SN74AUC1G19 1-of-2 Decoder/Demultiplexer

1 Features

- Latch-Up Performance Exceeds 100 mA Per JESD 78, Class II
- ESD Protection Exceeds JESD 22
  - 2000-V Human-Body Model (A114-A)
  - 200-V Machine Model (A115-A)
  - 1000-V Charged-Device Model (C101)
- Available in the Texas Instruments NanoFree™ Package
- Optimized for 1.8-V Operation and Is 3.6-V I/O Tolerant to Support Mixed-Mode Signal Operation
- I_{off} Supports Partial-Power-Down Mode Operation
- Sub-1-V Operable
- ±8-mA Output Drive at 1.8 V V_{CC}
- Maximum t_{pd} of 3 ns at 1.8 V
- Low Power Consumption, 10-µA Maximum I_{CC}

2 Applications

- AV Receiver
- Audio Dock: Portable
- Blu-ray Player and Home Theater
- Embedded PC
- MP3 Player/Recorder (Portable Audio)
- Personal Digital Assistant (PDA)
- Power: Telecom/Server AC/DC Supply: Single Controller: Analog and Digital
- Solid State Drive (SSD): Client and Enterprise
- TV: LCD/Digital and High-Definition (HDTV)
- Tablet: Enterprise
- Video Analytics: Server
- Wireless Headset, Keyboard, and Mouse

3 Description

This 1-of-2 decoder/demultiplexer is operational at 0.8-V to 2.7-V V_{CC}, but is designed specifically for 1.65-V to 1.95-V V_{CC} operation.

The SN74AUC1G19 is a 1-of-2 decoder/demultiplexer. This device buffers the data on input A and passes it to the outputs Y_0 (true) and Y_1 (complement) when the enable ($\overline{E}$) input signal is low.

NanoFree™ package technology is a major breakthrough in IC packaging concepts, using the die as the package.

This device is fully specified for partial-power-down applications using I_{off}. The I_{off} circuitry disables the outputs, preventing damaging current backflow through the device when it is powered down.

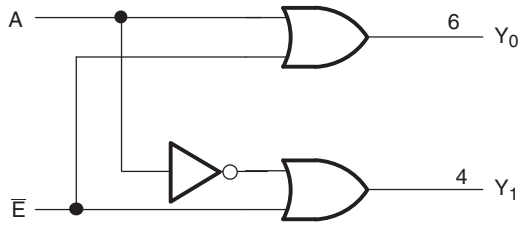
For more information about AUC Little Logic devices, see *Applications of Texas Instruments AUC Sub-1-V Little Logic Devices*, SCEA027.

Device Information(1)

PART NUMBER	PACKAGE	BODY SIZE (NOM)
SN74AUC1G19DBV	SOT-23 (6)	2.90 mm × 1.60 mm
SN74AUC1G19DCK	SC70 (6)	2.00 mm × 1.25 mm
SN74AUC1G19DRL	SOT-5X3 (6)	1.60 mm × 1.20 mm
SN74AUC1G19YZP	DSBGA (6)	1.50 mm × 0.90 mm

(1) For all available packages, see the orderable addendum at the end of the data sheet.

Logic Diagram (Positive Logic)



An IMPORTANT NOTICE at the end of this data sheet addresses availability, warranty, changes, use in safety-critical applications, intellectual property matters and other important disclaimers. UNLESS OTHERWISE NOTED, this document contains PRODUCTION DATA.

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4 Revision History

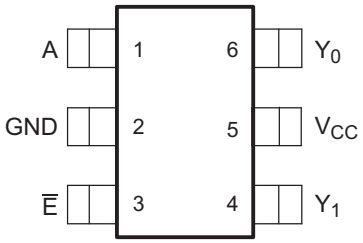
NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

Changes from Revision D (April 2007) to Revision E	Page
• Deleted DRY package throughout data sheet	1
• Added *Application* section, *Device Information* table, *Pin Configuration and Functions* section, *ESD Ratings* table, *Thermal Information* table, *Feature Description* section, *Device Functional Modes*, *Device and Documentation Support* section, and *Mechanical, Packaging, and Orderable Information* section	1
• Deleted *Ordering Information* table, see *Mechanical, Packaging, and Orderable Information* at the end of the data sheet	1

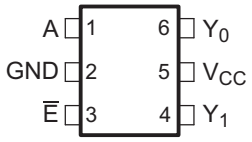
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5 Pin Configuration and Functions

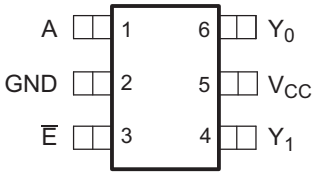
DBV Package
6-Pin SOT-23
Top View



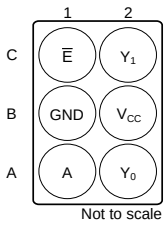
DRL Package
6-Pin SOT-5X3
Top View



DCK Package
6-Pin SC70
Top View



YZP Package
6-Pin DSBGA
Bottom View



Not to scale

See mechanical drawings for dimensions.

Pin Functions

PIN			I/O	DESCRIPTION
NAME	DBV, DCK, DRL	YZP		
A	1	A1	I	A Input
$\overline{E}$	3	C1	I	Active Low Enable
GND	2	B1	—	Ground
V_{CC}	5	B2	—	Positive Supply
Y_0	6	A2	O	Y_0 True Output
Y_1	4	C2	O	Y_1 Complemented Output

6 Specifications

6.1 Absolute Maximum Ratings

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

			MIN	MAX	UNIT
V_{CC}	Supply voltage		–0.5	3.6	V
V_I	Input voltage(2)		–0.5	3.6	V
V_O	Voltage range applied to any output in the high-impedance or power-off state(2)		–0.5	3.6	V
V_O	Voltage range applied to any output in the high or low state(2) (3)		–0.5	V_{CC} + 0.5	V
I_{IK}	Input clamp current	V_I < 0		–50	mA
I_{OK}	Output clamp current	V_O < 0		–50	mA
I_O	Continuous output current			±20	mA
	Continuous current through V_{CC} or GND			±100	mA
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 *Recommended Operating Conditions*. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.
(2) The input negative-voltage and output voltage ratings may be exceeded if the input and output current ratings are observed.
(3) The value of V_{CC} is provided in the recommended operating conditions table.

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6.2 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	
		Machine Model (A115-A)	200	

(1) JEDEC document JEP155 states that 500-V HBM allows safe manufacturing with a standard ESD control process.
(2) JEDEC document JEP157 states that 250-V CDM allows safe manufacturing with a standard ESD control process.

6.3 Recommended Operating Conditions

See (1)

			MIN	MAX	UNIT
V_{CC}	Supply voltage		0.8	2.7	V
V_{IH}	High-level control input voltage	V_{CC} = 0.8 V	V_{CC}	3.6	V
		V_{CC} = 1.1 V to 1.95 V	0.65 × V_{CC}	3.6	
		V_{CC} = 2.3 V to 2.7 V	1.7	3.6	
V_{IL}	Low-level control input voltage	V_{CC} = 0.8 V		0	V
		V_{CC} = 1.1 V to 1.95 V	0	0.35 × V_{CC}	
		V_{CC} = 2.3 V to 2.7 V	0	0.7	
V_O	Output voltage		0	V_{CC}	V
I_{OH}	High-level control output current	V_{CC} = 0.8 V		–0.7	mA
		V_{CC} = 1.1 V		–3	
		V_{CC}= 1.4 V		–5	
		V_{CC} = 1.65 V		–8	
		V_{CC}= 2.3 V		–9	
I_{OL}	Low-level control output current	V_{CC} = 0.8 V		0.7	mA
		V_{CC} = 1.1 V		3	
		V_{CC} = 1.4 V		5	
		V_{CC} = 1.65 V		8	
		V_{CC}= 2.3 V		9	
$\Delta t/\Delta v$	Input transition rise or fall rate	V_{CC} = 0.8 V to 1.95 V		20	ns/V
		V_{CC} = 2.3 V to 2.7 V		15	
T_A	Operating free-air temperature		–40	85	°C

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

6.4 Thermal Information

THERMAL METRIC (1)		SN74AUC1G19				UNIT
		DBV (SOT-23)	DCK (SC70)	DRL (SOT-5X3)	YZP (DSBGA)	
		6 PINS	6 PINS	6 PINS	6 PINS	
$R_{\theta JA}$	Junction-to-ambient thermal resistance	206	252	142	132	°C/W

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

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6.5 Electrical Characteristics

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

PARAMETER	TEST CONDITIONS	V_{CC}	MIN	TYP(1)	MAX	UNIT
V_{OH}	I_{OH} = –100 μA	0.8 V to 2.7 V	V_{CC} – 0.1			V
	I_{OH} = –0.7 mA	0.8 V		0.55		
	I_{OH} = –3 mA	1.1 V	0.8			
	I_{OH} = –5 mA	1.4 V	1			
	I_{OH} = –8 mA	1.65 V	1.2			
	I_{OH} = –9 mA	2.3 V	1.8			
V_{OL}	I_{OL} = 100 μA	0.8 V to 2.7 V			0.2	V
	I_{OL} = 0.7 mA	0.8 V		0.25		
	I_{OL} = 3 mA	1.1 V			0.3	
	I_{OL} = 5 mA	1.4 V			0.4	
	I_{OL} = 8 mA	1.65 V			0.45	
	I_{OL} = 9 mA	2.3 V			0.6	
I_I	V_I = V_{CC} or GND	0 to 2.7 V			±5	μA
I_{off}	V_I or V_O = 2.7 V	0			±10	μA
I_{CC}	V_I = V_{CC} or GND, I_O = 0	0.8 V to 2.7 V			10	μA
C_I	V_I = V_{CC} or GND	2.5 V		3		pF

(1) All typical values are at V_{CC} = 3.3 V (unless otherwise noted), T_A = 25°C.

6.6 Switching Characteristics: C_L = 15 pF

over recommended operating free-air temperature range, C_L = 15 pF (unless otherwise noted) (see Figure 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V_{CC} = 0.8 V	V_{CC} = 1.1 V ± 0.1 V		V_{CC} = 1.5 V ± 0.1 V		V_{CC} = 1.8 V ± 0.15 V		V_{CC} = 2.5 V ± 0.2 V		UNIT
			TYP	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
t_{pd}	A or $\overline{E}$	Y	7.5	0.5	4.6	0.4	3.0	0.3	2.4	0.2	1.7	ns

6.7 Switching Characteristics: C_L = 30 pF

over recommended operating free-air temperature range, C_L = 30 pF (unless otherwise noted) (see Figure 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V_{CC} = 1.8 V ± 0.15 V		V_{CC} = 2.5 V ± 0.2 V		UNIT
			MIN	MAX	MIN	MAX	
t_{pd}	A or $\overline{E}$	Y_0 or Y_1	0.5	2.8	0.4	2.0	ns

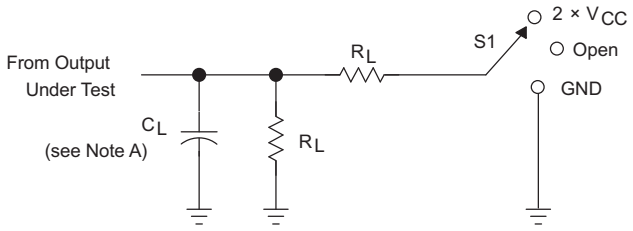
6.8 Operating Characteristics

T_A = 25°C

PARAMETER		TEST CONDITIONS	V_{CC} = 0.8 V	V_{CC} = 1.2 V	V_{CC} = 1.5 V	V_{CC} =1.8 V	V_{CC} = 2.5 V	UNIT
			TYP	TYP	TYP	TYP	TYP	
C_{pd}	Power dissipation capacitance	f = 10 MHz	13	13	13	13	14	pF

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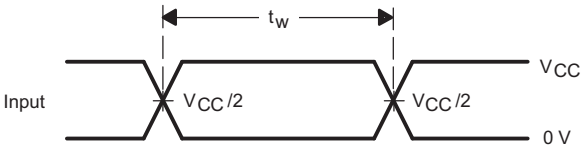
7 Parameter Measurement Information



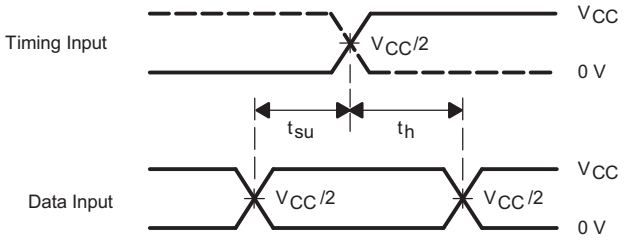
LOAD CIRCUIT

TEST	S1
t_{PLH}/t_{PHL} t_{PLZ}/t_{PZL} t_{PHZ}/t_{PZH}	Open 2 × V_{CC} GND

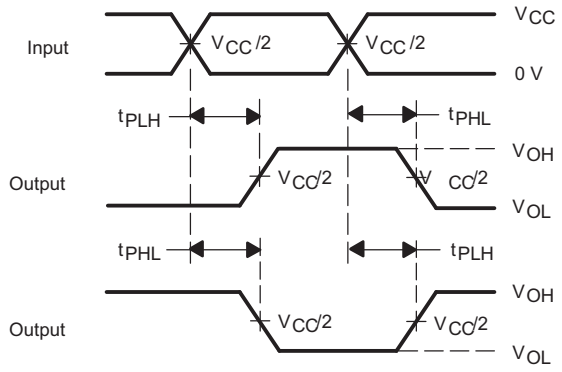
V_{CC}	C_L	R_L	V_D
0.8 V	15 pF	2 kΩ	0.1 V
1.2 V ± 0.1 V	15 pF	2 kΩ	0.1 V
1.5 V ± 0.1 V	15 pF	2 kΩ	0.1 V
1.8 V ± 0.15 V	15 pF	2 kΩ	0.15 V
2.5 V ± 0.2 V	15 pF	2 kΩ	0.15 V
1.8 V ± 0.15 V	30 pF	1 kΩ	0.15 V
2.5 V ± 0.2 V	30 pF	500 Ω	0.15 V



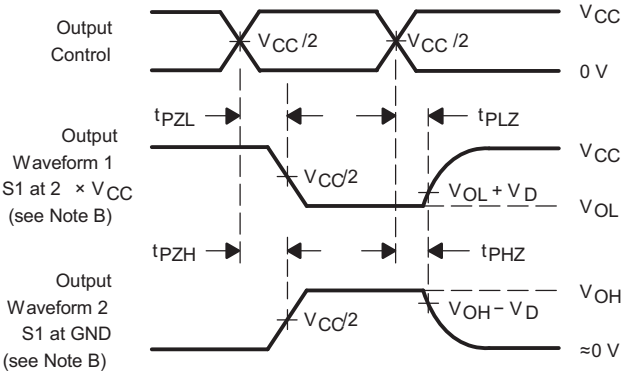
VOLTAGE WAVEFORMS
PULSE DURATION



VOLT AGE WAVEFORMS
SETUP AND HOLD TIMES



VOLT AGE WAVEFORMS
PROPAGATION DELAY TIMES
INVERTING AND NONINVERTING OUTPUTS



VOLTAGE WAVEFORMS
ENABLE AND DISABLE TIMES
LOW - AND HIGH-LEVEL ENABLING

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 ≤ 10 MHZ, Z_o = 50 Ω , slew rate ≤ 1 V/ns.
D. The outputs are measured one at a time, with one transition per measurement.
E. t_{PLZ} and t_{PHZ} are the same as t_{dis}.
F. t_{PZL} and t_{PZH} are the same as t_{en}.
G. t_{PLH} and t_{PHL} are the same as t_{pd}.
H. All parameters and waveforms are not applicable to all devices.

Figure 1. Load Circuit and Voltage Waveforms

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8 Detailed Description

8.1 Functional Block Diagram

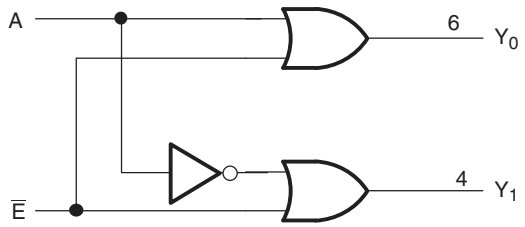


Figure 2. Logic Diagram (Positive Logic)

8.2 Device Functional Modes

Table 1 lists the functional mode of the SN74AUC1G19.

Table 1. Function Table

INPUTS		OUTPUTS	
$\overline{E}$	A	Y_0	Y_1
L	L	L	H
L	H	H	L
H	X	H	H

9 Device and Documentation Support

9.1 Documentation Support

9.1.1 Related Documentation

For related documentation see the following:

- *Applications of Texas Instruments AUC Sub-1-V Little Logic Devices*, SCEA027
- *Implications of Slow or Floating CMOS Inputs*, SCBA004

9.2 Receiving Notification of Documentation Updates

To receive notification of documentation updates, navigate to the device product folder on ti.com. In the upper right corner, click on *Alert me* to register and receive a weekly digest of any product information that has changed. For change details, review the revision history included in any revised document.

9.3 Community Resources

The following links connect to TI community resources. Linked contents are provided "AS IS" by the respective contributors. They do not constitute TI specifications and do not necessarily reflect TI's views; see TI's Terms of Use.

TI E2E™ Online Community ***TI's Engineer-to-Engineer (E2E) Community.*** Created to foster collaboration among engineers. At e2e.ti.com, you can ask questions, share knowledge, explore ideas and help solve problems with fellow engineers.

Design Support ***TI's Design Support*** Quickly find helpful E2E forums along with design support tools and contact information for technical support.

9.4 Trademarks

NanoFree, E2E are trademarks of Texas Instruments.
All other trademarks are the property of their respective owners.

9.5 Electrostatic Discharge Caution



This integrated circuit can be damaged by ESD. Texas Instruments recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage.

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

9.6 Glossary

SLYZ022 — *TI Glossary*.

This glossary lists and explains terms, acronyms, and definitions.

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.

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PACKAGING INFORMATION

Orderable part number	Status (1)	Material type (2)	Package | Pins	Package qty | Carrier	RoHS (3)	Lead finish/ Ball material (4)	MSL rating/ Peak reflow (5)	Op temp (°C)	Part marking (6)
SN74AUC1G19DBVR	Active	Production	SOT-23 (DBV) | 6	3000 | LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	U19R
SN74AUC1G19DBVR.B	Active	Production	SOT-23 (DBV) | 6	3000 | LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	U19R
SN74AUC1G19DCKR	Active	Production	SC70 (DCK) | 6	3000 | LARGE T&R	Yes	NIPDAU | SN	Level-1-260C-UNLIM	-40 to 85	U5R
SN74AUC1G19DCKR.B	Active	Production	SC70 (DCK) | 6	3000 | LARGE T&R	Yes	SN	Level-1-260C-UNLIM	-40 to 85	U5R
SN74AUC1G19DCKT	Active	Production	SC70 (DCK) | 6	250 | SMALL T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	U5R
SN74AUC1G19DCKT.B	Active	Production	SC70 (DCK) | 6	250 | SMALL T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	U5R
SN74AUC1G19DRLR	Active	Production	SOT-5X3 (DRL) | 6	4000 | LARGE T&R	Yes	NIPDAU | NIPDAUAG	Level-1-260C-UNLIM	-40 to 85	(1KA, U57, U5R)
SN74AUC1G19DRLR.B	Active	Production	SOT-5X3 (DRL) | 6	4000 | LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	(1KA, U57, U5R)
SN74AUC1G19YZPR	Active	Production	DSBGA (YZP) | 6	3000 | LARGE T&R	Yes	SNAGCU	Level-1-260C-UNLIM	-40 to 85	U5N
SN74AUC1G19YZPR.B	Active	Production	DSBGA (YZP) | 6	3000 | LARGE T&R	Yes	SNAGCU	Level-1-260C-UNLIM	-40 to 85	U5N

(1) **Status:** For more details on status, see our product life cycle.

(2) **Material type:** When designated, preproduction parts are prototypes/experimental devices, and are not yet approved or released for full production. Testing and final process, including without limitation quality assurance, reliability performance testing, and/or process qualification, may not yet be complete, and this item is subject to further changes or possible discontinuation. If available for ordering, purchases will be subject to an additional waiver at checkout, and are intended for early internal evaluation purposes only. These items are sold without warranties of any kind.

(3) **RoHS values:** Yes, No, RoHS Exempt. See the TI RoHS Statement for additional information and value definition.

(4) **Lead finish/Ball material:** Parts may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead finish/Ball material values may wrap to two lines if the finish value exceeds the maximum column width.

(5) **MSL rating/Peak reflow:** The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will be used to mount the part to the printed circuit board.

(6) **Part marking:** There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

Multiple part markings will be inside parentheses. Only one part marking contained in parentheses and separated by a "~" will appear on a part. If a line is indented then it is a continuation of the previous line and the two combined represent the entire part marking for that device.

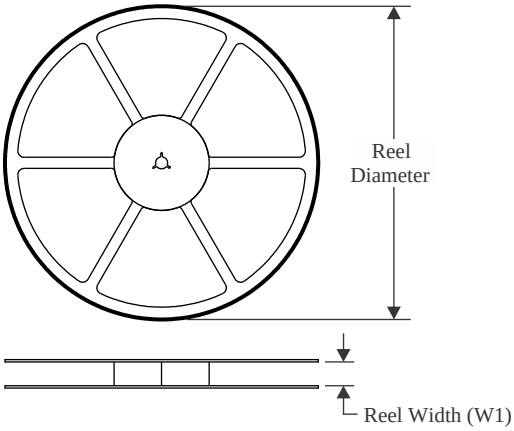
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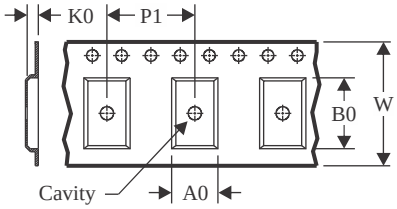
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TAPE AND REEL INFORMATION

REEL DIMENSIONS

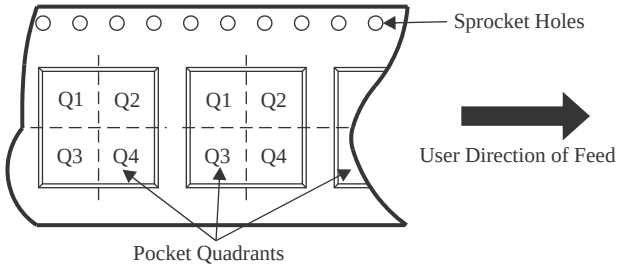


TAPE DIMENSIONS



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

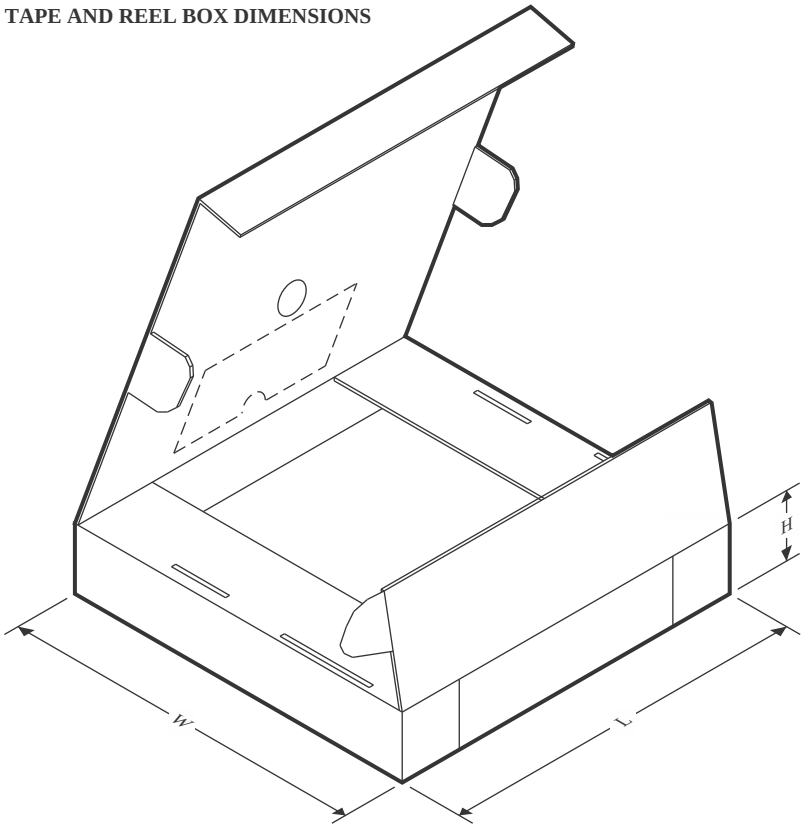
QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



*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
SN74AUC1G19DBVR	SOT-23	DBV	6	3000	180.0	8.4	3.23	3.17	1.37	4.0	8.0	Q3
SN74AUC1G19DCKR	SC70	DCK	6	3000	178.0	8.4	2.25	2.45	1.2	4.0	8.0	Q3
SN74AUC1G19DCKR	SC70	DCK	6	3000	180.0	8.4	2.3	2.55	1.2	4.0	8.0	Q3
SN74AUC1G19DCKR	SC70	DCK	6	3000	180.0	8.4	2.41	2.41	1.2	4.0	8.0	Q3
SN74AUC1G19DCKT	SC70	DCK	6	250	180.0	8.4	2.41	2.41	1.2	4.0	8.0	Q3
SN74AUC1G19DRLR	SOT-5X3	DRL	6	4000	180.0	8.4	2.0	1.8	0.75	4.0	8.0	Q3
SN74AUC1G19DRLR	SOT-5X3	DRL	6	4000	180.0	8.4	1.98	1.78	0.69	4.0	8.0	Q3
SN74AUC1G19YZPR	DSBGA	YZP	6	3000	178.0	9.2	1.02	1.52	0.63	4.0	8.0	Q1

TAPE AND REEL BOX DIMENSIONS



*All dimensions are nominal

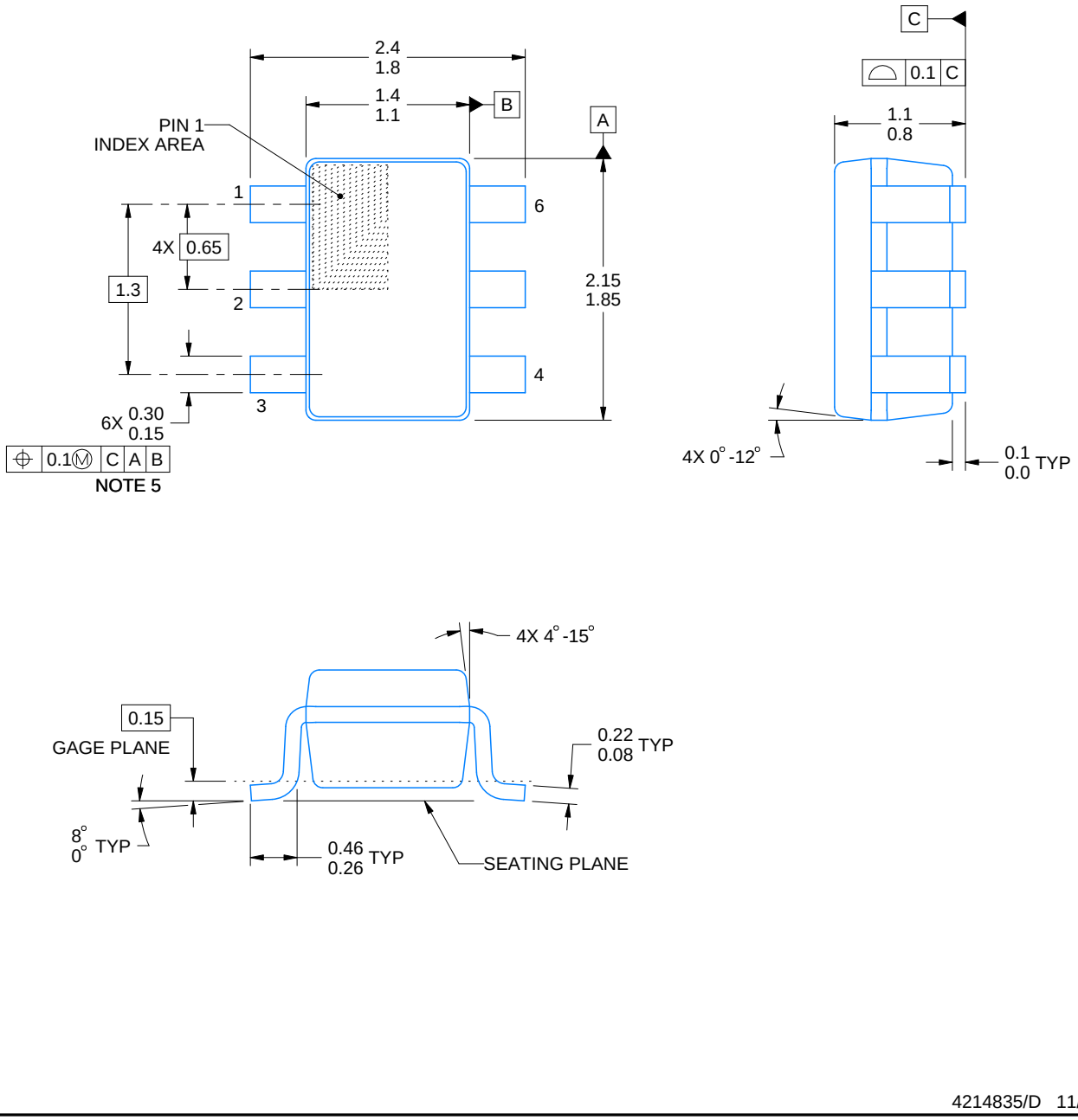
Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
SN74AUC1G19DBVR	SOT-23	DBV	6	3000	202.0	201.0	28.0
SN74AUC1G19DCKR	SC70	DCK	6	3000	208.0	191.0	35.0
SN74AUC1G19DCKR	SC70	DCK	6	3000	210.0	185.0	35.0
SN74AUC1G19DCKR	SC70	DCK	6	3000	202.0	201.0	28.0
SN74AUC1G19DCKT	SC70	DCK	6	250	202.0	201.0	28.0
SN74AUC1G19DRLR	SOT-5X3	DRL	6	4000	210.0	185.0	35.0
SN74AUC1G19DRLR	SOT-5X3	DRL	6	4000	202.0	201.0	28.0
SN74AUC1G19YZPR	DSBGA	YZP	6	3000	220.0	220.0	35.0

PACKAGE OUTLINE

DCK0006A

SOT - 1.1 max height

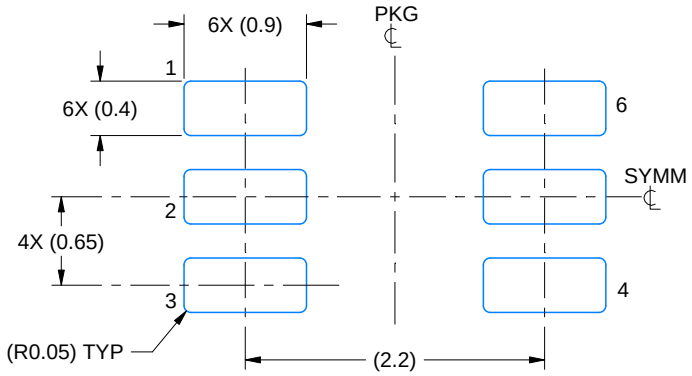
SMALL OUTLINE TRANSISTOR



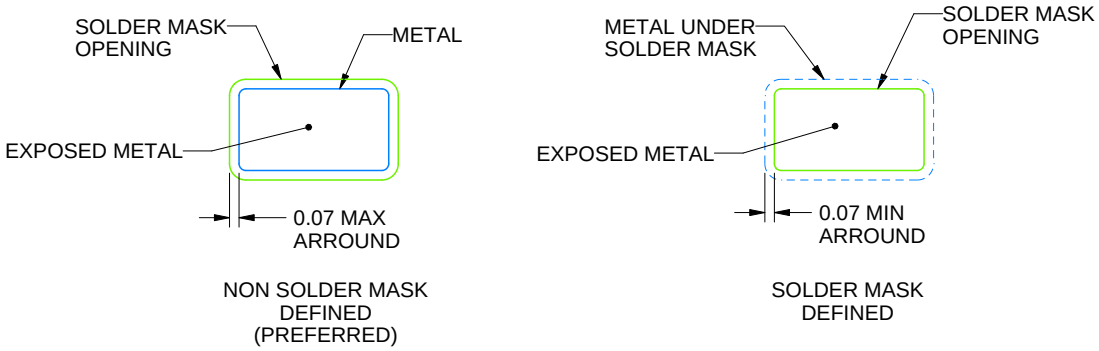
4214835/D 11/2024

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. Body dimensions do not include mold flash or protrusion. Mold flash and protrusion shall not exceed 0.15 per side.
4. Falls within JEDEC MO-203 variation AB.



LAND PATTERN EXAMPLE
EXPOSED METAL SHOWN
SCALE:18X

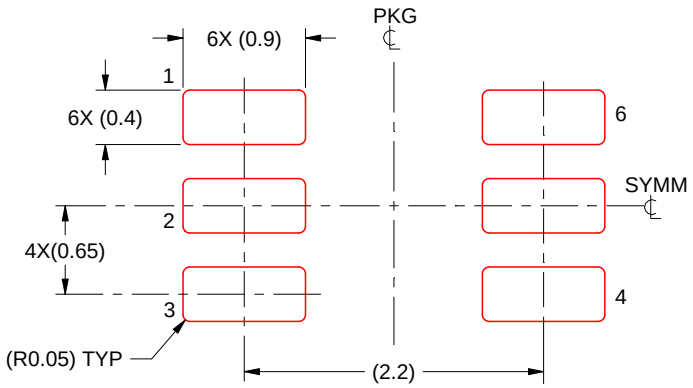


SOLDER MASK DETAILS

4214835/D 11/2024

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.



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

4214835/D 11/2024

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.

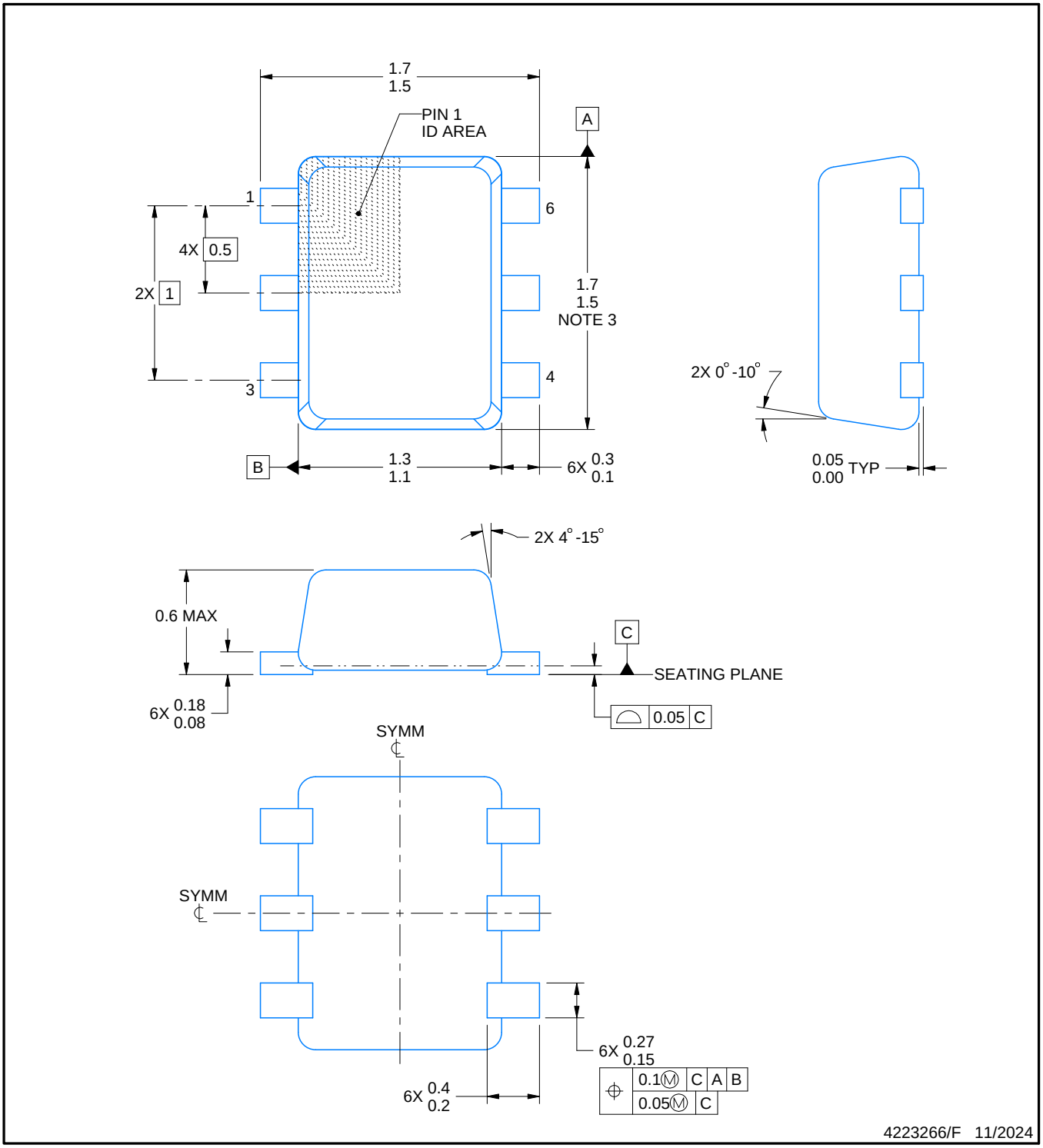


PACKAGE OUTLINE

DRL0006A

SOT - 0.6 mm max height

PLASTIC SMALL OUTLINE



NOTES:

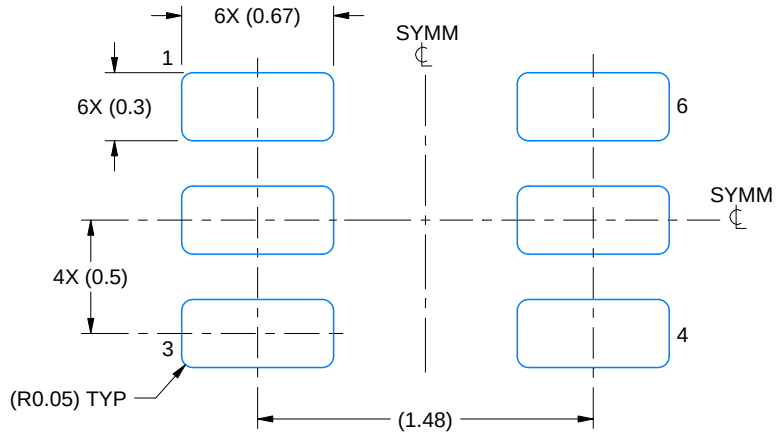
1. All linear dimensions are in millimeters. Any dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. This dimension does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or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

EXAMPLE BOARD LAYOUT

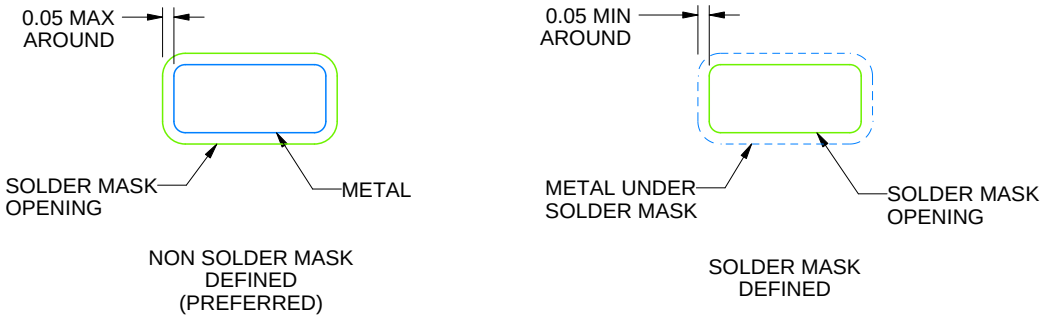
DRL0006A

SOT - 0.6 mm max height

PLASTIC SMALL OUTLINE



LAND PATTERN EXAMPLE
SCALE:30X



SOLDERMASK DETAILS

4223266/F 11/2024

NOTES: (continued)

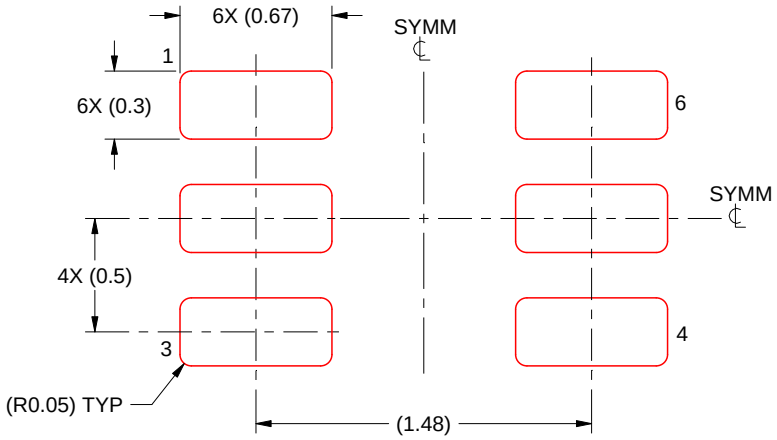
5. Publication IPC-7351 may have alternate designs.
6. Solder mask tolerances between and around signal pads can vary based on board fabrication site.
7. Land pattern design aligns to IPC-610, Bottom Termination Component (BTC) solder joint inspection criteria.

EXAMPLE STENCIL DESIGN

DRL0006A

SOT - 0.6 mm max height

PLASTIC SMALL OUTLINE



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

4223266/F 11/2024

NOTES: (continued)

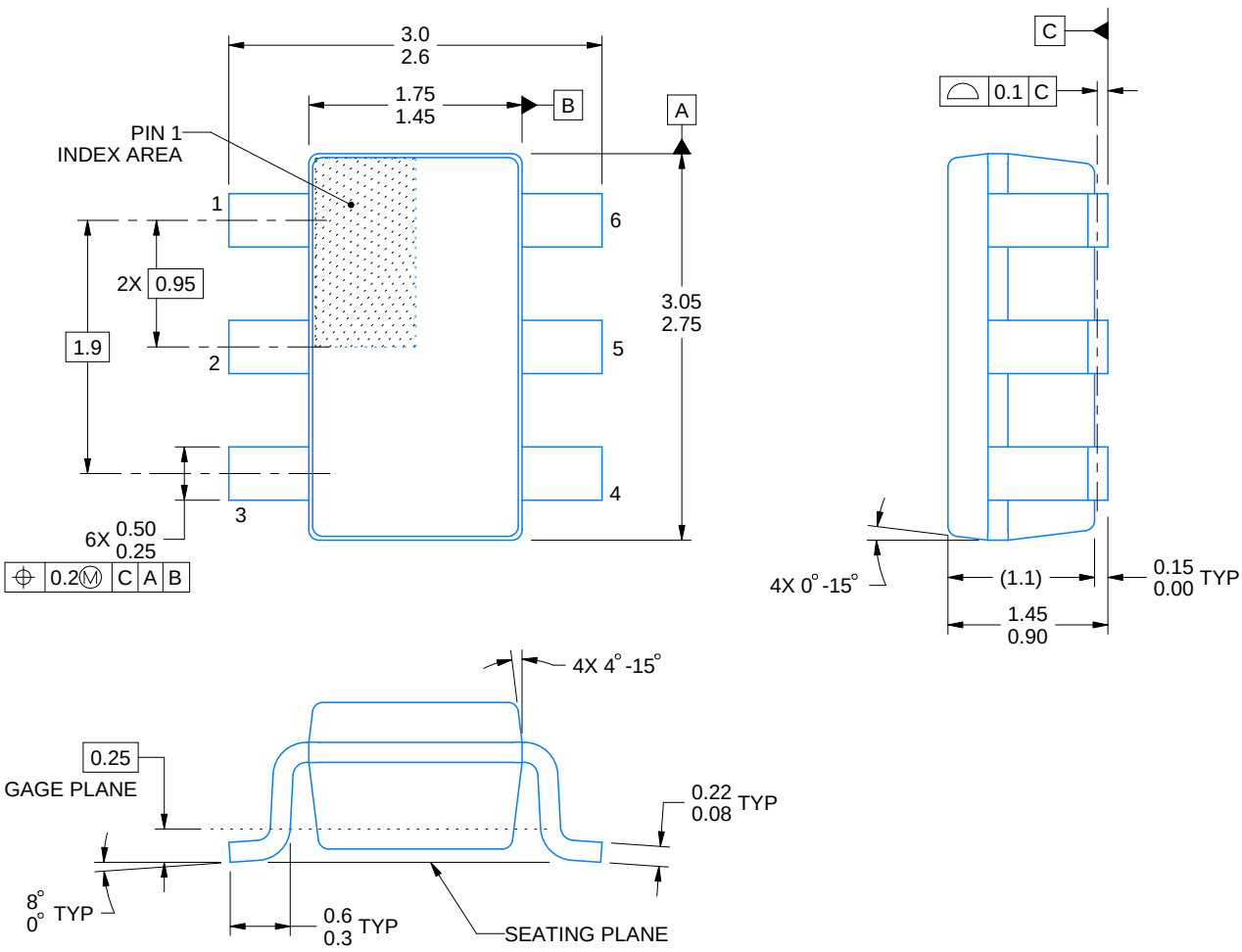
8. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.
9. Board assembly site may have different recommendations for stencil design.

PACKAGE OUTLINE

DBV0006A

SOT-23 - 1.45 mm max height

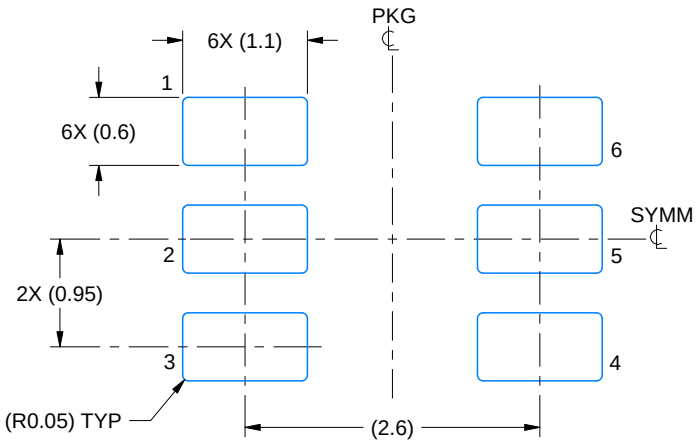
SMALL OUTLINE TRANSISTOR



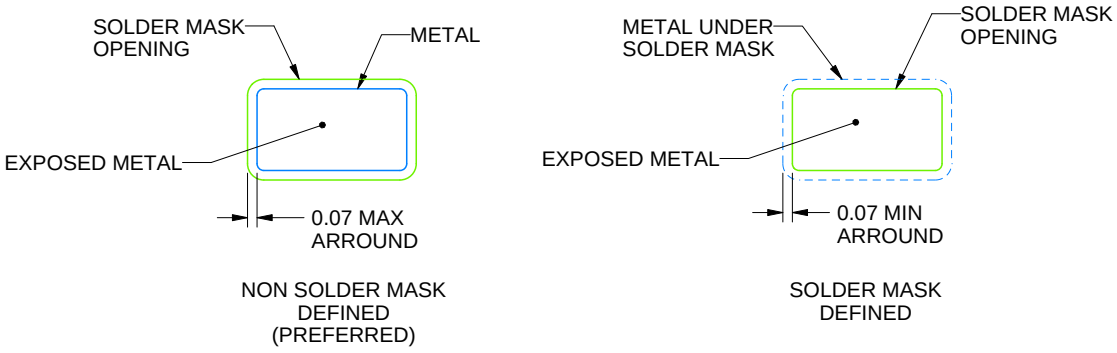
4214840/G 08/2024

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. Body dimensions do not include mold flash or protrusion. Mold flash and protrusion shall not exceed 0.25 per side.
4. Leads 1,2,3 may be wider than leads 4,5,6 for package orientation.
5. Refernce JEDEC MO-178.



LAND PATTERN EXAMPLE
EXPOSED METAL SHOWN
SCALE:15X

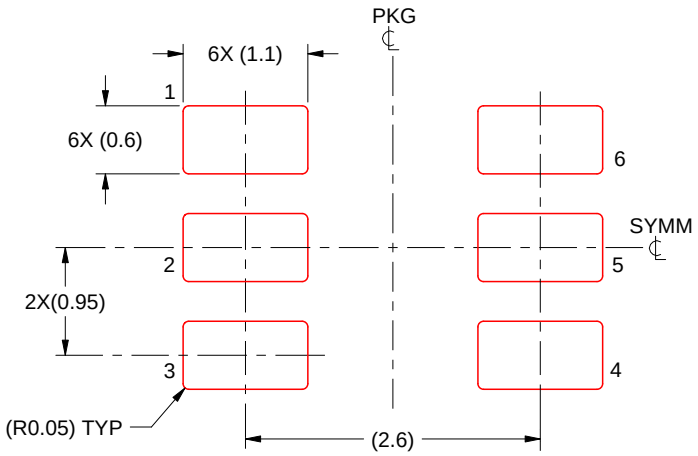


SOLDER MASK DETAILS

4214840/G 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.



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

4214840/G 08/2024

NOTES: (continued)

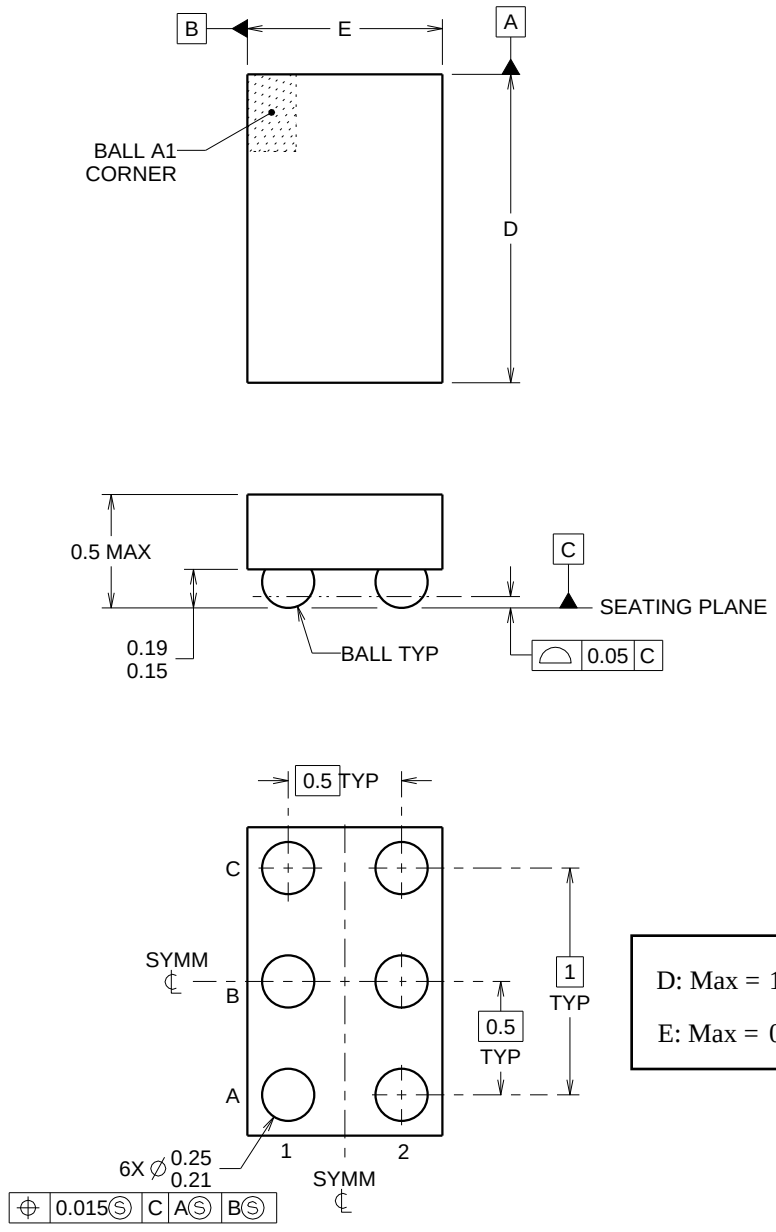
8. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.
9. Board assembly site may have different recommendations for stencil design.

PACKAGE OUTLINE

YZP0006

DSBGA - 0.5 mm max height

DIE SIZE BALL GRID ARRAY



D: Max = 1.418 mm, Min =1.358 mm

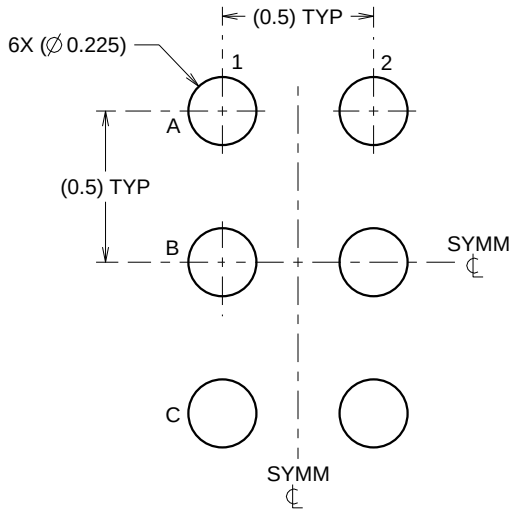
E: Max = 0.918 mm, Min =0.858 mm

4219524/A 06/2014

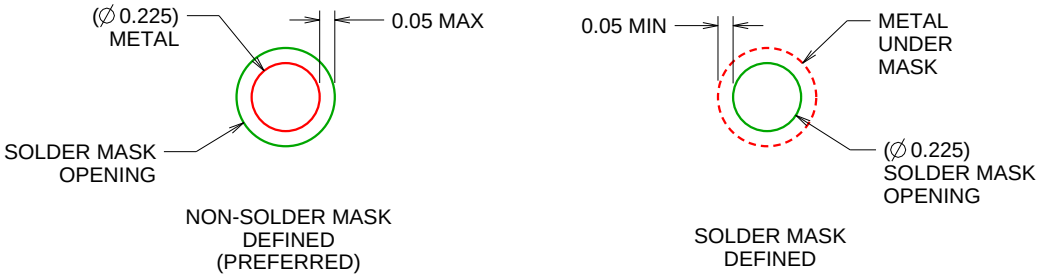
NOTES:

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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. NanoFree™ package configuration.



LAND PATTERN EXAMPLE
SCALE:40X

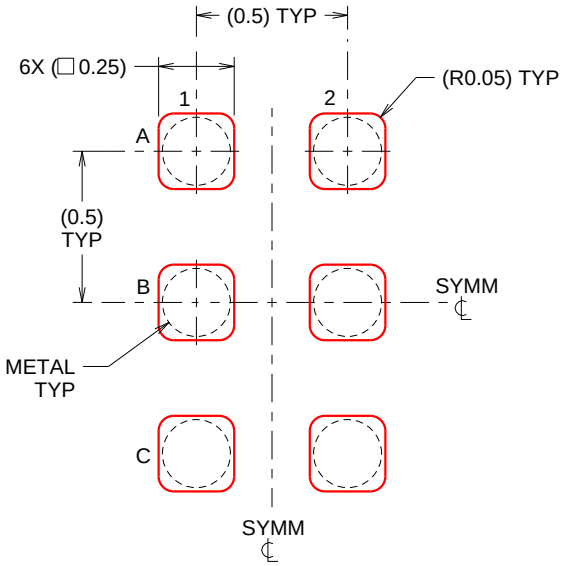


SOLDER MASK DETAILS
NOT TO SCALE

4219524/A 06/2014

NOTES: (continued)

4. Final dimensions may vary due to manufacturing tolerance considerations and also routing constraints. For more information, see Texas Instruments literature number SBVA017 (www.ti.com/lit/sbva017).



SOLDER PASTE EXAMPLE
BASED ON 0.1 mm THICK STENCIL
SCALE:40X

4219524/A 06/2014

NOTES: (continued)

5. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release.

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