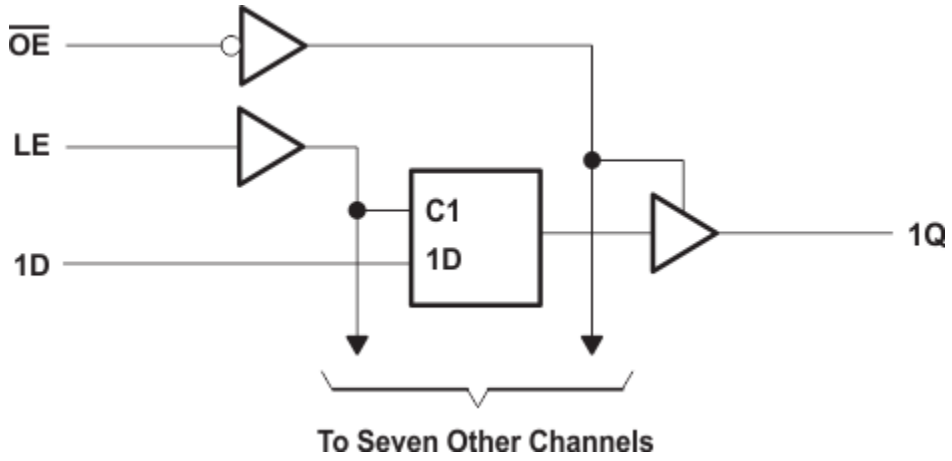


图 7-1. Logic Diagram (Positive Logic)

7.3 Device Functional Modes

表 7-1. 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

8 Application and Implementation

8.1 Power Supply Recommendations

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

8.2 Layout

8.2.1 Layout Guidelines

When using multiple-input and multiple-channel logic devices, inputs must never be left floating. In many cases, functions or parts of functions of digital logic devices are unused (for example, when only two inputs of a triple-input AND gate are used or only 3 of the 4 buffer gates are used). Such unused input pins must not be left unconnected because the undefined voltages at the outside connections result in undefined operational states. All unused inputs of digital logic devices must be connected to a logic high or logic low voltage, as defined by the input voltage specifications, to prevent them from floating. The logic level that must be applied to any particular unused input depends on the function of the device. Generally, the inputs are tied to GND or V_{CC}, whichever makes more sense for the logic function or is more convenient.

8.2.1.1 Layout Example

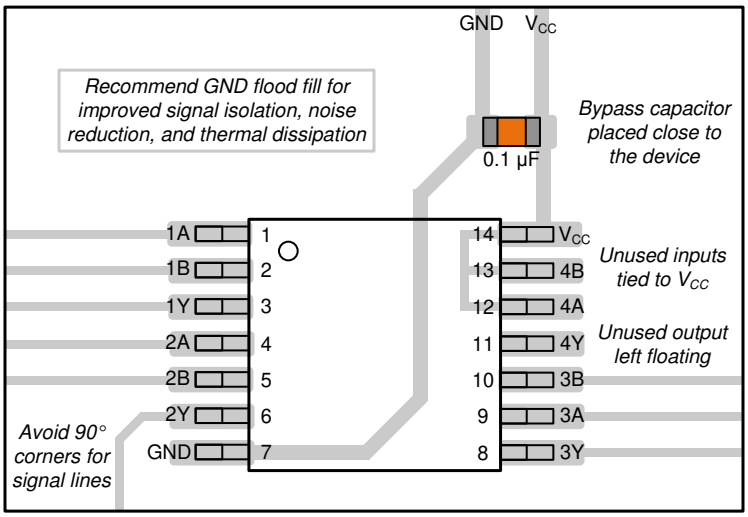


图 8-1. Example Layout for the SN74AHC373

9 Device and Documentation Support

9.1 Documentation Support

9.1.1 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 9-1. Related Links

PARTS	PRODUCT FOLDER	SAMPLE & BUY	TECHNICAL DOCUMENTS	TOOLS & SOFTWARE	SUPPORT & COMMUNITY
SN54AHC373	Click here	Click here	Click here	Click here	Click here
SN74AHC373	Click here	Click here	Click here	Click here	Click here

9.2 接收文档更新通知

要接收文档更新通知，请导航至 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。

9.3 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。

9.4 Trademarks

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

9.5 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。

9.6 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。

10 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 J (August 2023) to Revision K (July 2024)	Page
• Updated R θ JA values: PW = 83 to 116.8, all values in °C/W	5

Changes from Revision I (July 2003) to Revision J (August 2023)	Page
• 添加了*应用*、*封装信息* 表、*引脚功能* 表、*ESD 等级* 表、*热性能信息* 表、*器件功能模式*、*应用和实施* 部分、*器件和文档支持* 部分以及*封装和可订购信息* 部分	1

11 Mechanical, Packaging, and Orderable Information

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

PACKAGING INFORMATION

Orderable 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
5962-9686601Q2A	ACTIVE	LCCC	FK	20	55	Non-RoHS & Green	SNPB	N / A for Pkg Type	-55 to 125	5962-9686601Q2A SNJ54AHC373FK	Samples
5962-9686601QRA	ACTIVE	CDIP	J	20	20	Non-RoHS & Green	SNPB	N / A for Pkg Type	-55 to 125	5962-9686601QRA SNJ54AHC373J	Samples
5962-9686601QSA	ACTIVE	CFP	W	20	25	Non-RoHS & Green	SNPB	N / A for Pkg Type	-55 to 125	5962-9686601QSA SNJ54AHC373W	Samples
SN74AHC373DBR	ACTIVE	SSOP	DB	20	2000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 85	HA373	Samples
SN74AHC373DGVR	ACTIVE	TVSOP	DGV	20	2000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 85	HA373	Samples
SN74AHC373DW	OBSOLETE	SOIC	DW	20		TBD	Call TI	Call TI	-40 to 85	AHC373	
SN74AHC373DWR	ACTIVE	SOIC	DW	20	2000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AHC373	Samples
SN74AHC373N	ACTIVE	PDIP	N	20	20	RoHS & Green	NIPDAU	N / A for Pkg Type	-40 to 85	SN74AHC373N	Samples
SN74AHC373NSR	ACTIVE	SOP	NS	20	2000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AHC373	Samples
SN74AHC373PW	OBSOLETE	TSSOP	PW	20		TBD	Call TI	Call TI	-40 to 85	HA373	
SN74AHC373PWR	ACTIVE	TSSOP	PW	20	2000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 85	HA373	Samples
SNJ54AHC373FK	ACTIVE	LCCC	FK	20	55	Non-RoHS & Green	SNPB	N / A for Pkg Type	-55 to 125	5962-9686601Q2A SNJ54AHC373FK	Samples
SNJ54AHC373J	ACTIVE	CDIP	J	20	20	Non-RoHS & Green	SNPB	N / A for Pkg Type	-55 to 125	5962-9686601QRA SNJ54AHC373J	Samples
SNJ54AHC373W	ACTIVE	CFP	W	20	25	Non-RoHS & Green	SNPB	N / A for Pkg Type	-55 to 125	5962-9686601QSA SNJ54AHC373W	Samples

(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 <=1000ppm threshold. Antimony trioxide based flame retardants must also meet the <=1000ppm 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.

OTHER QUALIFIED VERSIONS OF SN54AHC373, SN74AHC373 :

- Catalog : SN74AHC373
- Military : SN54AHC373

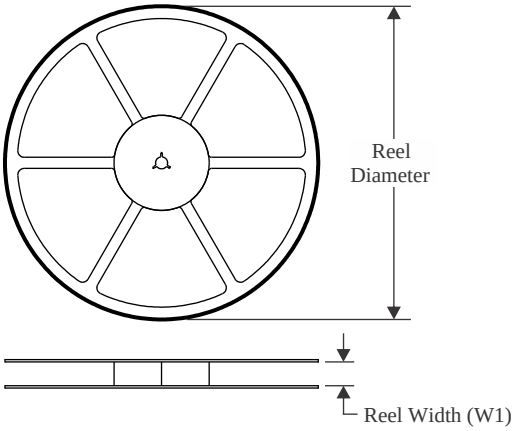
NOTE: Qualified Version Definitions:

- Catalog - TI's standard catalog product

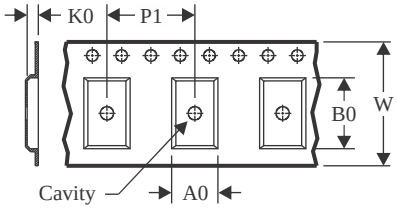
- Military - QML certified for Military and Defense Applications

TAPE AND REEL INFORMATION

REEL DIMENSIONS

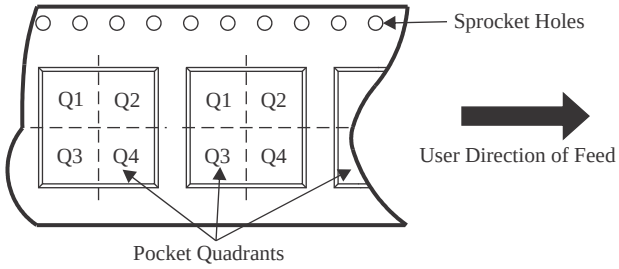


TAPE DIMENSIONS



A0	Dimension designed to accommodate the component width
B0	Dimension designed to accommodate the component length
K0	Dimension designed to accommodate the component thickness
W	Overall width of the carrier tape
P1	Pitch between successive cavity centers

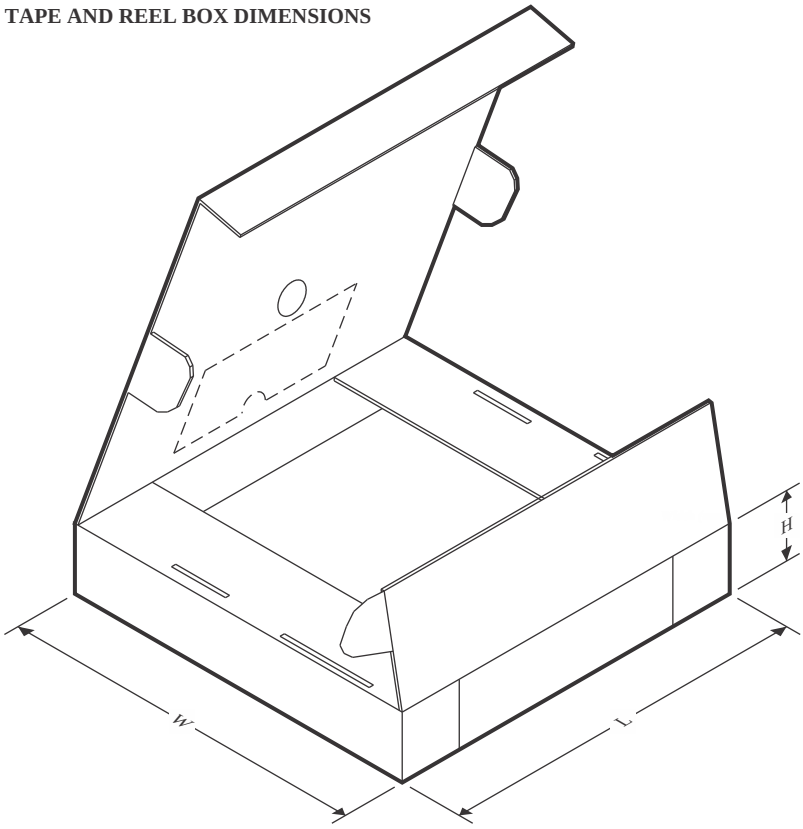
QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



*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
SN74AHC373DBR	SSOP	DB	20	2000	330.0	16.4	8.2	7.5	2.5	12.0	16.0	Q1
SN74AHC373DGVR	TVSOP	DGV	20	2000	330.0	12.4	6.9	5.6	1.6	8.0	12.0	Q1
SN74AHC373DWR	SOIC	DW	20	2000	330.0	24.4	10.8	13.3	2.7	12.0	24.0	Q1
SN74AHC373NSR	SOP	NS	20	2000	330.0	24.4	8.4	13.0	2.5	12.0	24.0	Q1
SN74AHC373PWR	TSSOP	PW	20	2000	330.0	16.4	6.95	7.1	1.6	8.0	16.0	Q1
SN74AHC373PWR	TSSOP	PW	20	2000	330.0	16.4	6.95	7.0	1.4	8.0	16.0	Q1

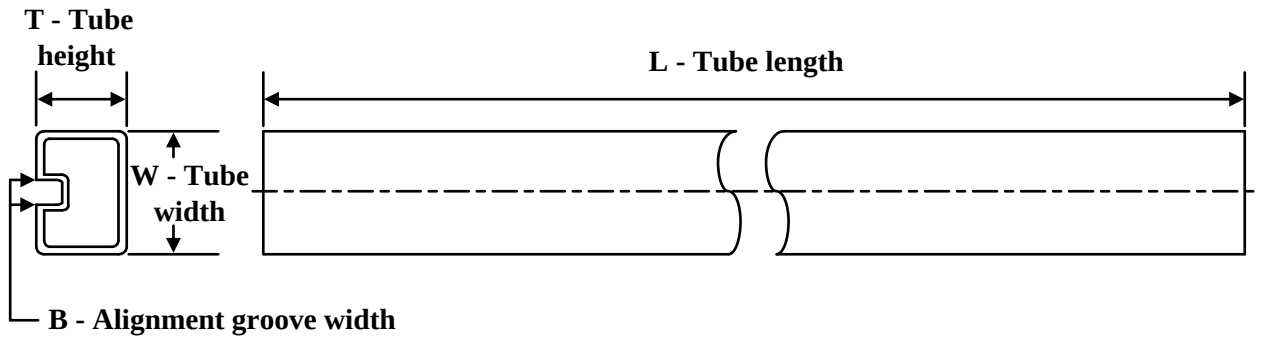
TAPE AND REEL BOX DIMENSIONS



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
SN74AHC373DBR	SSOP	DB	20	2000	356.0	356.0	35.0
SN74AHC373DGVR	TVSOP	DGV	20	2000	356.0	356.0	35.0
SN74AHC373DWR	SOIC	DW	20	2000	367.0	367.0	45.0
SN74AHC373NSR	SOP	NS	20	2000	367.0	367.0	45.0
SN74AHC373PWR	TSSOP	PW	20	2000	356.0	356.0	35.0
SN74AHC373PWR	TSSOP	PW	20	2000	353.0	353.0	32.0

TUBE



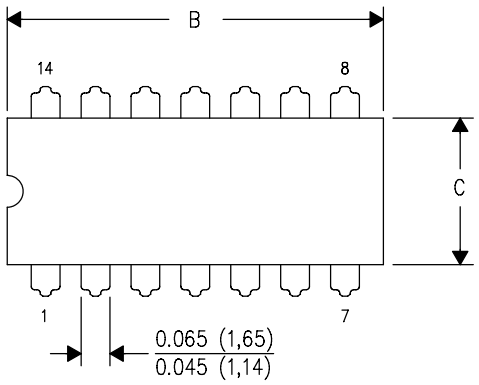
*All dimensions are nominal

Device	Package Name	Package Type	Pins	SPQ	L (mm)	W (mm)	T (µm)	B (mm)
5962-9686601Q2A	FK	LCCC	20	55	506.98	12.06	2030	NA
5962-9686601QSA	W	CFP	20	25	506.98	26.16	6220	NA
SN74AHC373N	N	PDIP	20	20	506	13.97	11230	4.32
SNJ54AHC373FK	FK	LCCC	20	55	506.98	12.06	2030	NA
SNJ54AHC373W	W	CFP	20	25	506.98	26.16	6220	NA

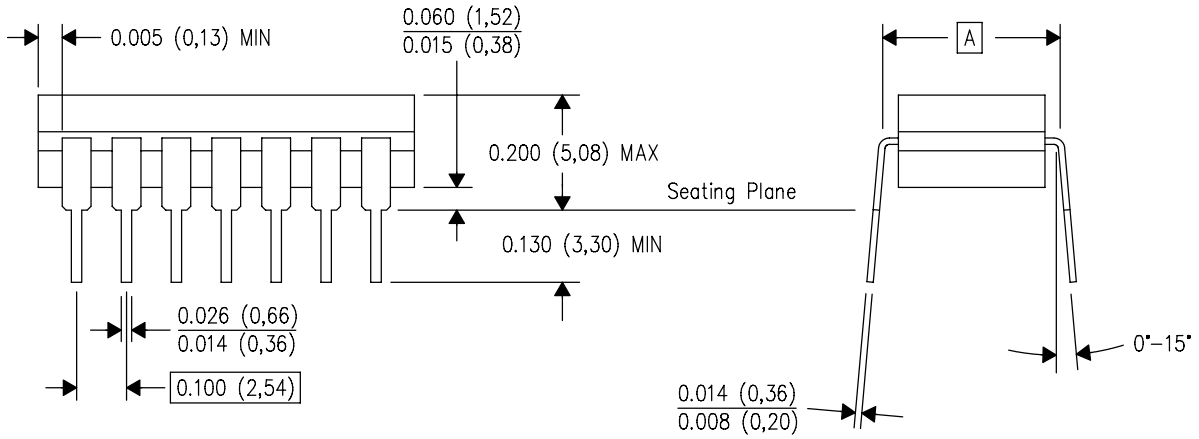
J (R–GDIP–T**)

14 LEADS SHOWN

CERAMIC DUAL IN–LINE PACKAGE



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

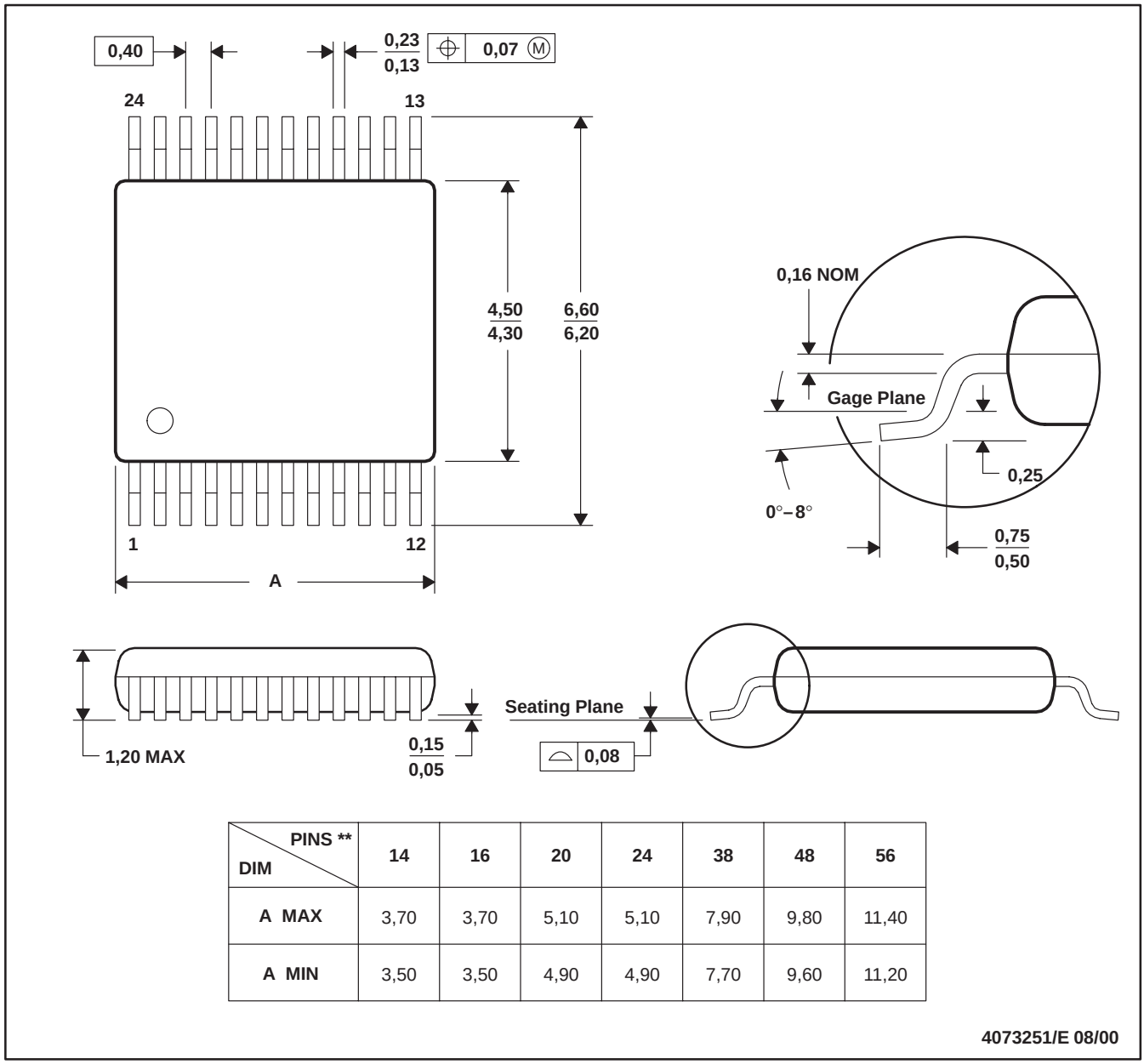


4040083/F 03/03

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.

DGV (R-PDSO-G)** **PLASTIC SMALL-OUTLINE**

24 PINS SHOWN



DIM \ PINS **	14	16	20	24	38	48	56
A MAX	3,70	3,70	5,10	5,10	7,90	9,80	11,40
A MIN	3,50	3,50	4,90	4,90	7,70	9,60	11,20

4073251/E 08/00

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 per side.
D. Falls within JEDEC: 24/48 Pins – MO-153
14/16/20/56 Pins – MO-194

GENERIC PACKAGE VIEW

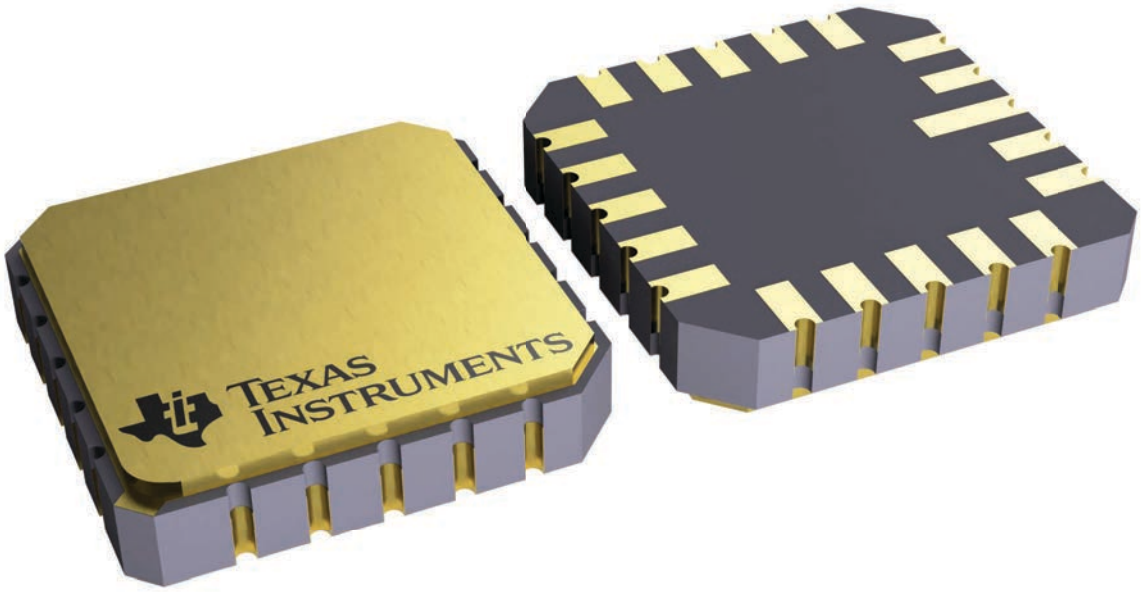
FK 20

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.

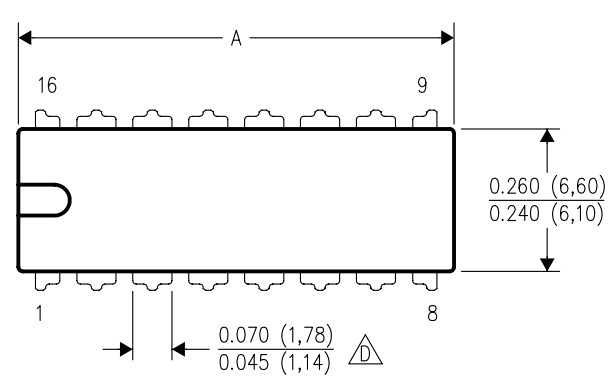


4229370VA\

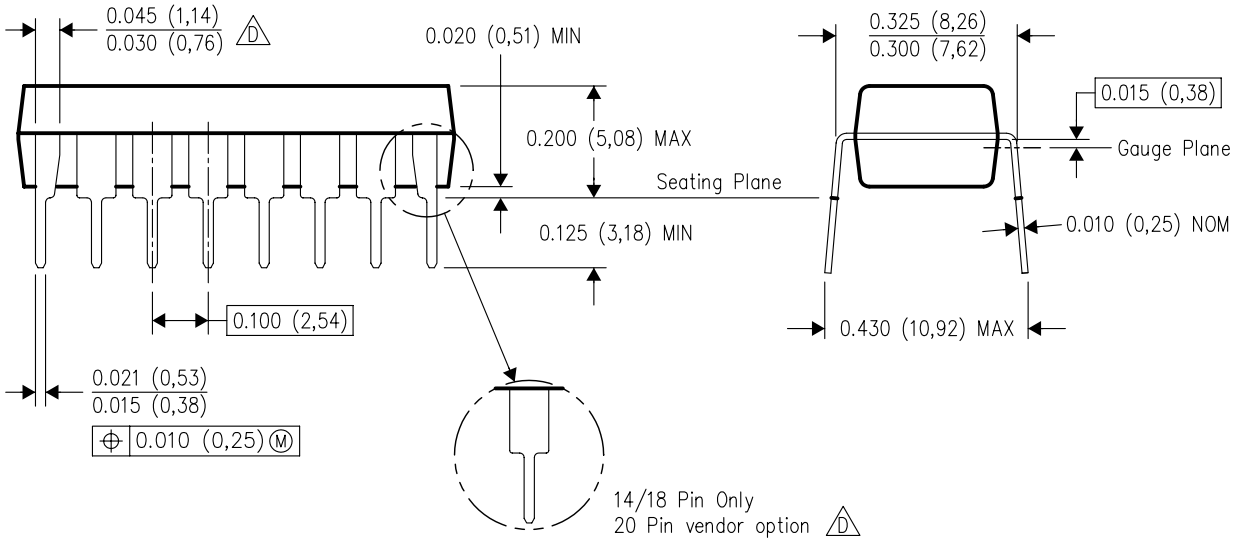
N (R–PDIP–T**)

PLASTIC DUAL–IN–LINE PACKAGE

16 PINS SHOWN

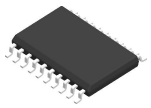


DIM \ PINS **	14	16	18	20
A MAX	0.775 (19,69)	0.775 (19,69)	0.920 (23,37)	1.060 (26,92)
A MIN	0.745 (18,92)	0.745 (18,92)	0.850 (21,59)	0.940 (23,88)
MS–001 VARIATION (C)	AA	BB	AC	AD



4040049/E 12/2002

NOTES:
A. All linear dimensions are in inches (millimeters).
B. This drawing is subject to change without notice.
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.

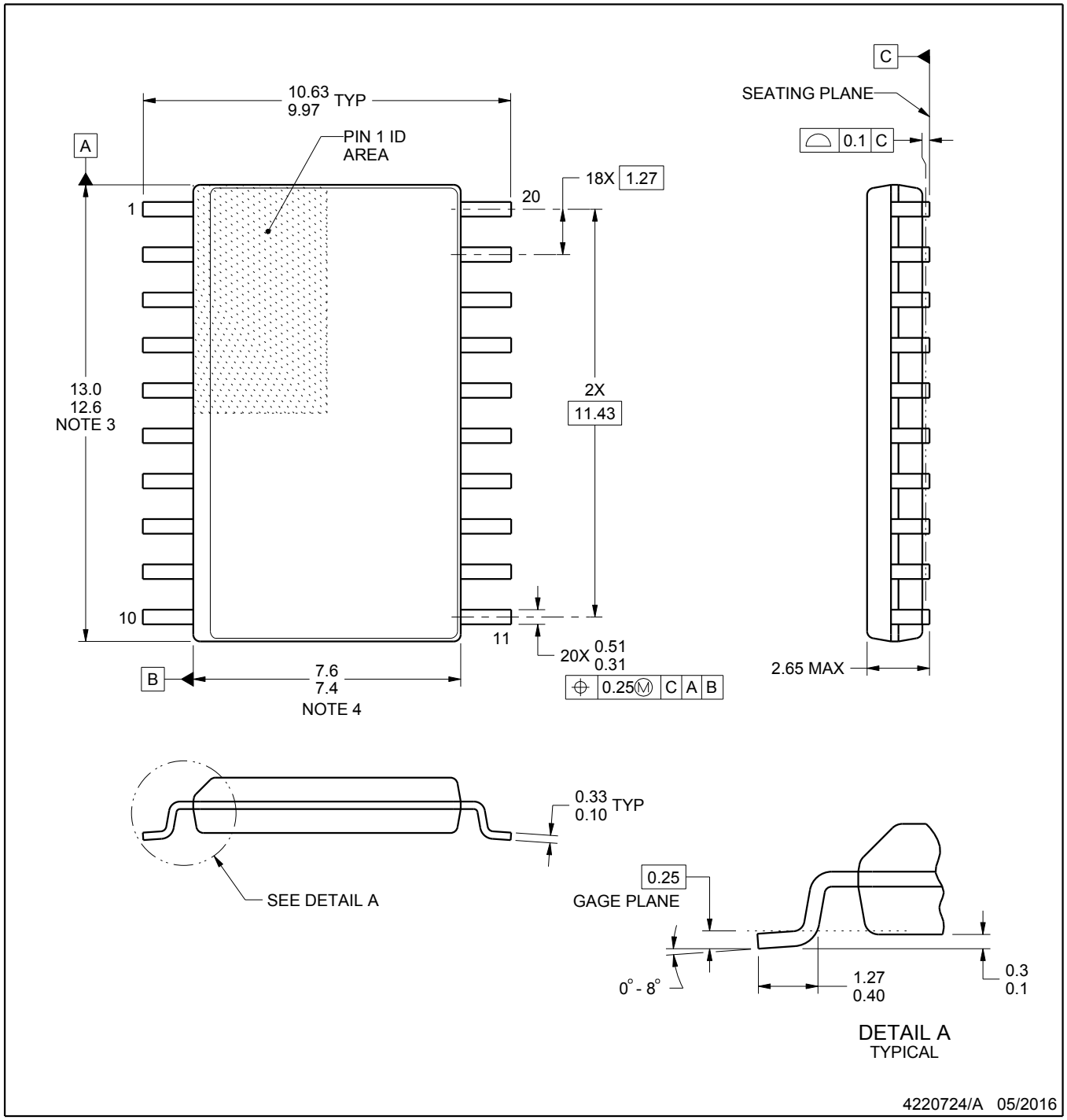


PACKAGE OUTLINE

DW0020A

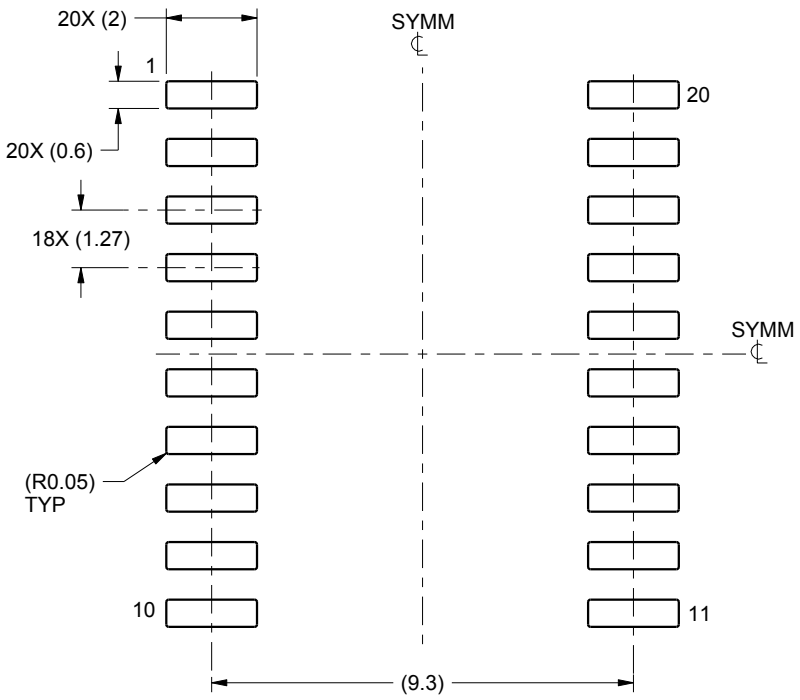
SOIC - 2.65 mm max height

SOIC

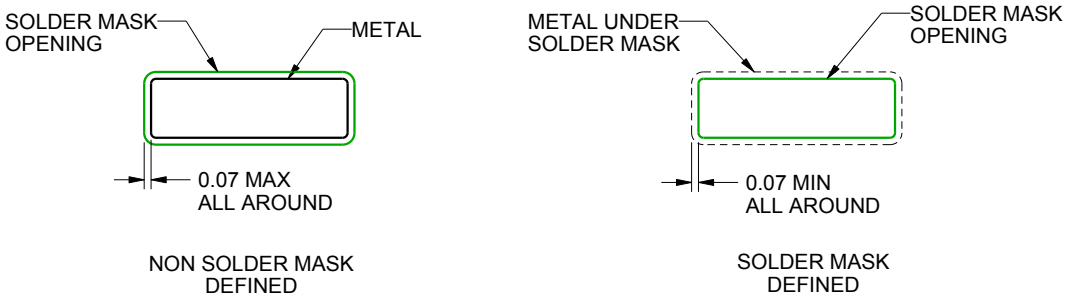


NOTES:

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.



LAND PATTERN EXAMPLE
SCALE:6X

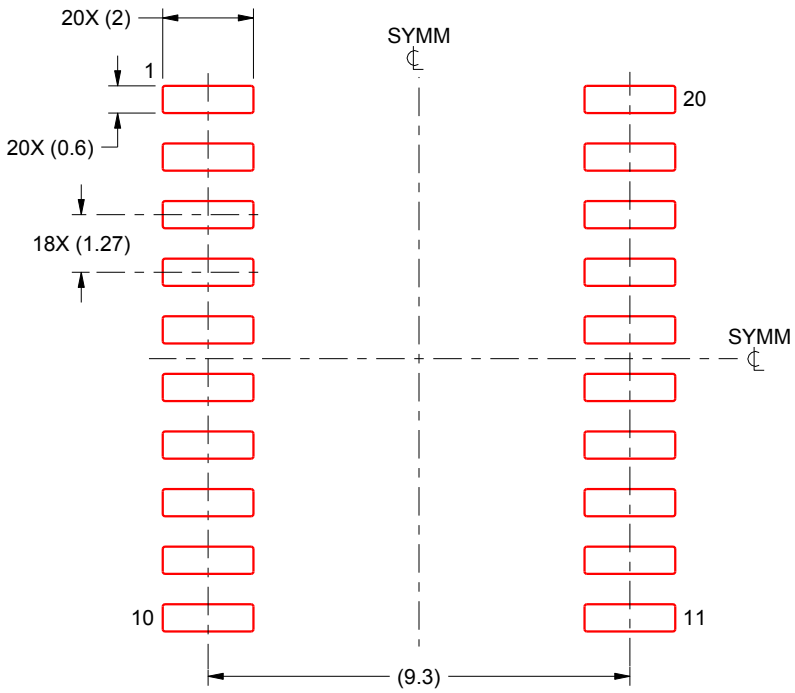


SOLDER MASK DETAILS

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.



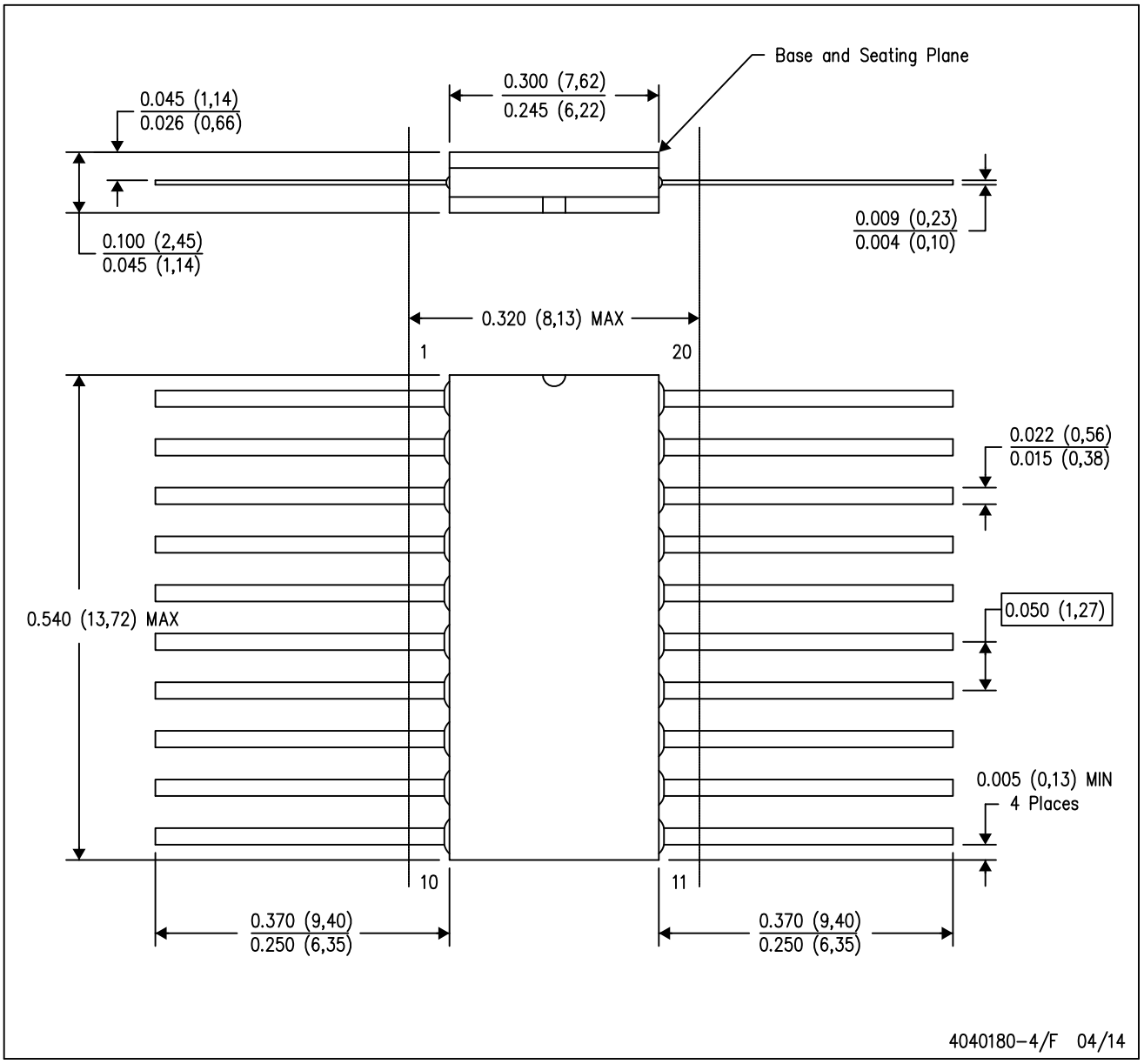
SOLDER PASTE EXAMPLE
BASED ON 0.125 mm THICK STENCIL
SCALE:6X

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.

W (R–GDFP–F20) CERAMIC DUAL FLATPACK



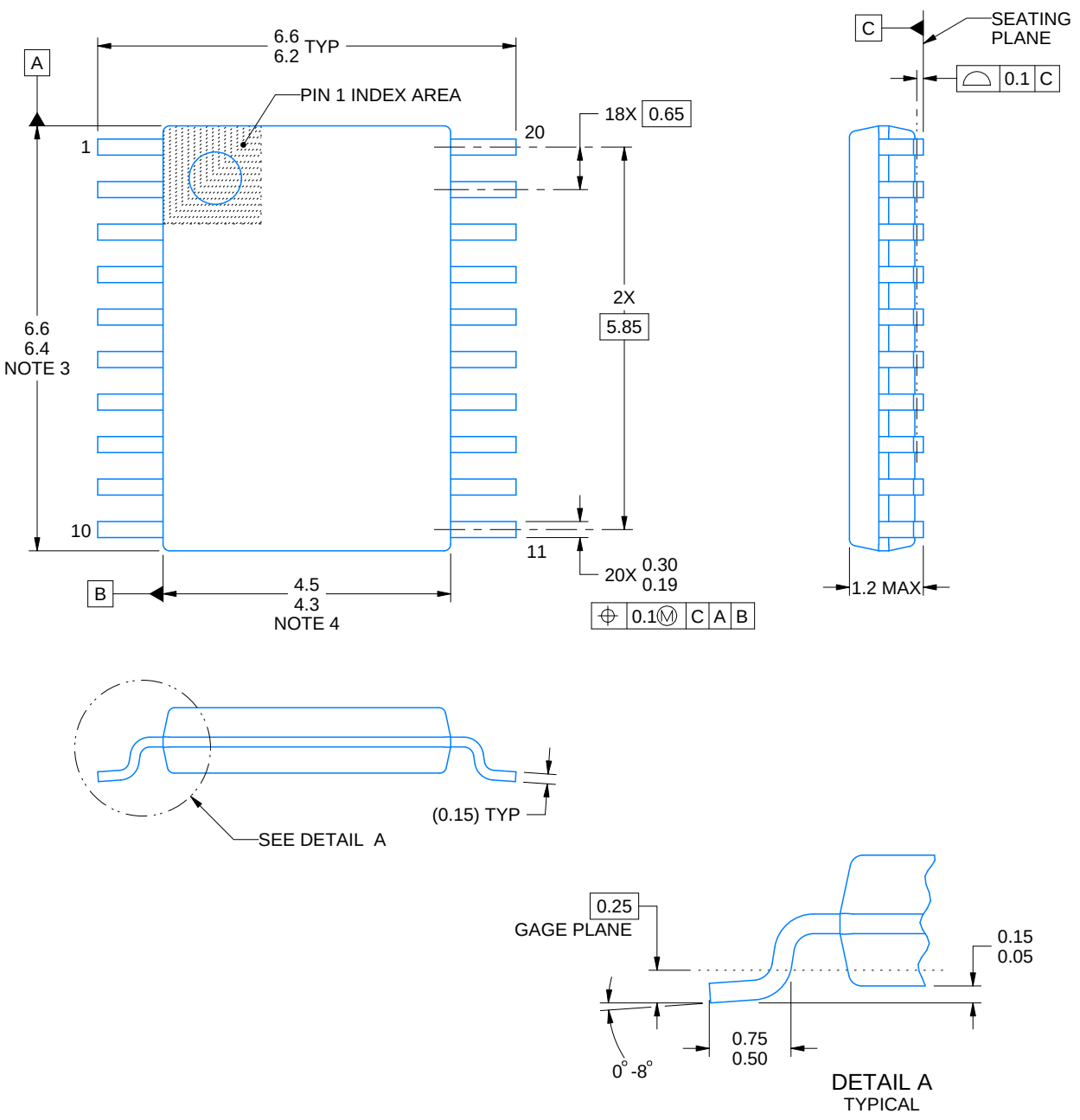
NOTES:
A. All linear dimensions are in inches (millimeters).
B. This drawing is subject to change without notice.
C. This package can be hermetically sealed with a ceramic lid using glass frit.
D. Index point is provided on cap for terminal identification only.
E. Falls within Mil–Std 1835 GDFP2–F20

PACKAGE OUTLINE

PW0020A

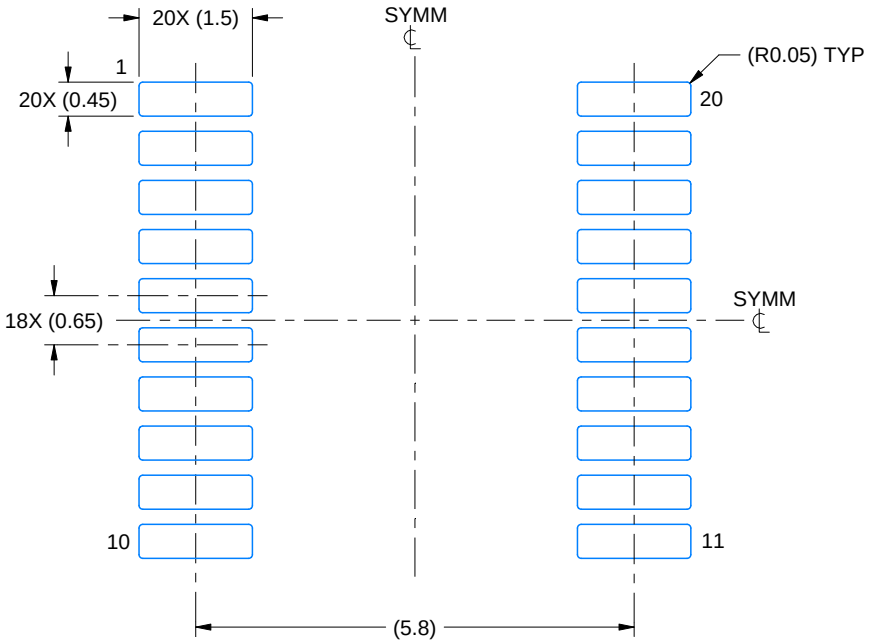
TSSOP - 1.2 mm max height

SMALL OUTLINE PACKAGE



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.



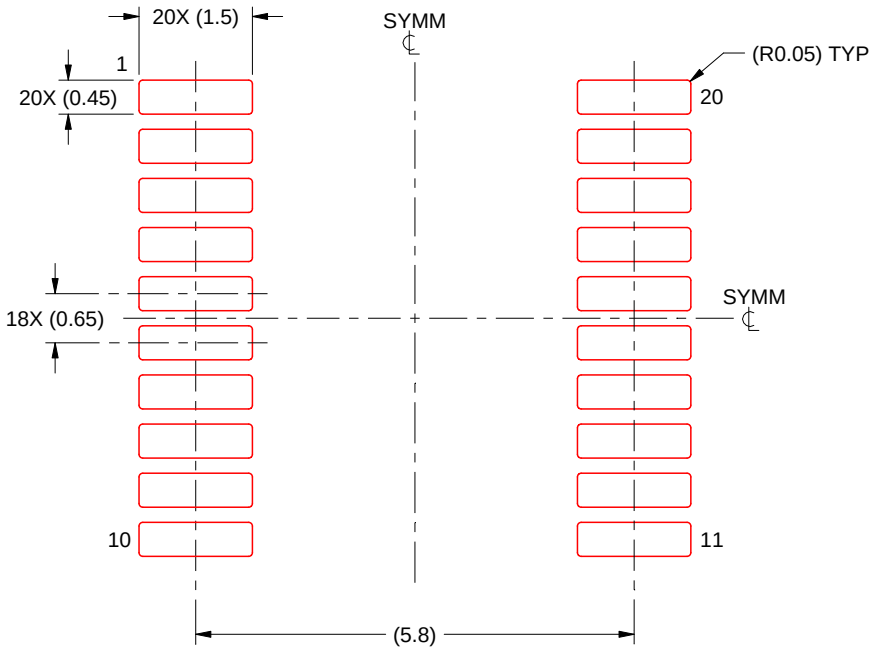
LAND PATTERN EXAMPLE
EXPOSED METAL SHOWN
SCALE: 10X

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.



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

4220206/A 02/2017

NOTES: (continued)

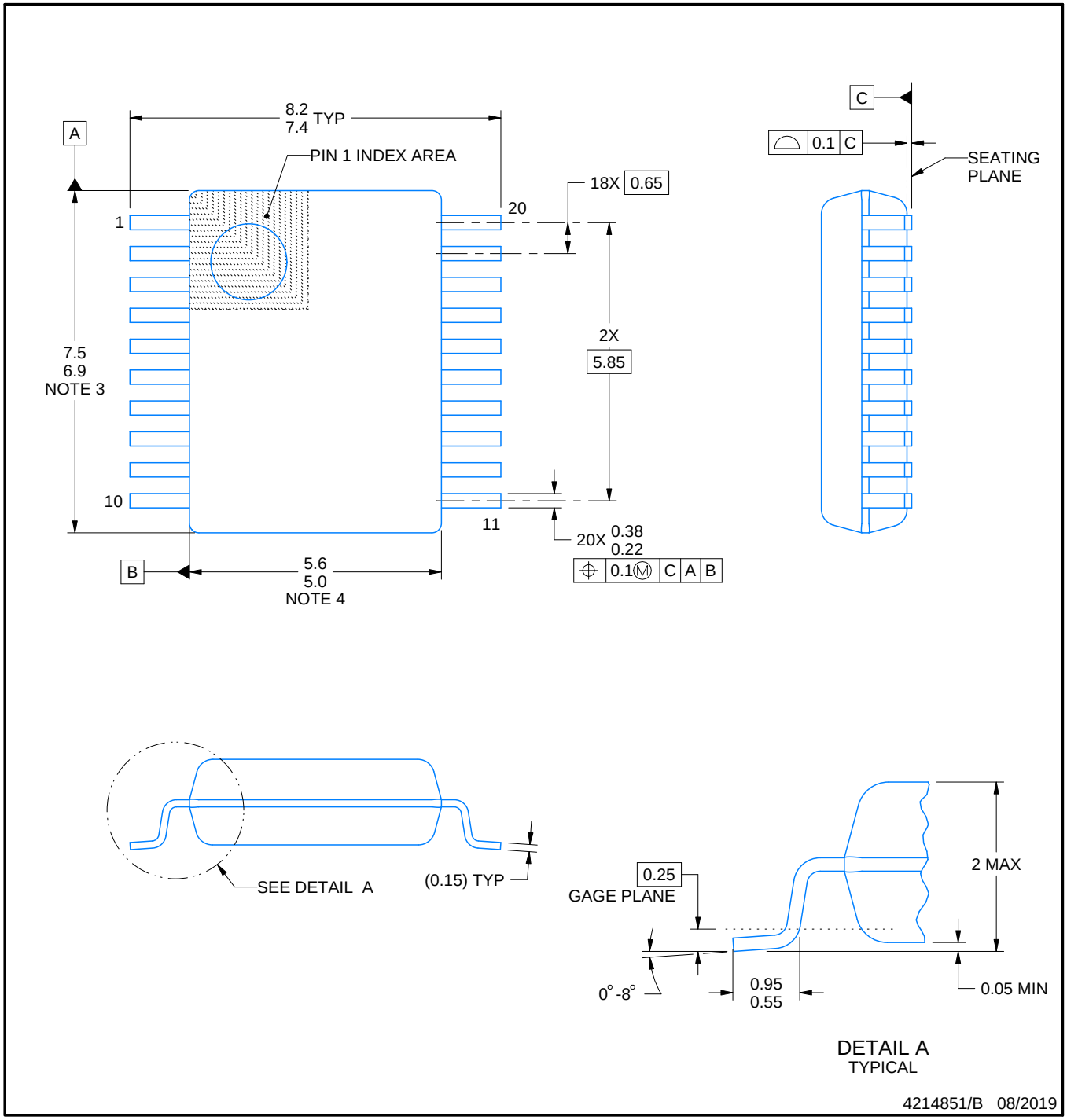
8. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.
9. Board assembly site may have different recommendations for stencil design.

PACKAGE OUTLINE

DB0020A

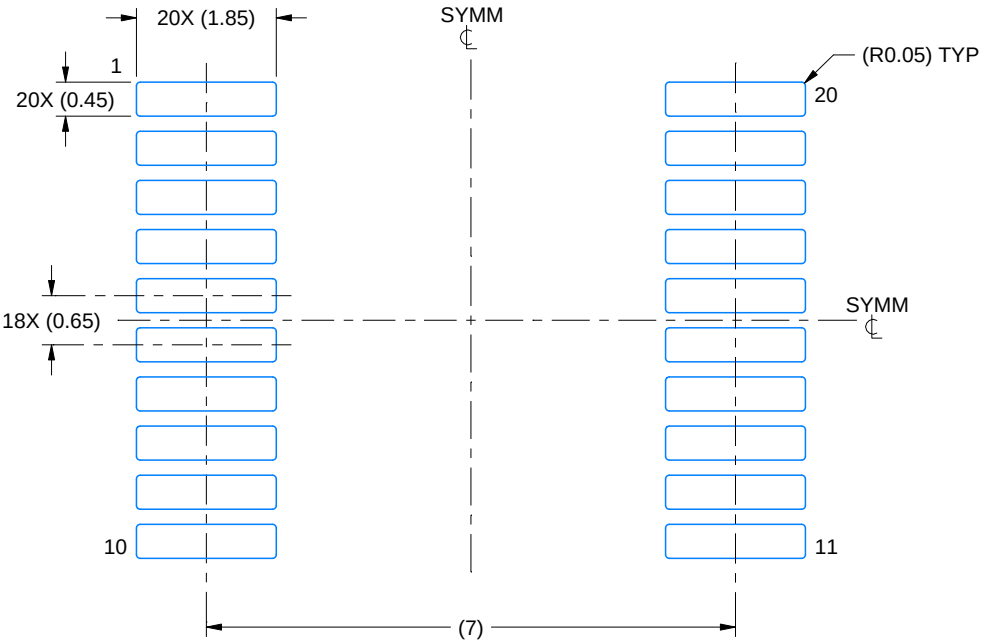
SSOP - 2 mm max height

SMALL OUTLINE PACKAGE

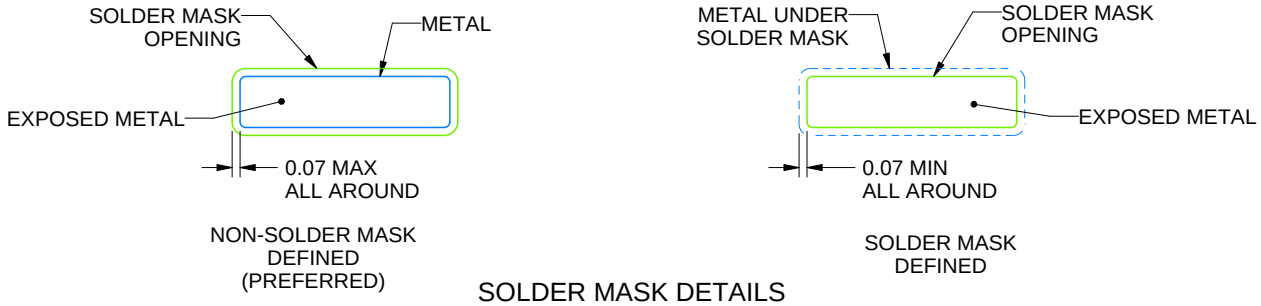


NOTES:

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.



LAND PATTERN EXAMPLE
EXPOSED METAL SHOWN
SCALE: 10X



SOLDER MASK DETAILS

4214851/B 08/2019

NOTES: (continued)

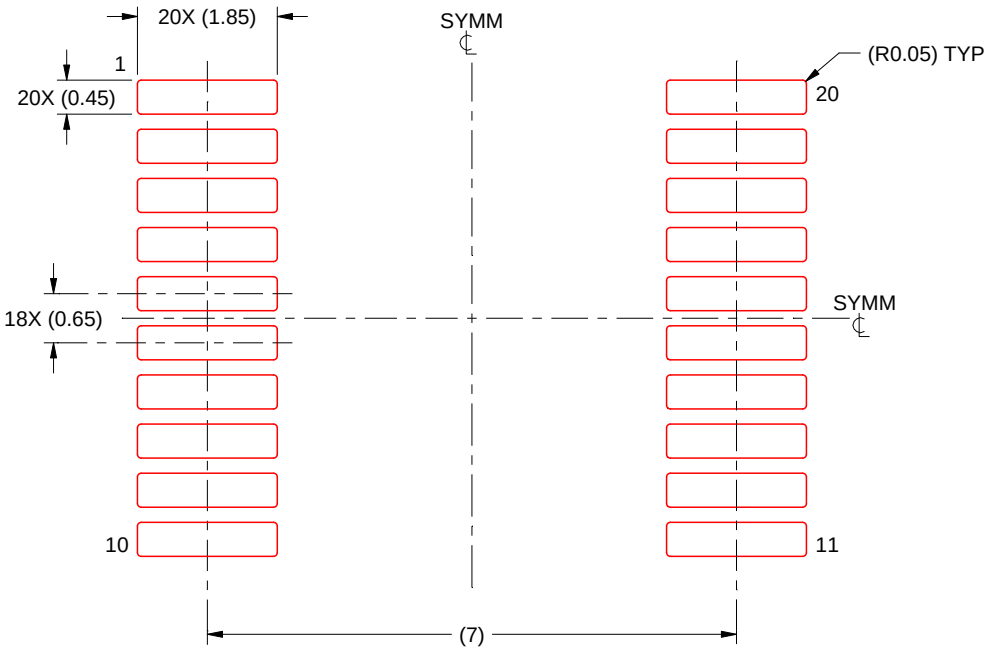
6. Publication IPC-7351 may have alternate designs.
7. Solder mask tolerances between and around signal pads can vary based on board fabrication site.

EXAMPLE STENCIL DESIGN

DB0020A

SSOP - 2 mm max height

SMALL OUTLINE PACKAGE



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

4214851/B 08/2019

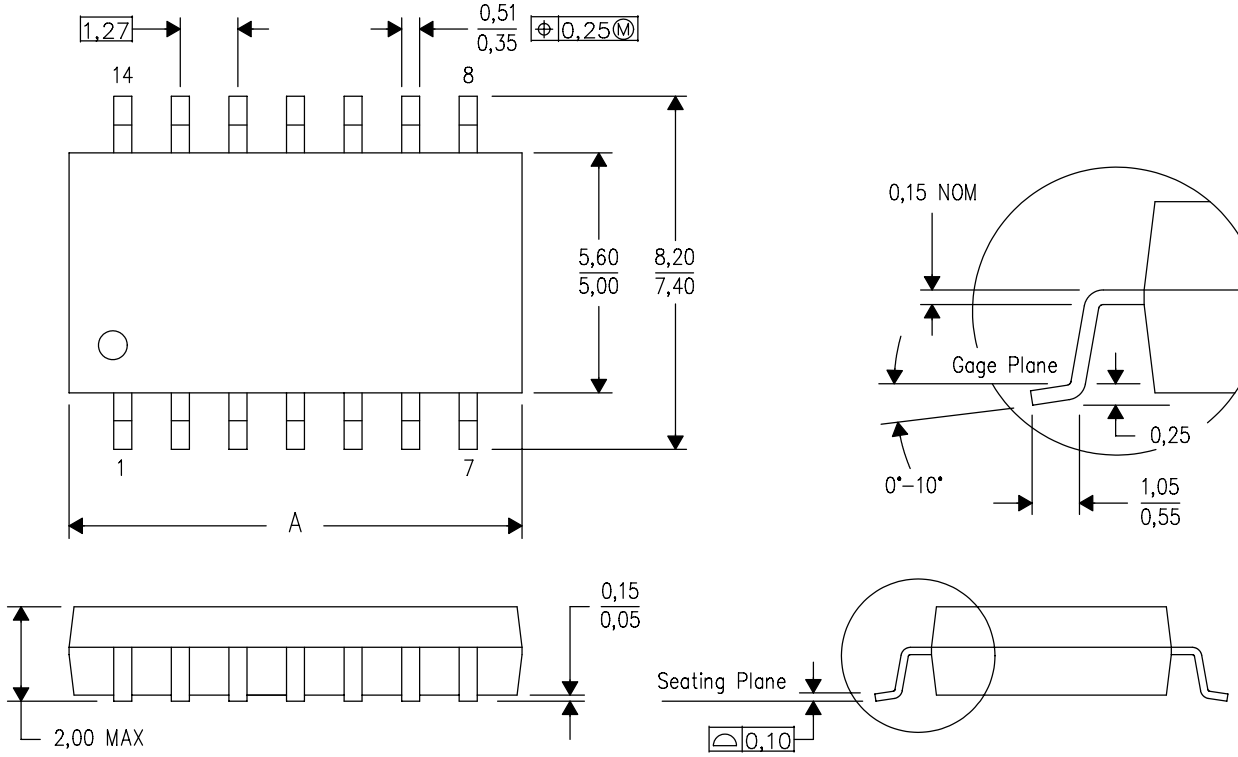
NOTES: (continued)

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

MECHANICAL DATA

NS (R-PDSO-G)** **PLASTIC SMALL-OUTLINE PACKAGE**

14-PINS SHOWN



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

4040062/C 03/03

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

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