

SN74AHCT1G08 シングル 2 入力、正論理 AND ゲート

1 特長

- 動作範囲: 4.5V~5.5V
- 最大 t_{pd} 7.1ns (5V 時)
- 低い消費電力: $I_{CC} = 10\mu A$ (最大値)
- 5V で $\pm 8mA$ の出力駆動能力
- 入力は TTL 電圧互換
- JESD 17 準拠で 250mA 超のラッチアップ性能

2 アプリケーション

- テレビ、セット・トップ・ボックス、オーディオ
- ワイヤレス・インフラ
- ファクトリ・オートメーション / 制御
- PC とノート PC
- ビル・オートメーション
- グリッド・インフラ
- 医療、ヘルスケア、フィットネス
- プリンタ
- 試験 / 測定機器
- EPOS (電子販売時点情報管理)
- 通信インフラ
- プロジェクト

3 概要

SN74AHCT1G08 はシングル 2 入力正論理 AND ゲートです。デバイスは、ブール関数 $Y = A \times B$ つまり、 $Y = \overline{A + B}$ を正論理で実行します。 I_{CC} 電流が低いため、このデバイスは消費電力が重要なアプリケーションやバッテリー駆動のアプリケーションで使用できます。

パッケージ情報

部品番号	パッケージ (1)	パッケージサイズ (2)	本体サイズ (3)
SN74AHCT1G08	DBV (SOT-23, 5)	2.9mm × 2.8mm	2.9mm × 1.6mm
	DCK (SC70, 5)	2.00mm × 1.25mm	2.00mm × 1.25mm
	DRL (SOT, 5)	1.60mm × 1.6mm	1.60mm × 1.2mm

- 利用可能なすべてのパッケージについては、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。
- パッケージサイズ (長さ×幅) は公称値で、該当する場合はピンも含まれます。
- 本体サイズ (長さ×幅) は公称値であり、ピンは含まれません。



論理図



Table of Contents

1 特長	1	7.3 Feature Description.....	8
2 アプリケーション	1	7.4 Device Functional Modes.....	8
3 概要	1	8 Application and Implementation	9
4 Pin Configuration and Functions	3	8.1 Application Information.....	9
5 Specifications	4	8.2 Typical Application.....	9
5.1 Absolute Maximum Ratings.....	4	8.3 Power Supply Recommendations.....	10
5.2 ESD Ratings.....	4	8.4 Layout.....	10
5.3 Recommended Operating Conditions.....	4	9 Device and Documentation Support	12
5.4 Thermal Information.....	5	9.1 Documentation Support (Analog).....	12
5.5 Electrical Characteristics.....	5	9.2 サポート・リソース.....	12
5.6 Switching Characteristics.....	6	9.3 Trademarks.....	12
5.7 Operating Characteristics.....	6	9.4 静電気放電に関する注意事項.....	12
5.8 Typical Characteristics.....	6	9.5 用語集.....	12
6 Parameter Measurement Information	7	10 Revision History	12
7 Detailed Description	8	11 Mechanical, Packaging, and Orderable Information	12
7.1 Overview.....	8		
7.2 Functional Block Diagram.....	8		

4 Pin Configuration and Functions

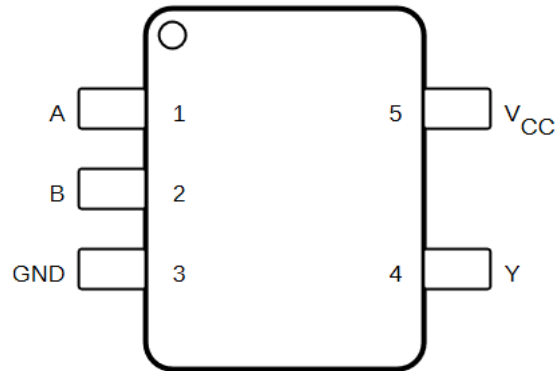


図 4-1. DBV, DCK, and DRL Packages 5-Pin SOT-23, SC70, and SOT (Top View)

PIN		TYPE ⁽¹⁾	DESCRIPTION
NAME	NO.		
A	1	I	Input A
B	2	I	Input B
GND	3	—	Ground Pin
V _{CC}	5	—	Supply Pin
Y	4	O	Output

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

5 Specifications

5.1 Absolute Maximum Ratings

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

		MIN	MAX	UNIT
V _{CC}	Supply voltage	-0.5	7	V
V _I	Input voltage ⁽²⁾	-0.5	7	V
V _O	Output voltage ⁽²⁾	-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			±50	mA
T _J	Maximum junction temperature		150	°C
T _{stg}	Storage temperature	-65	150	°C

- (1) Stresses beyond those listed under *Absolute Maximum Ratings* may cause permanent damage to the device. These are stress ratings only, which do not imply functional operation of the device at these or any other conditions beyond those indicated under [セクション 5.3](#). 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 _(ESD)	Electrostatic discharge	Human-body model (HBM), per ANSI/ESDA/JEDEC JS-001 ⁽¹⁾	±2500
		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⁾

		MIN	MAX	UNIT
V _{CC}	Supply voltage	4.5	5.5	V
V _{IH}	High-level input voltage	2		V
V _{IL}	Low-level input voltage		0.8	V
V _I	Input voltage	0	5.5	V
V _O	Output voltage	0	V _{CC}	V
I _{OH}	High-level output current		-8	mA
I _{OL}	Low-level output current		8	mA
Δt/Δv	Input transition rise and fall rate		20	ns/V
T _A	Operating free-air temperature	-40	125	°C

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

5.4 Thermal Information

THERMAL METRIC ⁽¹⁾		SN74AHCT1G08			UNIT
		DBV (SOT-23)	DCK (SC70)	DRL (SOT)	
		5 PINS	5 PINS	5 PINS	
$R_{\theta JA}$	Junction-to-ambient thermal resistance	278	289.2	242.9	°C/W
$R_{\theta JC(top)}$	Junction-to-case (top) thermal resistance	180.5	205.8	77.5	°C/W
$R_{\theta JB}$	Junction-to-board thermal resistance	184.4	176.2	77.5	°C/W
ψ_{JT}	Junction-to-top characterization parameter	115.4	117.6	9.6	°C/W
ψ_{JB}	Junction-to-board characterization parameter	183.4	175.1	77.3	°C/W
$R_{\theta JC(bot)}$	Junction-to-case (bot) thermal resistance	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, [SPRA953](#).

5.5 Electrical Characteristics

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

PARAMETER		TEST CONDITIONS		MIN	TYP	MAX	UNIT
V_{OH}	High-level output voltage	$I_{OH} = -50 \mu A, V_{CC} = 4.5 V$	$T_A = 25^\circ C$	4.4	4.5		V
			$T_A = -40^\circ C \text{ to } 125^\circ C$	4.4			
		$I_{OH} = -8 \text{ mA}, V_{CC} = 4.5 V$	$T_A = 25^\circ C$	3.94			
			$T_A = -40^\circ C \text{ to } 125^\circ C$	3.8			
V_{OL}	Low-level output voltage	$I_{OL} = 50 \mu A, V_{CC} = 4.5 V$				0.1	V
			$T_A = 25^\circ C$			0.36	
		$I_{OL} = 8 \text{ mA}, V_{CC} = 4.5 V$	$T_A = -40^\circ C \text{ to } 125^\circ C$			0.44	
I_I	Input current	$V_I = 5.5 V \text{ or } GND, V_{CC} = 0 V \text{ to } 5.5 V$	$T_A = 25^\circ C$			± 0.1	μA
			$T_A = -40^\circ C \text{ to } 125^\circ C$			± 1	
I_{CC}	Supply current	$V_I = V_{CC} \text{ or } GND, I_O = 0, V_{CC} = 5.5 V$	$T_A = 25^\circ C$			1	μA
			$T_A = -40^\circ C \text{ to } 125^\circ C$			10	
$\Delta I_{CC}^{(1)}$	Change in supply current	One input at 3.4 V, Other Inputs at V_{CC} or GND, $V_{CC} = 5.5 V$	$T_A = 25^\circ C$			1.35	mA
			$T_A = -40^\circ C \text{ to } 125^\circ C$			1.5	
C_I	Input capacitance	$V_I = V_{CC} \text{ or } GND, V_{CC} = 5 V$			4	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](#))

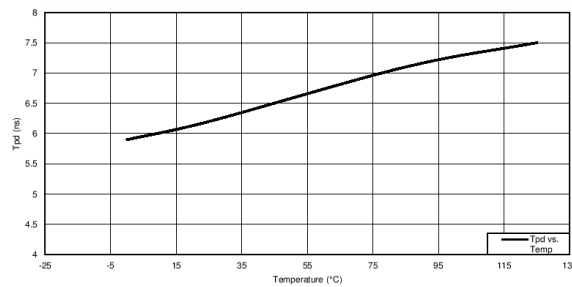
PARAMETER	FROM (INPUT)	TO (OUTPUT)	OUTPUT CAPACITANCE	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{PLH} Propagation delay, low to high transition	A or B	Y	$C_L = 15\text{ pF}$	$T_A = 25^\circ\text{C}$		5	6.2	ns
				$T_A = -40^\circ\text{C to } 85^\circ\text{C}$	1	7.1		
				$T_A = -40^\circ\text{C to } 125^\circ\text{C}$	1	7.5		
t_{PHL} Propagation delay, high to low transition	A or B	Y	$C_L = 15\text{ pF}$	$T_A = 25^\circ\text{C}$		5	6.2	ns
				$T_A = -40^\circ\text{C to } 85^\circ\text{C}$	1	7.1		
				$T_A = -40^\circ\text{C to } 125^\circ\text{C}$	1	7.5		
t_{PLH} Propagation delay, low to high transition	A or B	Y	$C_L = 50\text{ pF}$	$T_A = 25^\circ\text{C}$		5.5	7.9	ns
				Propagation delay, high to low transition	1	9		
				$T_A = -40^\circ\text{C to } 125^\circ\text{C}$	1	10		
t_{PHL} Propagation delay, high to low transition	A or B	Y	$C_L = 50\text{ pF}$	$T_A = 25^\circ\text{C}$		5.5	7.9	ns
				$T_A = -40^\circ\text{C to } 85^\circ\text{C}$	1	9		
				$T_A = -40^\circ\text{C to } 125^\circ\text{C}$	1	10		

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, $f = 1\text{ MHz}$	18	pF

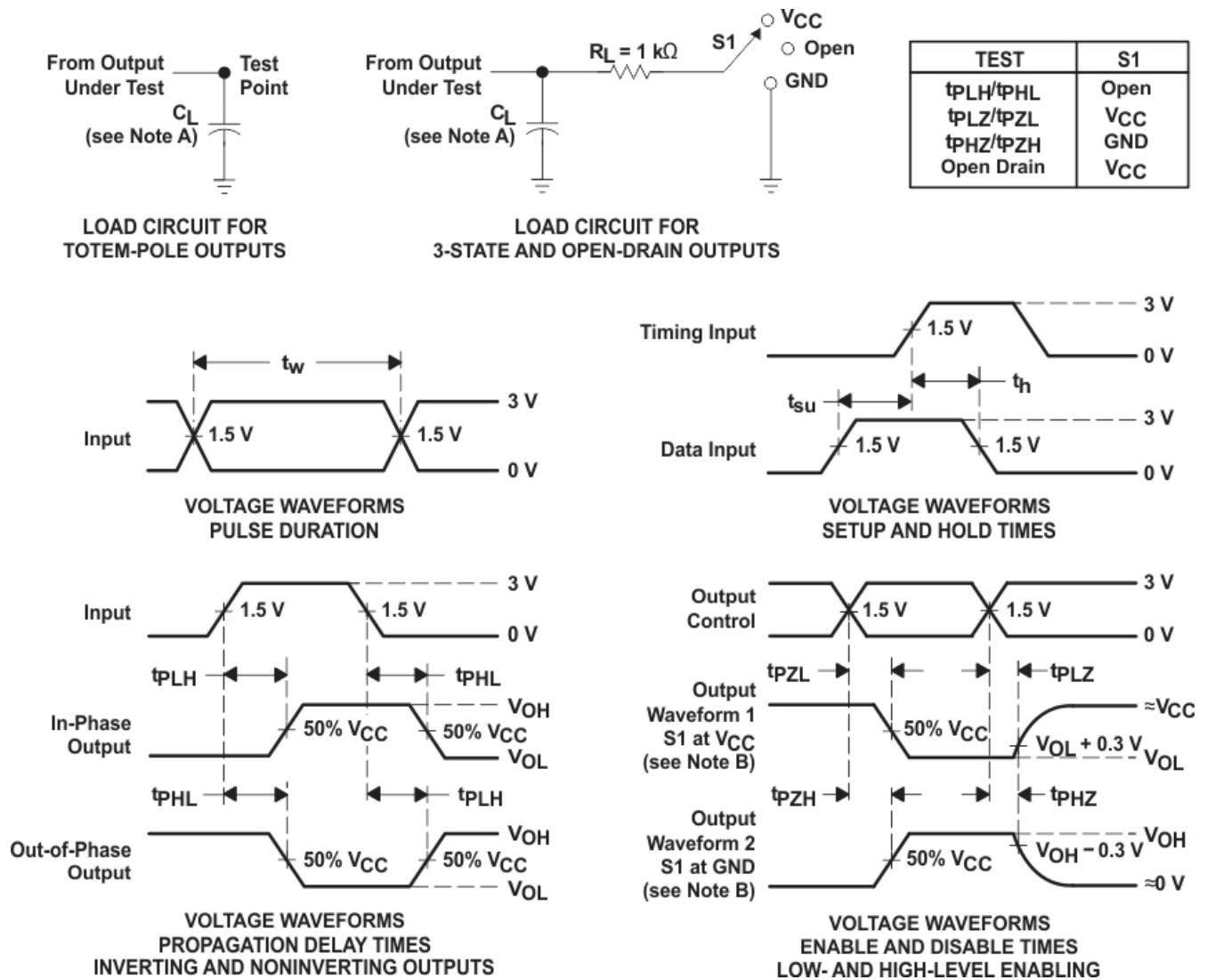
5.8 Typical Characteristics



$C_L = 15\text{ pF}$

図 5-1. T_{pd} vs Temperature

6 Parameter Measurement Information



C_L includes probe and jig 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.

All input pulses are supplied by generators having the following characteristics: PRR $\leq 1\text{ MHz}$, $Z_O = 50\ \Omega$, $t_r \leq 3\text{ ns}$, $t_f \leq 3\text{ ns}$.

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

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 SN74AHCT1G08 device is a single 2-input positive-AND gate. The device performs the Boolean AND function ($Y = A \cdot B$ or $Y = \overline{A + B}$) in positive logic. Low I_{CC} current allows this device to be used in power-sensitive or battery-powered applications. Robust inputs allow the device to up-translate with a propagation delay of 20 ns.

7.2 Functional Block Diagram



图 7-1. Logic Diagram (Positive Logic)

7.3 Feature Description

The V_{CC} for the device is optimized at 5 V.

Up voltage translation from 3.3 V to 5 V is allowed. The inputs accept V_{IH} levels of 2 V.

Output ringing is minimized by slow edge rates.

Inputs are TTL-Voltage compatible.

7.4 Device Functional Modes

表 7-1 lists the functional modes of the SN74AHCT1G08.

表 7-1. Function Table

INPUTS ⁽¹⁾		OUTPUT ⁽²⁾
A	B	Y
H	H	H
L	X	L
X	L	L

(1) H = High Voltage Level, L = Low Voltage Level, X = Don't Care

(2) H = Driving High, L = Driving Low, Z = High Impedance State

8 Application and Implementation

注

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となります。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。

8.1 Application Information

The SN74AHCT1G08 device is a single AND gate, which is often used for many common functions like power sequencing or an *on* LED indicator. Because the device is configured to output LOW unless all inputs are HIGH, an LED tied to the output of the device will only turn HIGH when all systems connected are sending a HIGH, or *ready* signal.

8.2 Typical Application

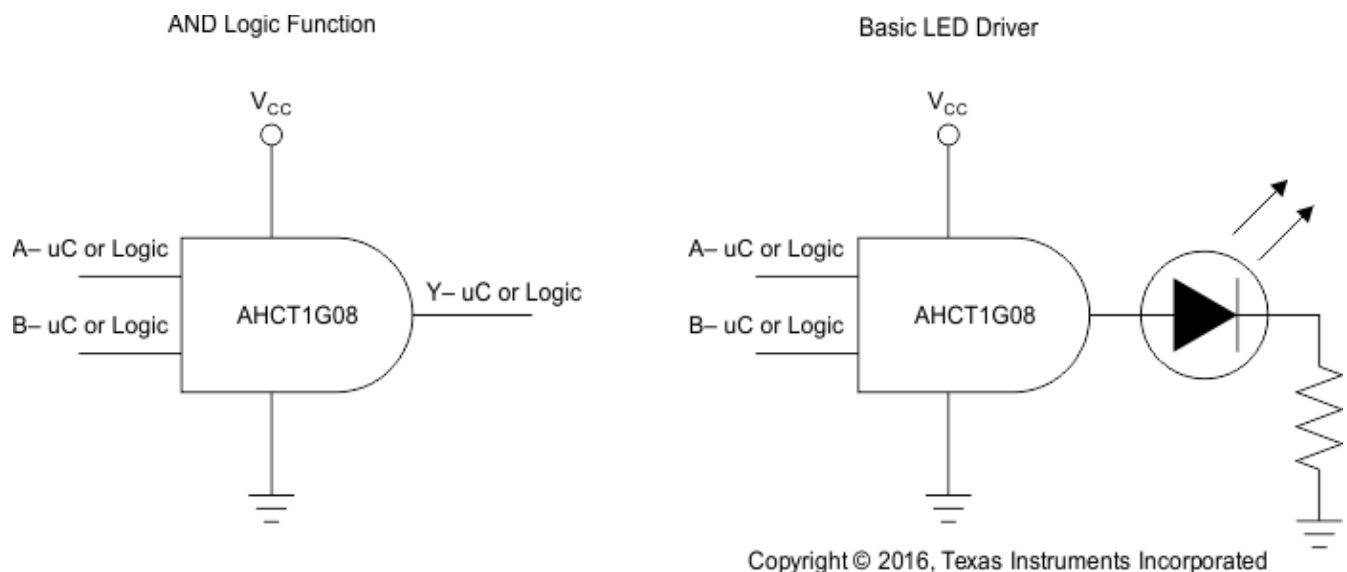


図 8-1. Typical Application Diagram

8.2.1 Design Requirements

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

8.2.2 Detailed Design Procedure

1. Recommended Input Conditions
 - For rise time and fall time specifications, see $\Delta t/\Delta V$ in [セクション 5.3](#).
 - For specified high and low levels, see V_{IH} and V_{IL} in [セクション 5.3](#).
 - Inputs are overvoltage tolerant allowing them to go as high as 5.5 V at any valid V_{CC} .
2. Recommended Output Conditions
 - Load currents must not exceed 25 mA per output and 50 mA total for the part.
 - Outputs must not be pulled above V_{CC} .

8.2.3 Application Curve

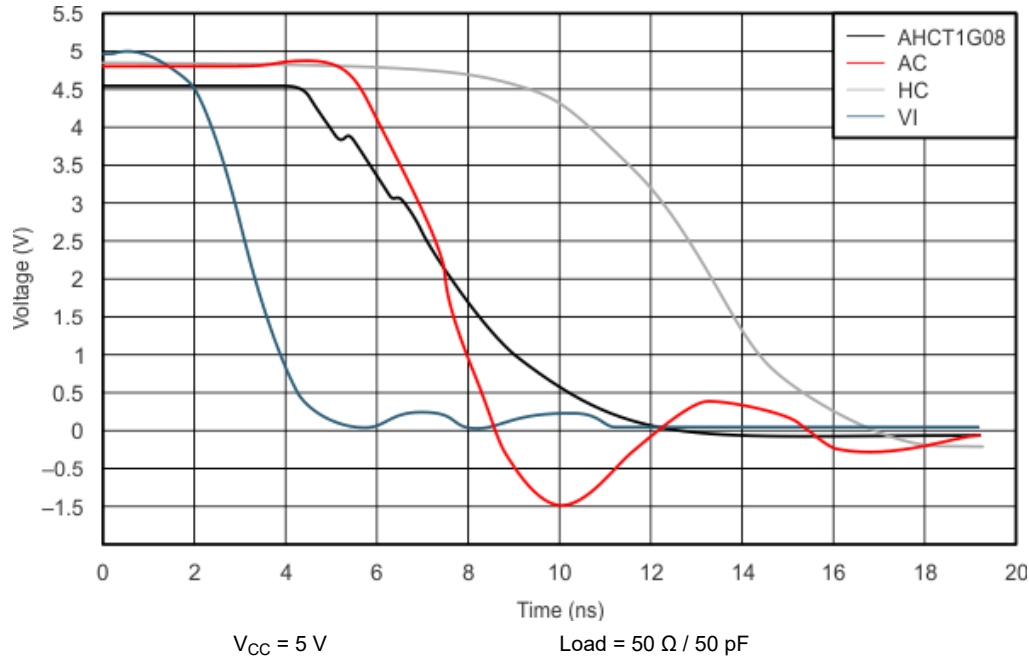


図 8-2. Typical Switching Characteristics

8.3 Power Supply Recommendations

The power supply can be any voltage between the minimum and maximum supply voltage rating located in [Recommended Operating Conditions](#).

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

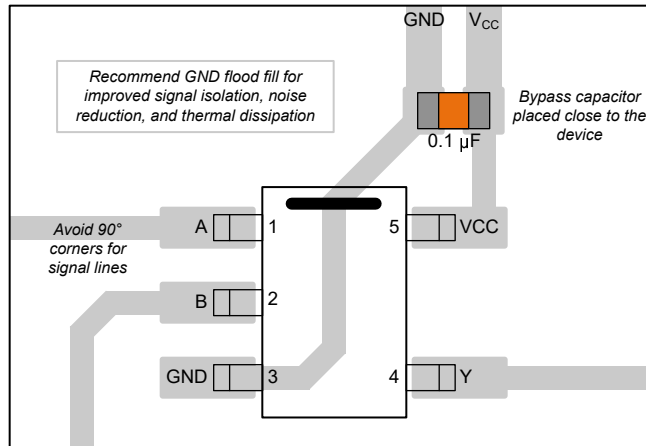
8.4 Layout

8.4.1 Layout Guidelines

When using multiple bit logic devices inputs must not ever 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 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. Observe the following rules 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 will be tied to GND or V_{CC} , whichever make more sense or is more convenient.

8.4.1.1 Layout Example



8-3. Layout Example for the SN74AHCT1G08

9 Device and Documentation Support

9.1 Documentation Support (Analog)

9.1.1 Related Documentation

For related documentation, see the following:

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

9.2 サポート・リソース

テキサス・インスツルメンツ 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。

リンクされているコンテンツは、各寄稿者により「現状のまま」提供されるものです。これらはテキサス・インスツルメンツの仕様を構成するものではなく、必ずしもテキサス・インスツルメンツの見解を反映したものではありません。テキサス・インスツルメンツの[使用条件](#)を参照してください。

9.3 Trademarks

テキサス・インスツルメンツ E2E™ is a trademark of Texas Instruments.

すべての商標は、それぞれの所有者に帰属します。

9.4 静電気放電に関する注意事項



この IC は、ESD によって破損する可能性があります。テキサス・インスツルメンツは、IC を取り扱う際には常に適切な注意を払うことを推奨します。正しい取り扱いおよび設置手順に従わない場合、デバイスを破損するおそれがあります。

ESD による破損は、わずかな性能低下からデバイスの完全な故障まで多岐にわたります。精密な IC の場合、パラメータがわずかに変化するだけで公表されている仕様から外れる可能性があるため、破損が発生しやすくなっています。

9.5 用語集

[テキサス・インスツルメンツ用語集](#) この用語集には、用語や略語の一覧および定義が記載されています。

10 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。

Changes from Revision R (October 2023) to Revision S (February 2024) Page

- Updated thermal values for DBV package from RθJA = 226 to 278, RθJC(top) = 165 to 180.5, RθJB = 59.1 to 184.4, ΨJT = 45.5 to 115.4, ΨJB = 58.3 to 183.4, RθJC(bot) = N/A, all values in °C/W **5**

Changes from Revision Q (April 2016) to Revision R (October 2023) Page

- ドキュメント全体にわたって表、図、相互参照の採番方法を更新..... **1**
- Updated thermal values for DCK package from RθJA = 277.5 to 289.2, RθJC(top) = 92.9 to 205.8, RθJB = 64.2 to 176.2, ΨJT = 1.9 to 117.6, ΨJB = 63.5 to 175.1, RθJC(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
74AHCT1G08DBVRG4	ACTIVE	SOT-23	DBV	5	3000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 125	B08G	Samples
74AHCT1G08DCKRE4	ACTIVE	SC70	DCK	5	3000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 125	(BE3, BEG, BEL, BE S)	Samples
74AHCT1G08DCKRG4	ACTIVE	SC70	DCK	5	3000	RoHS & Green	NIPDAU	Level-1-260C-UNLIM	-40 to 125	(BE3, BEG, BEL, BE S)	Samples
74AHCT1G08DRLRG4	ACTIVE	SOT-5X3	DRL	5	4000	RoHS & Green	NIPDAUAG	Level-1-260C-UNLIM	-40 to 125	(BEB, BES)	Samples
SN74AHCT1G08DBV3	ACTIVE	SOT-23	DBV	5	3000	RoHS & Non-Green	SNBI	Level-1-260C-UNLIM	-40 to 125	B08Y	Samples
SN74AHCT1G08DBVR	ACTIVE	SOT-23	DBV	5	3000	RoHS & Green	NIPDAU SN	Level-1-260C-UNLIM	-40 to 125	(38WH, B083, B08G, B08J, B08L, B08S)	Samples
SN74AHCT1G08DBVT	OBSOLETE	SOT-23	DBV	5		TBD	Call TI	Call TI	-40 to 125	(B083, B08G, B08J, B08S)	
SN74AHCT1G08DCK3	ACTIVE	SC70	DCK	5	3000	RoHS & Non-Green	SNBI	Level-1-260C-UNLIM	-40 to 125	BEY	Samples
SN74AHCT1G08DCKR	ACTIVE	SC70	DCK	5	3000	RoHS & Green	SN	Level-1-260C-UNLIM	-40 to 125	(1PJ, BE3, BEG, BE J, BEL, BES)	Samples
SN74AHCT1G08DCKT	OBSOLETE	SC70	DCK	5		TBD	Call TI	Call TI	-40 to 125	(BE3, BEG, BES)	
SN74AHCT1G08DRLR	ACTIVE	SOT-5X3	DRL	5	4000	RoHS & Green	NIPDAUAG	Level-1-260C-UNLIM	-40 to 125	(BEB, BES)	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.

Important Information and Disclaimer:The information provided on this page represents TI's knowledge and belief as of the date that it is provided. TI bases its knowledge and belief on information provided by third parties, and makes no representation or warranty as to the accuracy of such information. Efforts are underway to better integrate information from third parties. TI has taken and continues to take reasonable steps to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers consider certain information to be proprietary, and thus CAS numbers and other limited information may not be available for release.

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 SN74AHCT1G08 :

- Automotive : [SN74AHCT1G08-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
74AHCT1G08DBVRG4	SOT-23	DBV	5	3000	178.0	9.0	3.23	3.17	1.37	4.0	8.0	Q3
74AHCT1G08DCKRE4	SC70	DCK	5	3000	178.0	9.0	2.4	2.5	1.2	4.0	8.0	Q3
SN74AHCT1G08DBVR	SOT-23	DBV	5	3000	178.0	9.0	3.3	3.2	1.4	4.0	8.0	Q3
SN74AHCT1G08DBVR	SOT-23	DBV	5	3000	180.0	8.4	3.23	3.17	1.37	4.0	8.0	Q3
SN74AHCT1G08DCKR	SC70	DCK	5	3000	180.0	8.4	2.3	2.5	1.2	4.0	8.0	Q3
SN74AHCT1G08DRLR	SOT-5X3	DRL	5	4000	180.0	8.4	1.98	1.78	0.69	4.0	8.0	Q3

TAPE AND REEL BOX DIMENSIONS


*All dimensions are nominal

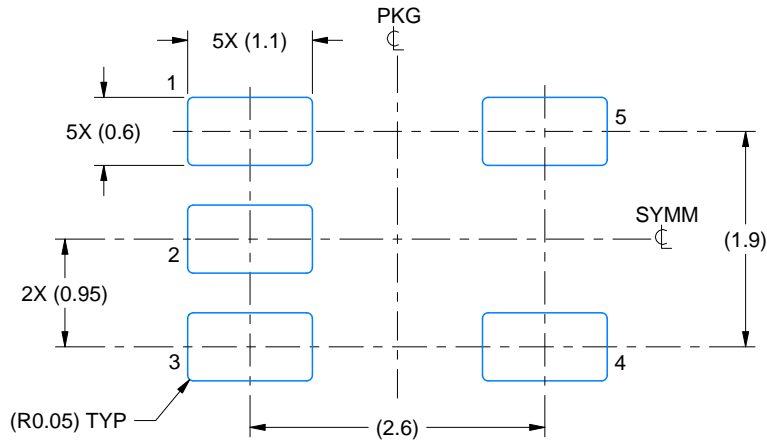
Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
74AHCT1G08DBVRG4	SOT-23	DBV	5	3000	180.0	180.0	18.0
74AHCT1G08DCKRE4	SC70	DCK	5	3000	180.0	180.0	18.0
SN74AHCT1G08DBVR	SOT-23	DBV	5	3000	180.0	180.0	18.0
SN74AHCT1G08DBVR	SOT-23	DBV	5	3000	202.0	201.0	28.0
SN74AHCT1G08DCKR	SC70	DCK	5	3000	210.0	185.0	35.0
SN74AHCT1G08DRLR	SOT-5X3	DRL	5	4000	202.0	201.0	28.0

EXAMPLE BOARD LAYOUT

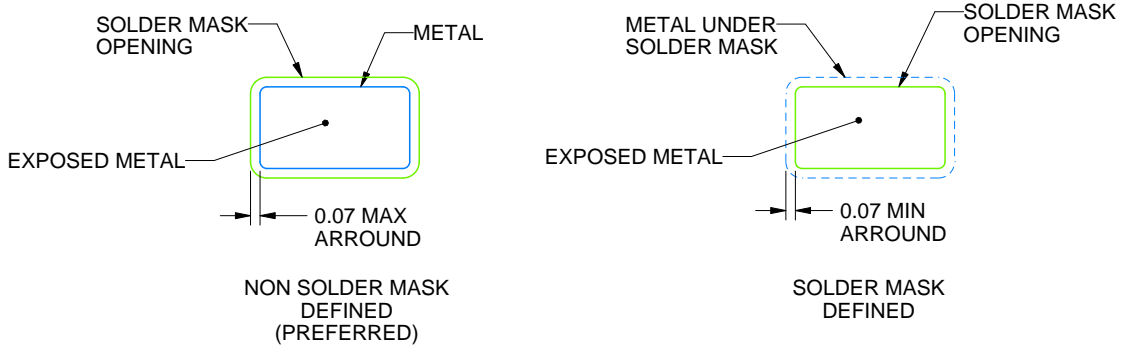
DBV0005A

SOT-23 - 1.45 mm max height

SMALL OUTLINE TRANSISTOR



LAND PATTERN EXAMPLE
EXPOSED METAL SHOWN
SCALE:15X



SOLDER MASK DETAILS

4214839/K 08/2024

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



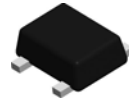
SOLDER PASTE EXAMPLE
BASED ON 0.125 mm THICK STENCIL
SCALE:15X

4214839/K 08/2024

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.

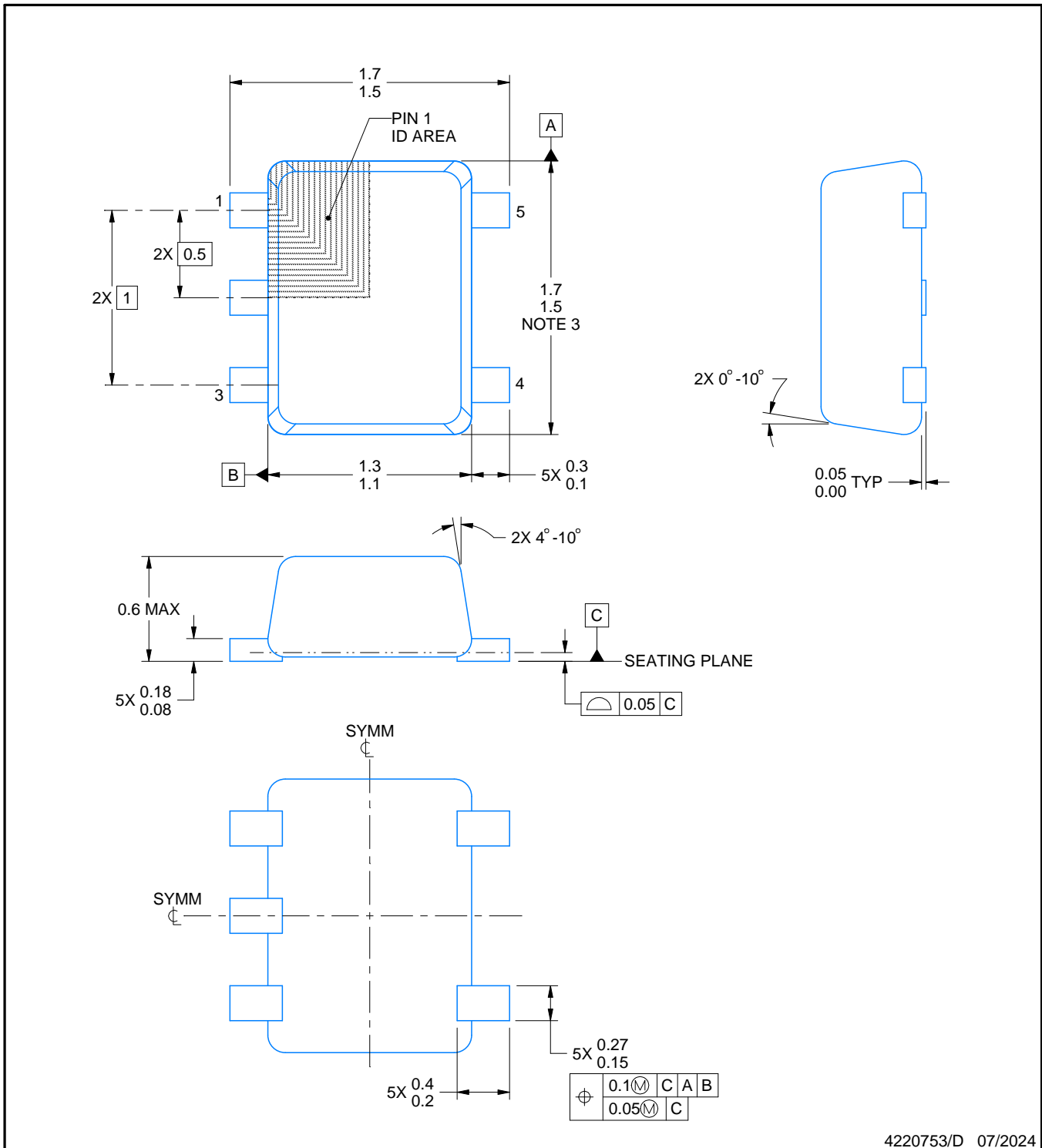
DRL0005A



PACKAGE OUTLINE

SOT - 0.6 mm max height

PLASTIC SMALL OUTLINE



4220753/D 07/2024

NOTES:

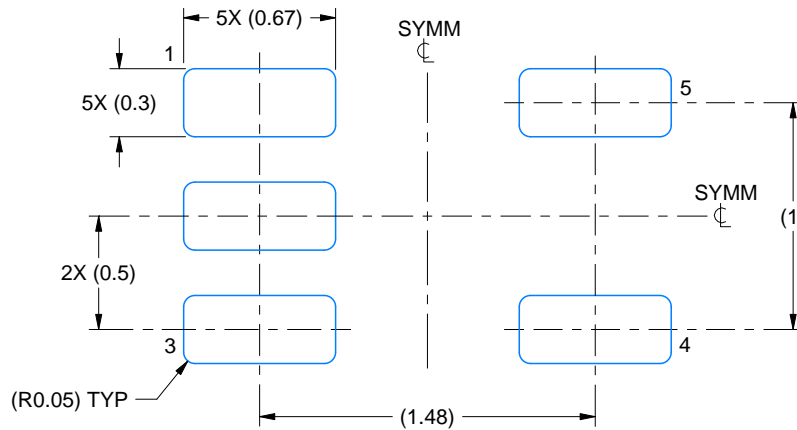
- All linear dimensions are in millimeters. Any dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
- This drawing is subject to change without notice.
- This dimension does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.15 mm per side.
- Reference JEDEC registration MO-293 Variation UAAD-1

EXAMPLE BOARD LAYOUT

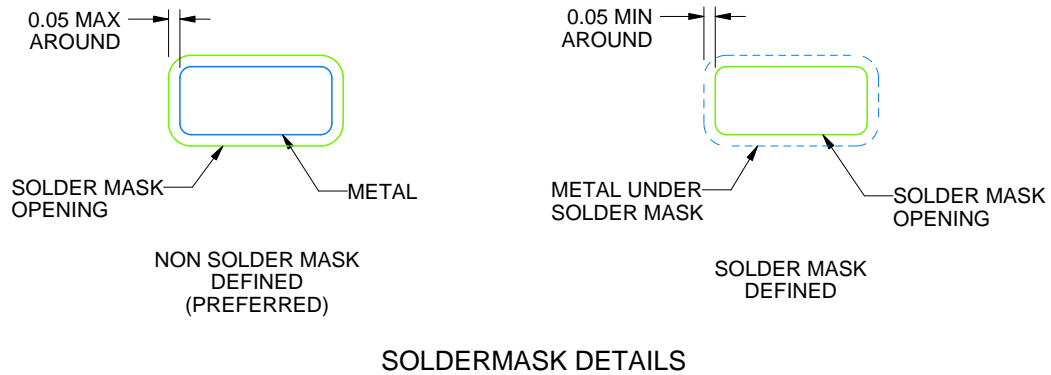
DRL0005A

SOT - 0.6 mm max height

PLASTIC SMALL OUTLINE



LAND PATTERN EXAMPLE
SCALE:30X



SOLDERMASK DETAILS

4220753/D 07/2024

NOTES: (continued)

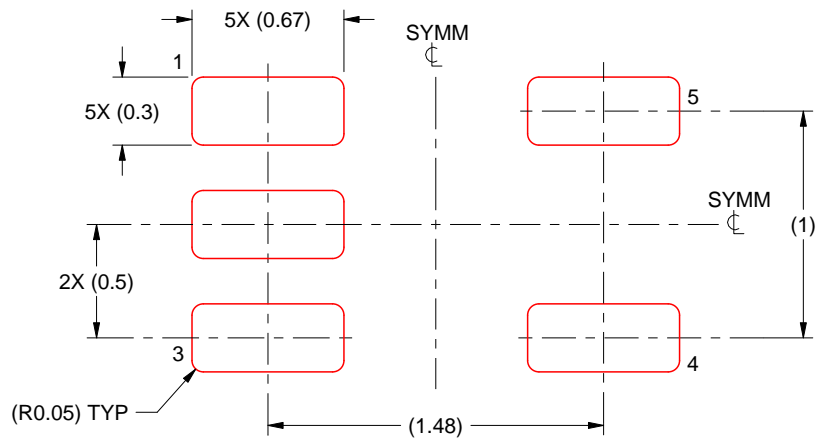
- 5. Publication IPC-7351 may have alternate designs.
- 6. Solder mask tolerances between and around signal pads can vary based on board fabrication site.

EXAMPLE STENCIL DESIGN

DRL0005A

SOT - 0.6 mm max height

PLASTIC SMALL OUTLINE



SOLDER PASTE EXAMPLE
BASED ON 0.1 mm THICK STENCIL
SCALE:30X

4220753/D 07/2024

NOTES: (continued)

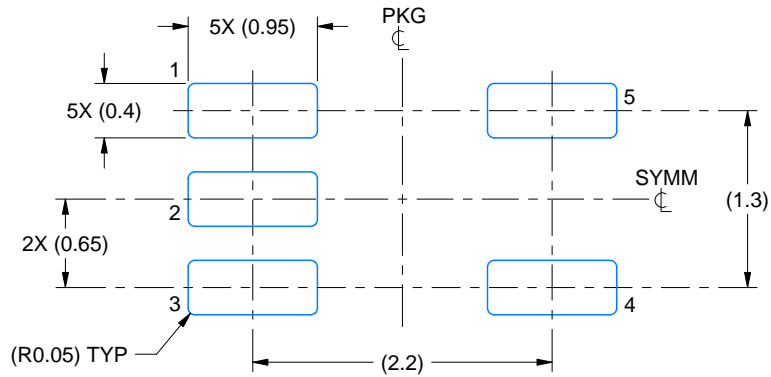
7. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.
8. Board assembly site may have different recommendations for stencil design.

EXAMPLE BOARD LAYOUT

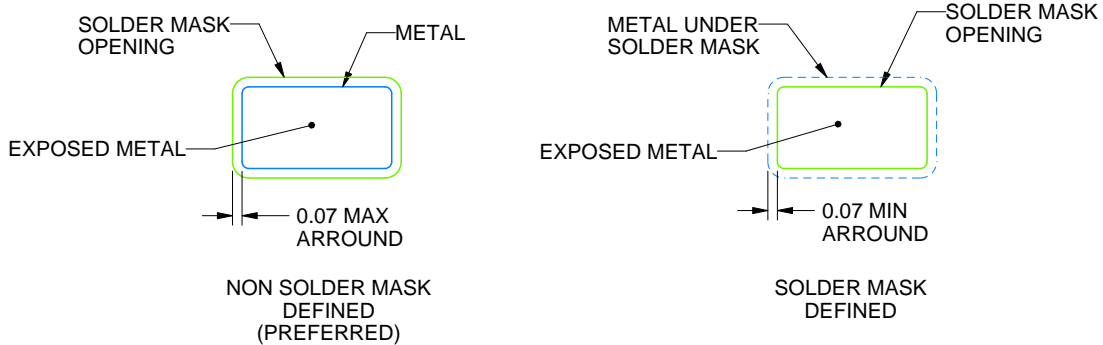
DCK0005A

SOT - 1.1 max height

SMALL OUTLINE TRANSISTOR



LAND PATTERN EXAMPLE
EXPOSED METAL SHOWN
SCALE:18X



SOLDER MASK DETAILS

4214834/F 08/2024

NOTES: (continued)

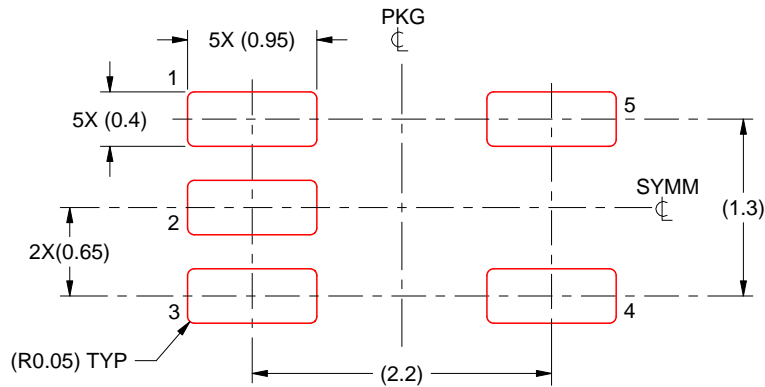
- 7. Publication IPC-7351 may have alternate designs.
- 8. Solder mask tolerances between and around signal pads can vary based on board fabrication site.

EXAMPLE STENCIL DESIGN

DCK0005A

SOT - 1.1 max height

SMALL OUTLINE TRANSISTOR



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

4214834/F 08/2024

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.

重要なお知らせと免責事項

TI は、技術データと信頼性データ（データシートを含みます）、設計リソース（リファレンス・デザインを含みます）、アプリケーションや設計に関する各種アドバイス、Web ツール、安全性情報、その他のリソースを、欠陥が存在する可能性のある「現状のまま」提供しており、商品性および特定目的に対する適合性の黙示保証、第三者の知的財産権の非侵害保証を含むいかなる保証も、明示的または黙示的にかかわらず拒否します。

これらのリソースは、TI 製品を使用する設計の経験を積んだ開発者への提供を意図したものです。(1) お客様のアプリケーションに適した TI 製品の選定、(2) お客様のアプリケーションの設計、検証、試験、(3) お客様のアプリケーションに該当する各種規格や、その他のあらゆる安全性、セキュリティ、規制、または他の要件への確実な適合に関する責任を、お客様のみが単独で負うものとし、

上記の各種リソースは、予告なく変更される可能性があります。これらのリソースは、リソースで説明されている TI 製品を使用するアプリケーションの開発の目的でのみ、TI はその使用をお客様に許諾します。これらのリソースに関して、他の目的で複製することや掲載することは禁止されています。TI や第三者の知的財産権のライセンスが付与されている訳ではありません。お客様は、これらのリソースを自身で使用した結果発生するあらゆる申し立て、損害、費用、損失、責任について、TI およびその代理人を完全に補償するものとし、TI は一切の責任を拒否します。

TI の製品は、[TI の販売条件](#)、または [ti.com](#) やかかる TI 製品の関連資料などのいずれかを通じて提供する適用可能な条項の下で提供されています。TI がこれらのリソースを提供することは、適用される TI の保証または他の保証の放棄の拡大や変更を意味するものではありません。

お客様がいかなる追加条項または代替条項を提案した場合でも、TI はそれらに異議を唱え、拒否します。

郵送先住所：Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2024, Texas Instruments Incorporated