

## SN74AHCT1G126 具有三态输出的单路总线缓冲门

### 1 特性

- 工作电压范围为 4.5V 至 5.5V
- 电压为 5V 时， $t_{pd}$  最大值为 6ns
- 低功耗， $I_{CC}$  最大值为 10  $\mu$ A
- 电压为 5V 时，输出驱动为  $\pm 8$ mA
- 输入兼容 TTL 电压
- 闩锁性能超过 250mA，符合 JESD 17 规范

### 2 应用

- 电机控制：交流感应
- 显卡
- 高级驾驶辅助系统 (ADAS)
- 电机驱动&控制
- DLP 正投系统
- 服务器主板

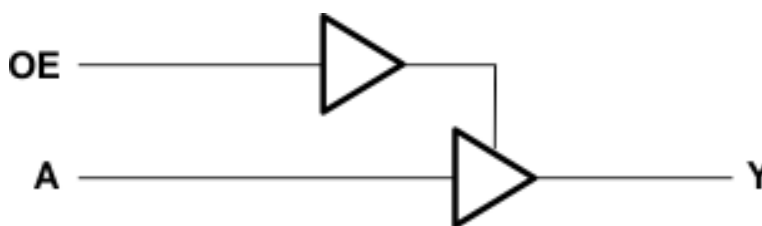
### 3 说明

SN74AHCT1G126 器件是一款具有三态输出的单通道总线缓冲门/线路驱动器。当输出使能 (OE) 输入为低电平时，输出被禁用。当 OE 为高电平时，真实数据从 A 输入流至 Y 输出。

#### 封装信息

器件型号	封装 <sup>(1)</sup>	封装尺寸 <sup>(2)</sup>	本体尺寸 <sup>(3)</sup>
SN74AHCT1G126	DBV ( SOT-23 , 5 )	2.9mm x 2.8mm	2.9mm x 1.6mm
	DCK ( SC-70 , 5 )	2mm x 2.1mm	2mm x 1.25mm

- (1) 如需了解更多信息，请参阅第 11 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。



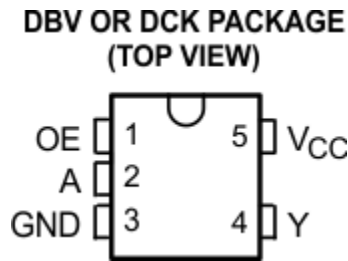
简化原理图



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## 4 Pin Configuration and Functions



PIN		TYPE	DESCRIPTION
NO.	NAME		
1	OE	I	Output Enable
2	A	I	Input A
3	GND	—	Ground Pin
4	Y	O	Output Y
5	V <sub>CC</sub>	—	Power Pin

## 5 Specifications

### 5.1 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
V <sub>I</sub> <sup>(2)</sup>	Input voltage	- 0.5	7	V
V <sub>O</sub> <sup>(2)</sup>	Output voltage	- 0.5	V <sub>CC</sub> + 0.5	V
I <sub>IK</sub>	Input clamp current	(V <sub>I</sub> < 0)	- 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> )	±25	mA
	Continuous channel current through V <sub>CC</sub> or GND		±50	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 [§ 5.3](#) is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.
- (2) The input and output voltage ratings may be exceeded if the input and output current ratings are observed.

### 5.2 ESD Ratings

		VALUE	UNIT
V <sub>(ESD)</sub>	Electrostatic discharge		
	Human body model (HBM), per ANSI/ESDA/JEDEC JS-001, all pins <sup>(1)</sup>	±2000	V
Charged device model (CDM), per JEDEC specification JESD22-C101, all pins <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.

### 5.3 Recommended Operating Conditions

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

		MIN	MAX	UNIT
V <sub>CC</sub>	Supply voltage	4.5	5.5	V
V <sub>IH</sub>	High-level input voltage	2		V
V <sub>IL</sub>	Low-level input voltage		0.8	V
V <sub>I</sub>	Input voltage	0	5.5	V
V <sub>O</sub>	Output voltage	0	V <sub>CC</sub>	V
I <sub>OH</sub>	High-level output current		- 8	mA
I <sub>OL</sub>	Low-level output current		8	mA
Δt/Δv	Input transition rise or fall rate		20	ns/V
T <sub>A</sub>	Operating free-air temperature	- 40	125	°C

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

## 5.4 Thermal Information

THERMAL METRIC <sup>(1)</sup>		SN74AHCT1G126		UNIT
		DBV	DCK	
		5 PINS		
$R_{\theta JA}$	Junction-to-ambient thermal resistance	278	289.2	°C/W
$R_{\theta JC(top)}$	Junction-to-case (top) thermal resistance	180.5	205.8	
$R_{\theta JB}$	Junction-to-board thermal resistance	184.4	176.2	
$\psi_{JT}$	Junction-to-top characterization parameter	115.4	117.6	
$\psi_{JB}$	Junction-to-board characterization parameter	183.4	175.1	
$R_{\theta JC(bot)}$	Junction-to-case (bot) thermal resistance	N/A	N/A	

(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	$V_{CC}$	$T_A = 25^\circ\text{C}$			$-40^\circ\text{C to }85^\circ\text{C}$		$-40^\circ\text{C to }125^\circ\text{C}$		UNIT
			MIN	TYP	MAX	MIN	MAX	MIN	MAX	
$V_{OH}$	$I_{OH} = -50 \mu\text{A}$	4.5 V	4.4	4.5		4.4		4.4	V	
	$I_{OH} = -8 \text{mA}$		3.94			3.8		3.8		
$V_{OL}$	$I_{OL} = 50 \mu\text{A}$	4.5 V			0.1		0.1	0.1	V	
	$I_{OL} = 8 \text{mA}$				0.36		0.44	0.44		
$I_I$	$V_I = 5.5 \text{V or GND}$	0 V to 5.5 V			$\pm 0.1$		$\pm 1$	$\pm 1$	$\mu\text{A}$	
$I_{OZ}$	$V_O = V_{CC} \text{ or GND}$	5.5 V			$\pm 0.25$		$\pm 2.5$	$\pm 2.5$	$\mu\text{A}$	
$I_{CC}$	$V_I = V_{CC} \text{ or GND, } I_O = 0$	5.5 V			1		10	10	$\mu\text{A}$	
$\Delta I_{CC}^{(1)}$	One input at 3.4 V, Other input at $V_{CC}$ or GND	5.5 V			1.35		1.5	1.5	mA	
$C_i$	$V_I = V_{CC} \text{ or GND}$	5 V		4	10		10		pF	
$C_o$	$V_O = V_{CC} \text{ or GND}$	5 V			10				pF	

(1) This is the increase in supply current for each input at one of the specified TTL voltage levels, rather than 0 V or  $V_{CC}$ .

## 5.6 Switching Characteristics

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](#))

PARAMETER	FROM (INPUT)	TO (OUTPUT)	LOAD CAPACITANCE	$T_A = 25^\circ\text{C}$			$-40^\circ\text{C to }85^\circ\text{C}$		$-40^\circ\text{C to }125^\circ\text{C}$		UNIT
				MIN	TYP	MAX	MIN	MAX	MIN	MAX	
$t_{PLH}$	A	Y	$C_L = 15 \text{pF}$	3.8	5.5		1	6.5	1	7	ns
$t_{PHL}$				3.8	5.5		1	6.5	1	7	
$t_{PZH}$	OE	Y	$C_L = 15 \text{pF}$	3.6	5.1		1	6	1	6.5	ns
$t_{PZL}$				3.6	5.1		1	6	1	6.5	
$t_{PHZ}$	OE	Y	$C_L = 15 \text{pF}$	4.6	6.8		1	8	1	8.5	ns
$t_{PLZ}$				4.6	6.8		1	8	1	8.5	
$t_{PLH}$	A	Y	$C_L = 50 \text{pF}$	5.3	7.5		1	8.5	1	9.5	ns
$t_{PHL}$				5.3	7.5		1	8.5	1	9.5	
$t_{PZH}$	OE	Y	$C_L = 50 \text{pF}$	5.1	7.1		1	8	1	9	ns
$t_{PZL}$				5.1	7.1		1	8	1	9	

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 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](#))

PARAMETER	FROM (INPUT)	TO (OUTPUT)	LOAD CAPACITANCE	$T_A = 25^\circ\text{C}$			$-40^\circ\text{C to }85^\circ\text{C}$		$-40^\circ\text{C to }125^\circ\text{C}$		UNIT
				MIN	TYP	MAX	MIN	MAX	MIN	MAX	
$t_{PHZ}$	OE	Y	$C_L = 50\text{ pF}$	6.1	8.8		1	10	1	11	ns
$t_{PLZ}$				6.1	8.8	1	10	1	11		

### 5.7 Operating Characteristics

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

PARAMETER		TEST CONDITIONS	TYP	UNIT
$C_{pd}$	Power dissipation capacitance	No load, $f = 1\text{ MHz}$	14	pF

### 5.8 Typical Characteristics

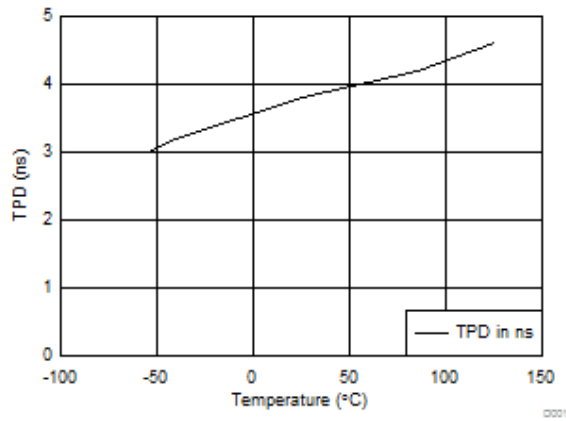
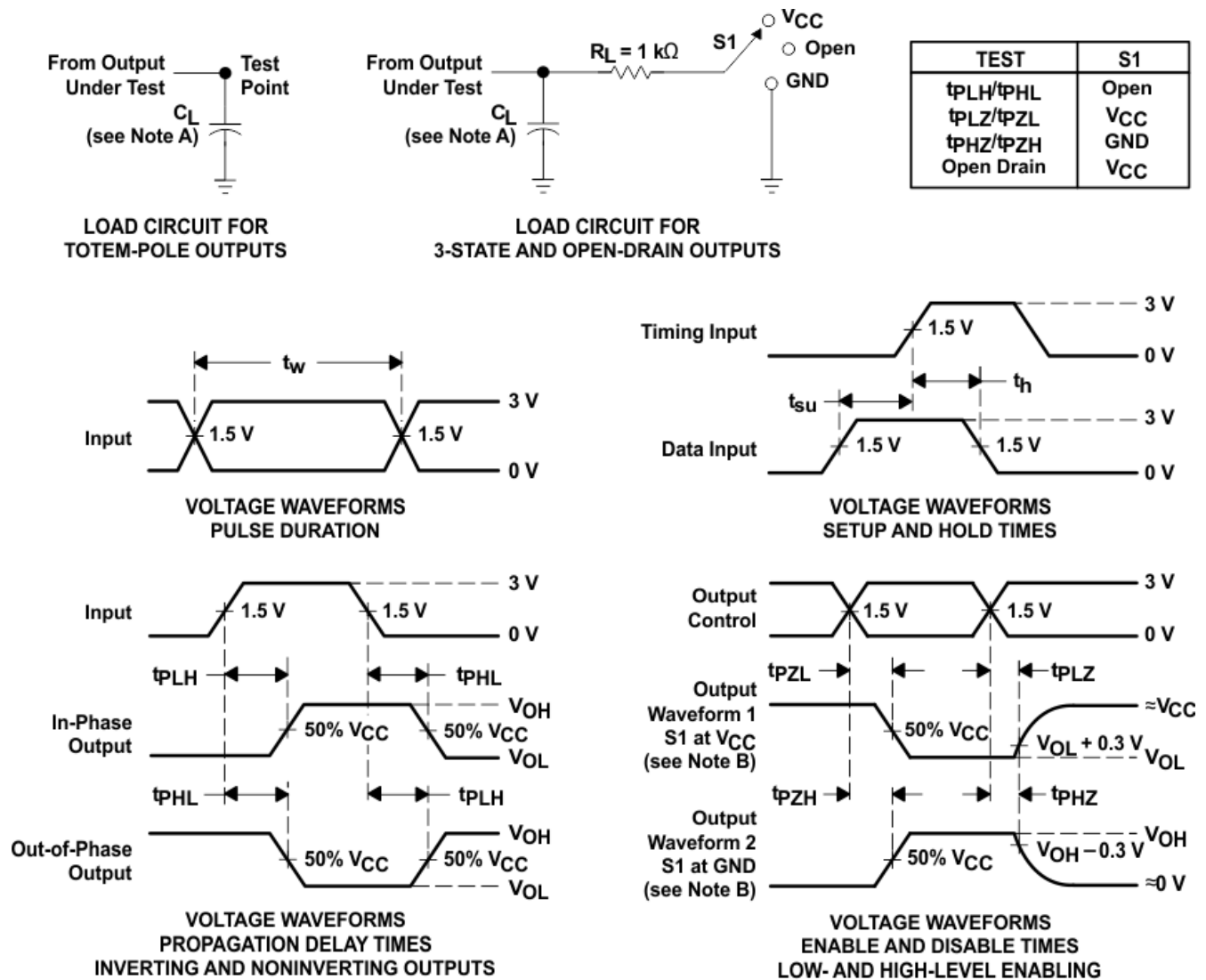


图 5-1. TPD vs Temperature

## 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:  $PRR \leq 1\text{ MHz}$ ,  $Z_O = 50\ \Omega$ ,  $t_r \leq 3\text{ ns}$ ,  $t_f \leq 3\text{ ns}$ .  
 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

The SN74AHCT1G126 device is a single bus buffer gate/line driver with 3-state output. The output is disabled when the output-enable (OE) input is low. When OE is high, true data is passed from the A input to the Y output.

To ensure the high-impedance state during power up or power down, OE should be tied to GND through a pulldown resistor; the minimum value of the resistor is determined by the current-sourcing capability of the driver.

### 7.2 Functional Block Diagram

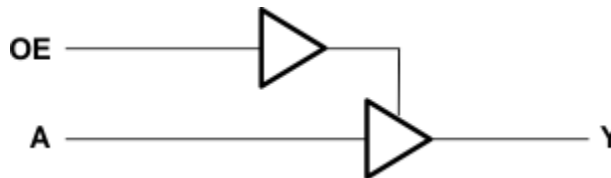


图 7-1. Logic Diagram (Positive Logic)

### 7.3 Feature Description

- TTL Inputs
  - Lowered switching threshold allows up translation 3.3 V to 5 V
- Slow edges reduce output ringing

### 7.4 Device Functional Modes

表 7-1. Function Table

INPUTS		OUTPUT
OE	A	Y
H	H	H
H	L	L
L	X	Z

## 8 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。

### 8.1 Application Information

SN74AHCT1G126 is a low-drive CMOS device that can be used for a multitude of bus interface type applications where output ringing is a concern. The low drive and slow edge rates will minimize overshoot and undershoot on the outputs. The input switching levels have been lowered to accommodate TTL inputs of 0.8-V  $V_{IL}$  and 2-V  $V_{IH}$ . This feature makes it ideal for translating up from 3.3 V to 5 V. 图 8-2 shows this type of translation.

### 8.2 Typical Application

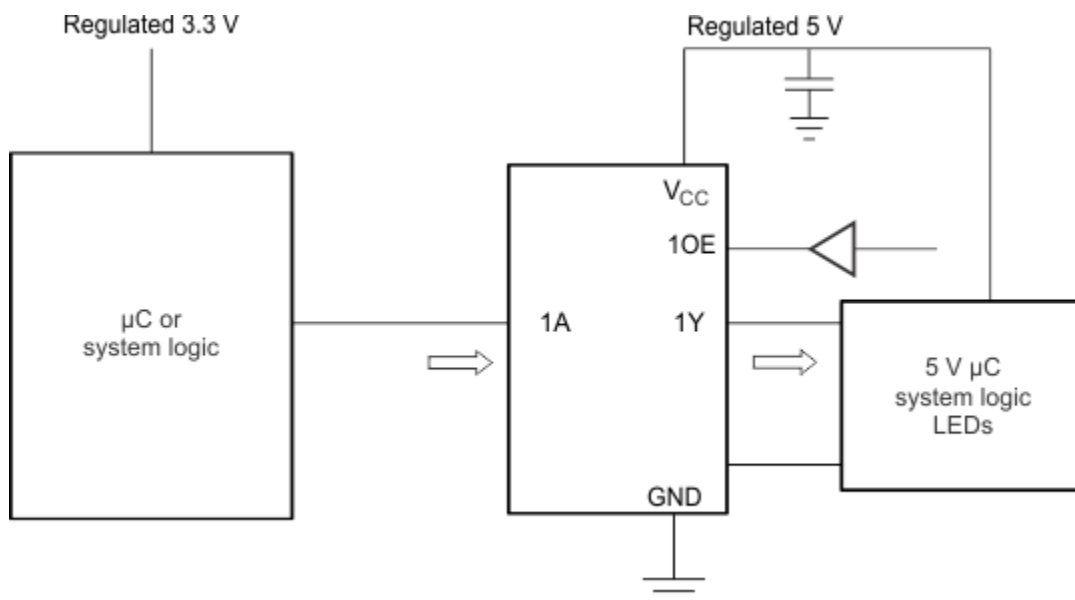


图 8-1. Typical Application Schematic

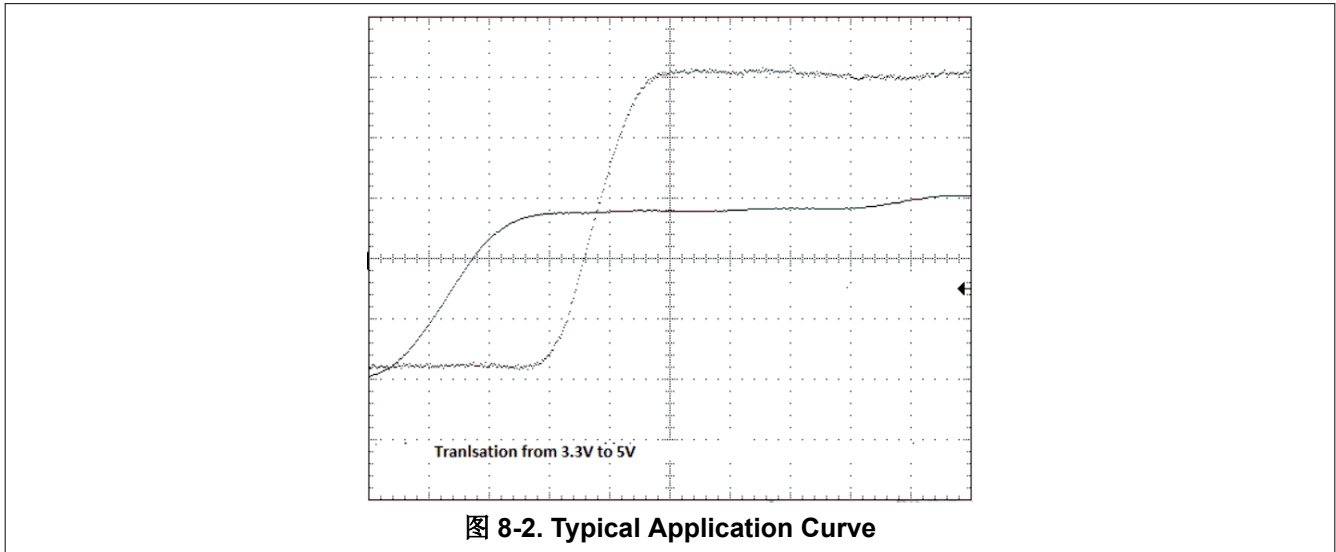
#### 8.2.1 Design Requirements

This device uses CMOS technology and has balanced output drive. Care should be taken to avoid bus contention because it can drive currents that would exceed maximum limits. The high drive will also create fast edges into light loads, so routing and load conditions should be considered to prevent ringing.

#### 8.2.2 Detailed Design Procedure

- Recommended Input Conditions
  - For rise time and fall time specifications, see  $\Delta t / \Delta V$  in the 节 5.3 table.
  - For specified High and low levels, see  $V_{IH}$  and  $V_{IL}$  in the 节 5.3 table.
- Recommend Output Conditions
  - Load currents should not exceed 25 mA per output and 50 mA total for the part.
  - Outputs should not be pulled above  $V_{CC}$ .

### 8.2.3 Application Curves



### 8.3 Power Supply Recommendations

The power supply can be any voltage between the MIN and MAX supply voltage rating located in the [节 5.3](#) table.

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

### 8.4 Layout

#### 8.4.1 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 [图 8-3](#) 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.

### 8.4.1.1 Layout Example

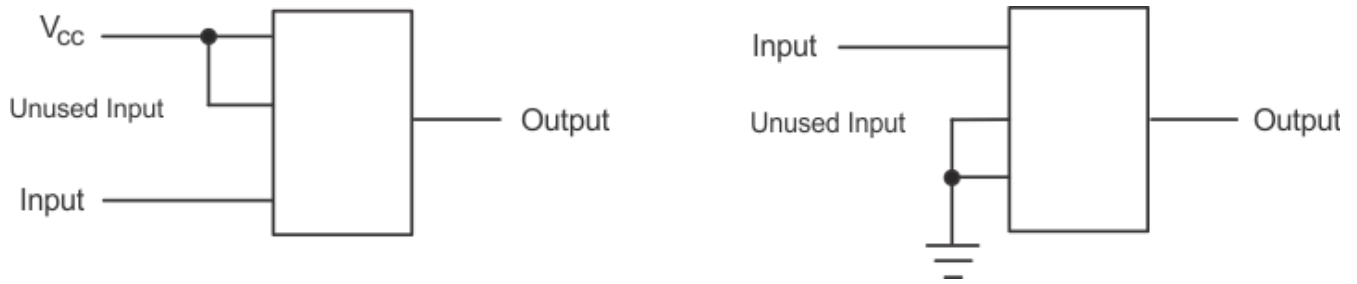


图 8-3. Layout Diagram

## 9 Device and Documentation Support

### 9.1 Documentation Support (Analog)

#### 9.1.1 Related Documentation

For related documentation, see the following:

- Texas Instruments, [CMOS Power Consumption and Cpd Calculation application note](#)
- Texas Instruments, [Designing With Logic application note](#)
- Texas Instruments, [Thermal Characteristics of Standard Linear and Logic \(SLL\) Packages and Devices application note](#)
- Texas Instruments, [Implications of Slow or Floating CMOS Inputs application note](#)

#### 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](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。

#### 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

Changes from Revision K (October 2023) to Revision L (March 2024)	Page
• 向 <a href="#">封装信息</a> 表中添加了本体尺寸 .....	1
• Updated thermal values for DBV package from R <sup>θ</sup> JA = 231.3 to 278, R <sup>θ</sup> JC(top) = 119.9 to 180.5, R <sup>θ</sup> JB = 60.6 to 184.4, Ψ JT = 17.8 to 115.4, Ψ JB = 60.1 to 183.4, R <sup>θ</sup> JC(bot) = N/A, all values in °C/W .....	5

Changes from Revision J (December 2014) to Revision K (October 2023)	Page
• Updated thermal values for DCK package from R <sup>θ</sup> JA = 287.6 to 289.2, R <sup>θ</sup> JC(top) = 97.7 to 205.8, R <sup>θ</sup> JB = 65 to 176.2, Ψ JT = 2 to 117.6, Ψ JB = 64.2 to 175.1, R <sup>θ</sup> JC(bot) = N/A, all values in °C/W .....	5

## 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
74AHCT1G126DBVRE4	ACTIVE	SOT-23	DBV	5	3000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 125	B26G	<a href="#">Samples</a>
74AHCT1G126DBVRG4	ACTIVE	SOT-23	DBV	5	3000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 125	B26G	<a href="#">Samples</a>
74AHCT1G126DCKRG4	ACTIVE	SC70	DCK	5	3000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 125	BN3	<a href="#">Samples</a>
74AHCT1G126DCKTG4	ACTIVE	SC70	DCK	5	250	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 125	BN3	<a href="#">Samples</a>
SN74AHCT1G126DBVR	ACTIVE	SOT-23	DBV	5	3000	RoHS & Green	NIPDAU   SN	Level-1-260C-UNLIM	-40 to 125	(38ZH, 3C9F, B263, B26G, B26J, B26S)	<a href="#">Samples</a>
SN74AHCT1G126DBVT	OBSOLETE	SOT-23	DBV	5		TBD	Call TI	Call TI	-40 to 125	(B263, B26G, B26J, B26S)	
SN74AHCT1G126DCKR	ACTIVE	SC70	DCK	5	3000	RoHS & Green	NIPDAU   SN	Level-1-260C-UNLIM	-40 to 125	(1QT, BN3, BNG, BNJ, BNL, BNS, BNU, BNY)	<a href="#">Samples</a>
SN74AHCT1G126DCKT	OBSOLETE	SC70	DCK	5		TBD	Call TI	Call TI	-40 to 125	(BN3, BNG, BNJ, BNS)	

(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.

<sup>(5)</sup> 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.

<sup>(6)</sup> 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 SN74AHCT1G126 :**

- Automotive : [SN74AHCT1G126-Q1](#)

NOTE: Qualified Version Definitions:

- Automotive - Q100 devices qualified for high-reliability automotive applications targeting zero defects



**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
74AHCT1G126DBVRG4	SOT-23	DBV	5	3000	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
74AHCT1G126DCKRG4	SC70	DCK	5	3000	178.0	9.2	2.4	2.4	1.22	4.0	8.0	Q3
74AHCT1G126DCKTG4	SC70	DCK	5	250	178.0	9.2	2.4	2.4	1.22	4.0	8.0	Q3
SN74AHCT1G126DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.3	3.2	1.4	4.0	8.0	Q3
SN74AHCT1G126DBVR	SOT-23	DBV	5	3000	180.0	8.4	3.23	3.17	1.37	4.0	8.0	Q3
SN74AHCT1G126DCKR	SC70	DCK	5	3000	178.0	9.0	2.4	2.5	1.2	4.0	8.0	Q3
SN74AHCT1G126DCKR	SC70	DCK	5	3000	178.0	9.2	2.4	2.4	1.22	4.0	8.0	Q3

**TAPE AND REEL BOX DIMENSIONS**


\*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
74AHCT1G126DBVRG4	SOT-23	DBV	5	3000	180.0	180.0	18.0
74AHCT1G126DCKRG4	SC70	DCK	5	3000	180.0	180.0	18.0
74AHCT1G126DCKTG4	SC70	DCK	5	250	180.0	180.0	18.0
SN74AHCT1G126DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
SN74AHCT1G126DBVR	SOT-23	DBV	5	3000	202.0	201.0	28.0
SN74AHCT1G126DCKR	SC70	DCK	5	3000	180.0	180.0	18.0
SN74AHCT1G126DCKR	SC70	DCK	5	3000	180.0	180.0	18.0

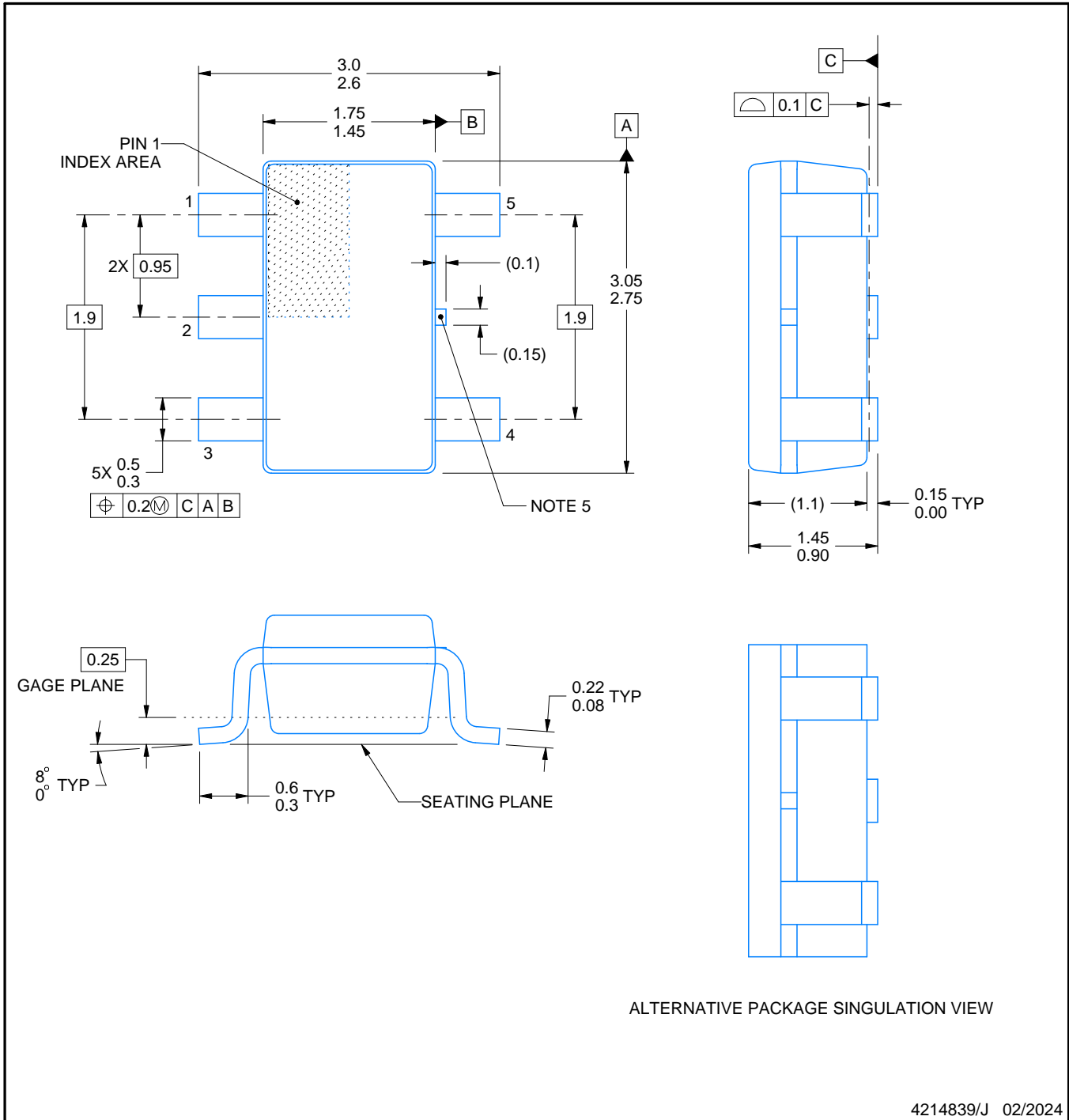
# DBV0005A



# PACKAGE OUTLINE

## SOT-23 - 1.45 mm max height

SMALL OUTLINE TRANSISTOR



### 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. Reference JEDEC MO-178.
4. Body dimensions do not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.25 mm per side.
5. Support pin may differ or may not be present.

# EXAMPLE BOARD LAYOUT

DBV0005A

SOT-23 - 1.45 mm max height

SMALL OUTLINE TRANSISTOR



LAND PATTERN EXAMPLE  
EXPOSED METAL SHOWN  
SCALE:15X



SOLDER MASK DETAILS

4214839/J 02/2024

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

DBV0005A

SOT-23 - 1.45 mm max height

SMALL OUTLINE TRANSISTOR



SOLDER PASTE EXAMPLE  
BASED ON 0.125 mm THICK STENCIL  
SCALE:15X

4214839/J 02/2024

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.

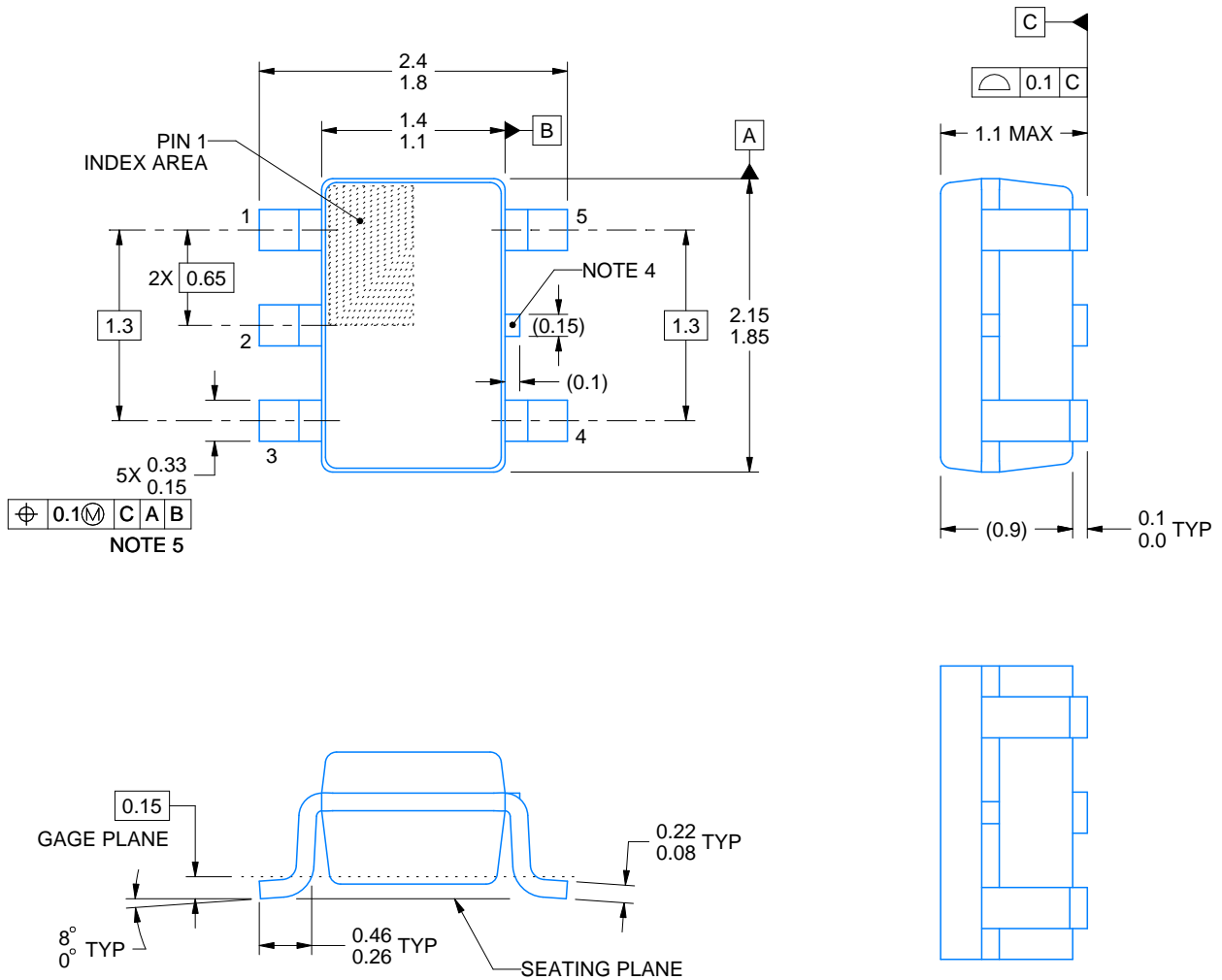


# DCK0005A

## PACKAGE OUTLINE

SOT - 1.1 max height

SMALL OUTLINE TRANSISTOR



4214834/E 06/2024

### NOTES:

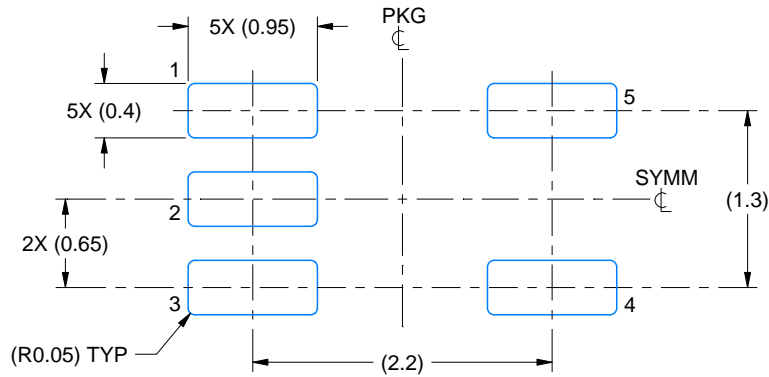
1. All linear dimensions are in millimeters. Any dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. Reference JEDEC MO-203.
4. Support pin may differ or may not be present.
5. Lead width does not comply with JEDEC.
6. Body dimensions do not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.25mm per side

# EXAMPLE BOARD LAYOUT

DCK0005A

SOT - 1.1 max height

SMALL OUTLINE TRANSISTOR



LAND PATTERN EXAMPLE  
EXPOSED METAL SHOWN  
SCALE:18X



SOLDER MASK DETAILS

4214834/E 06/2024

NOTES: (continued)

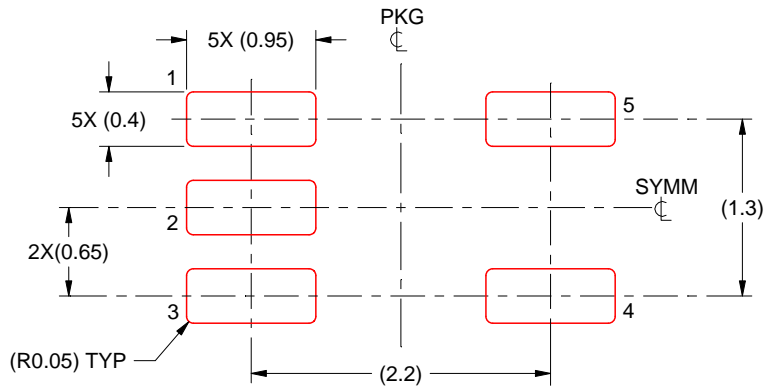
- 7. Publication IPC-7351 may have alternate designs.
- 8. Solder mask tolerances between and around signal pads can vary based on board fabrication site.

# EXAMPLE STENCIL DESIGN

DCK0005A

SOT - 1.1 max height

SMALL OUTLINE TRANSISTOR



SOLDER PASTE EXAMPLE  
BASED ON 0.125 THICK STENCIL  
SCALE: 18X

4214834/E 06/2024

NOTES: (continued)

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



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