

## 双路双输入正或门

查询样品: **SN74LVC2G32-Q1**

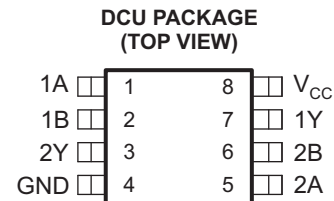
### 特性

- 符合汽车应用要求
- 具有符合 **AEC-Q100** 的下列结果:
  - 器件温度 1 级: **-40°C 至 125°C** 的环境运行温度范围
  - 器件人体模型 (HBM) 静电放电 (ESD) 分类等级 **H2**
  - 器件充电器件模型 (CDM) ESD 分类等级 **C3B**
- 输入接受的电压达到 **5.5V**
- 3.3V** 时, 最大传播 (延迟) 时间为 **3.8ns**
- 低功耗, 最大电源电流 **10μA**
- 3.3V** 时, 输出驱动 **±24mA**

- 在  $V_{CC}=3.3\text{ V}$ ,  $T_A=25^\circ\text{C}$  时, 典型电压输出低峰值 (输出地弹反射) **<0.8V**
- 在  $V_{CC}=3.3\text{ V}$ ,  $T_A=25^\circ\text{C}$  时, 典型电压输出高谷值 ( $V_{OH}$  下冲) **>2V**
- $I_{\text{关闭}}$  状态电流支持部分断电模式运行

### 应用范围

- 车载应用
- 逻辑和栅极



### 说明

这个双路上输入正或门被设计用于 **1.65V 至 5.5V** 集流器电源电压运行。

**SN74LVC2G32-Q1** 在正逻辑中  $Y = A + B$  or  $Y = \overline{A} \cdot \overline{B}$  执行布尔函数。

**NanoFree™** 封装技术是IC 封装概念的一项重大突破, 它将硅晶片用作封装。

该器件完全符合使用关闭状态电流的部分断电应用的规范要求。关闭状态电流电路禁用输出, 从而可防止其断电时破坏性电流从该器件回流。

### ORDERING INFORMATION<sup>(1)</sup>

| $T_A$          | PACKAGE <sup>(2)</sup> |              | ORDERABLE PART NUMBER | TOP-SIDE MARKING |
|----------------|------------------------|--------------|-----------------------|------------------|
| -40°C to 125°C | VSSOP - DCU            | Reel of 3000 | SN74LVC2G32QDCURQ1    | SUCQ             |

(1) For the most current package and ordering information, see the Package Option Addendum at the end of this document, or see the TI web site at [www.ti.com](http://www.ti.com).

(2) Package drawings, thermal data, and symbolization are available at [www.ti.com/packaging](http://www.ti.com/packaging).



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

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PRODUCTION DATA information is current as of publication date. Products conform to specifications per the terms of the Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

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English Data Sheet: **SCES842**

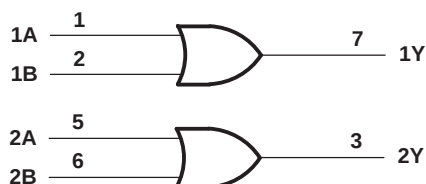


These devices have limited built-in ESD protection. The leads should be shorted together or the device placed in conductive foam during storage or handling to prevent electrostatic damage to the MOS gates.

**FUNCTION TABLE  
(EACH GATE)**

| INPUTS |   | OUTPUT |
|--------|---|--------|
| A      | B | Y      |
| H      | X | H      |
| X      | H | H      |
| L      | L | L      |

**LOGIC DIAGRAM (POSITIVE LOGIC)**



## ABSOLUTE MAXIMUM RATINGS<sup>(1)</sup>

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

|                                                                                                   | MIN                                                          | MAX            | UNIT  |
|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------|----------------|-------|
| $V_{CC}$ Supply voltage range                                                                     | -0.5                                                         | 6.5            | V     |
| $V_I$ Input voltage range <sup>(2)</sup>                                                          | -0.5                                                         | 6.5            | V     |
| $V_O$ Voltage range applied to any output in the high-impedance or power-off state <sup>(2)</sup> | -0.5                                                         | 6.5            | V     |
| $V_O$ Voltage range applied to any output in the high or low state <sup>(2) (3)</sup>             | -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                                                                   |                                                              | ±50            | mA    |
| Continuous current through $V_{CC}$ or GND                                                        |                                                              | ±100           | mA    |
| $T_{stg}$ Storage temperature range                                                               | -65                                                          | 150            | °C    |
| ESD Rating                                                                                        | Human body model (HBM) AEC-Q100 classification level H2      |                | 2 kV  |
|                                                                                                   | Charged device model (CDM) AEC-Q100 classification level C3B |                | 750 V |

- (1) Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under Recommended Operating Conditions is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.
- (2) The input negative-voltage and output voltage ratings may be exceeded if the input and output clamp-current ratings are observed.
- (3) The value of  $V_{CC}$  is provided in the recommended operating conditions table.

## THERMAL INFORMATION

| THERMAL METRIC <sup>(1)</sup> |                                              | SN74LVC2G32-Q1 | UNIT |
|-------------------------------|----------------------------------------------|----------------|------|
|                               |                                              | DCU (8 PINS)   |      |
| $\theta_{JA}$                 | Junction-to-ambient thermal resistance       | 204.4          | °C/W |
| $\theta_{JCTop}$              | Junction-to-case (top) thermal resistance    | 77             |      |
| $\theta_{JB}$                 | Junction-to-board thermal resistance         | 83.2           |      |
| $\psi_{JT}$                   | Junction-to-top characterization parameter   | 7.1            |      |
| $\psi_{JB}$                   | Junction-to-board characterization parameter | 82.7           |      |
| $\theta_{JBot}$               | Junction-to-case (bottom) thermal resistance | N/A            |      |

- (1) 有关传统和新的热 度量的更多信息，请参阅IC 封装热度量应用报告， [SPRA953](#)。

**RECOMMENDED OPERATING CONDITIONS<sup>(1)</sup>**

|                 |                                    |                                                 | MIN                    | MAX                    | UNIT |
|-----------------|------------------------------------|-------------------------------------------------|------------------------|------------------------|------|
| V <sub>CC</sub> | Supply voltage                     | Operating                                       | 1.65                   | 5.5                    | V    |
|                 |                                    | Data retention only                             | 1.5                    |                        |      |
| V <sub>IH</sub> | High-level input voltage           | V <sub>CC</sub> = 1.65 V to 1.95 V              | 0.65 × V <sub>CC</sub> |                        | V    |
|                 |                                    | V <sub>CC</sub> = 2.3 V to 2.7 V                | 1.7                    |                        |      |
|                 |                                    | V <sub>CC</sub> = 3 V to 3.6 V                  | 2                      |                        |      |
|                 |                                    | V <sub>CC</sub> = 4.5 V to 5.5 V                | 0.7 × V <sub>CC</sub>  |                        |      |
| V <sub>IL</sub> | Low-level input voltage            | V <sub>CC</sub> = 1.65 V to 1.95 V              |                        | 0.35 × V <sub>CC</sub> | V    |
|                 |                                    | V <sub>CC</sub> = 2.3 V to 2.7 V                |                        | 0.7                    |      |
|                 |                                    | V <sub>CC</sub> = 3 V to 3.6 V                  |                        | 0.8                    |      |
|                 |                                    | V <sub>CC</sub> = 4.5 V to 5.5 V                |                        | 0.3 × V <sub>CC</sub>  |      |
| 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          | V <sub>CC</sub> = 1.65 V                        |                        | –4                     | mA   |
|                 |                                    | V <sub>CC</sub> = 2.3 V                         |                        | –8                     |      |
|                 |                                    | V <sub>CC</sub> = 3 V                           |                        | –16                    |      |
|                 |                                    | V <sub>CC</sub> = 4.5 V                         |                        | –24                    |      |
| I <sub>OL</sub> | Low-level output current           | V <sub>CC</sub> = 1.65 V                        |                        | 4                      | mA   |
|                 |                                    | V <sub>CC</sub> = 2.3 V                         |                        | 8                      |      |
|                 |                                    | V <sub>CC</sub> = 3 V                           |                        | 16                     |      |
|                 |                                    | V <sub>CC</sub> = 4.5 V                         |                        | 24                     |      |
| Δt/Δv           | Input transition rise or fall rate | V <sub>CC</sub> = 1.8 V ± 0.15 V, 2.5 V ± 0.2 V |                        | 20                     | ns/V |
|                 |                                    | V <sub>CC</sub> = 3.3 V ± 0.3 V                 |                        | 10                     |      |
|                 |                                    | V <sub>CC</sub> = 5 V ± 0.5 V                   |                        | 5                      |      |
| 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*, literature number [SCBA004](#).

## ELECTRICAL CHARACTERISTICS

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

| PARAMETER        |               | TEST CONDITIONS                                                              | V <sub>CC</sub> | MIN                   | TYP <sup>(1)</sup> | MAX | UNIT |
|------------------|---------------|------------------------------------------------------------------------------|-----------------|-----------------------|--------------------|-----|------|
| V <sub>OH</sub>  |               | I <sub>OH</sub> = –100 µA                                                    | 1.65 V to 5.5 V | V <sub>CC</sub> – 0.1 |                    |     | V    |
|                  |               | I <sub>OH</sub> = –4 mA                                                      | 1.65 V          | 1.2                   |                    |     |      |
|                  |               | I <sub>OH</sub> = –8 mA                                                      | 2.3 V           | 1.9                   |                    |     |      |
|                  |               | I <sub>OH</sub> = –16 mA                                                     | 3 V             | 2.4                   |                    |     |      |
|                  |               | I <sub>OH</sub> = –24 mA                                                     |                 | 2.3                   |                    |     |      |
|                  |               | I <sub>OH</sub> = –32 mA                                                     | 4.5 V           | 3.8                   |                    |     |      |
| V <sub>OL</sub>  |               | I <sub>OL</sub> = 100 µA                                                     | 1.65 V to 5.5 V | 0.1                   |                    |     | V    |
|                  |               | I <sub>OL</sub> = 4 mA                                                       | 1.65 V          | 0.45                  |                    |     |      |
|                  |               | I <sub>OL</sub> = 8 mA                                                       | 2.3 V           | 0.3                   |                    |     |      |
|                  |               | I <sub>OL</sub> = 16 mA                                                      | 3 V             | 0.4                   |                    |     |      |
|                  |               | I <sub>OL</sub> = 24 mA                                                      |                 | 0.6                   |                    |     |      |
|                  |               | I <sub>OL</sub> = 32 mA                                                      | 4.5 V           | 0.6                   |                    |     |      |
| I <sub>I</sub>   | A or B inputs | V <sub>I</sub> = 5.5 V or GND                                                | 0 to 5.5 V      | ±5                    |                    |     | µA   |
| I <sub>off</sub> |               | V <sub>I</sub> or V <sub>O</sub> = 5.5 V                                     | 0               | ±10                   |                    |     | µA   |
| I <sub>CC</sub>  |               | V <sub>I</sub> = 5.5 V or GND, I <sub>O</sub> = 0                            | 1.65 V to 5.5 V | 10                    |                    |     | µA   |
| ΔI <sub>CC</sub> |               | One input at V <sub>CC</sub> – 0.6 V, Other inputs at V <sub>CC</sub> or GND | 3 V to 5.5 V    | 500                   |                    |     | µA   |
| C <sub>i</sub>   |               | V <sub>I</sub> = V <sub>CC</sub> or GND                                      | 3.3 V           | 5                     |                    |     | pF   |

(1) All typical values are at V<sub>CC</sub> = 3.3 V, T<sub>A</sub> = 25°C.

## SWITCHING CHARACTERISTICS

over recommended operating free-air temperature range (unless otherwise noted) (see [Figure 1](#))

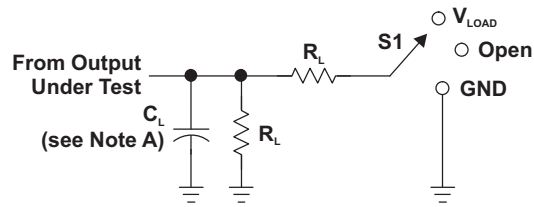
| PARAMETER       | FROM<br>(INPUT) | TO<br>(OUTPUT) | V <sub>CC</sub> = 1.8 V<br>± 0.15 V |     | V <sub>CC</sub> = 2.5 V<br>± 0.2 V |     | V <sub>CC</sub> = 3.3 V<br>± 0.3 V |     | V <sub>CC</sub> = 5 V<br>± 0.5 V |     | UNIT |
|-----------------|-----------------|----------------|-------------------------------------|-----|------------------------------------|-----|------------------------------------|-----|----------------------------------|-----|------|
|                 |                 |                | MIN                                 | MAX | MIN                                | MAX | MIN                                | MAX | MIN                              | MAX |      |
| t <sub>pd</sub> | A or B          | Y              | 2.4                                 | 11  | 1                                  | 7.5 | 1                                  | 5.8 | 1                                | 4.7 | ns   |

## OPERATING CHARACTERISTICS

T<sub>A</sub> = 25°C

| PARAMETER       |                               | TEST CONDITIONS | V <sub>CC</sub> = 1.8 V | V <sub>CC</sub> = 2.5 V | V <sub>CC</sub> = 3.3 V | V <sub>CC</sub> = 5 V | UNIT |
|-----------------|-------------------------------|-----------------|-------------------------|-------------------------|-------------------------|-----------------------|------|
|                 |                               |                 | TYP                     | TYP                     | TYP                     | TYP                   |      |
| C <sub>pd</sub> | Power dissipation capacitance | f = 10 MHz      | 17                      | 17                      | 17                      | 19                    | pF   |

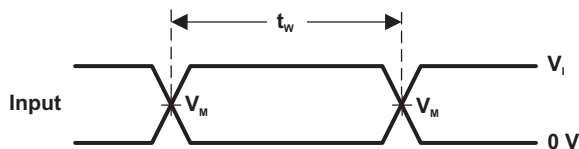
## PARAMETER MEASUREMENT INFORMATION



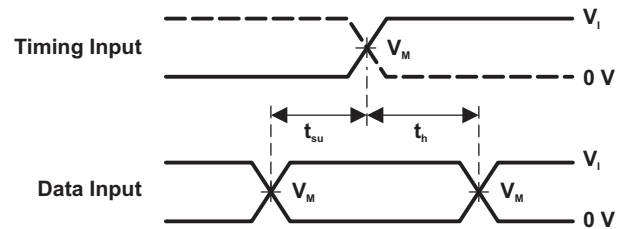
LOAD CIRCUIT

| TEST              | S1         |
|-------------------|------------|
| $t_{PLH}/t_{PHL}$ | Open       |
| $t_{PLZ}/t_{PZL}$ | $V_{LOAD}$ |
| $t_{PHZ}/t_{PZH}$ | GND        |

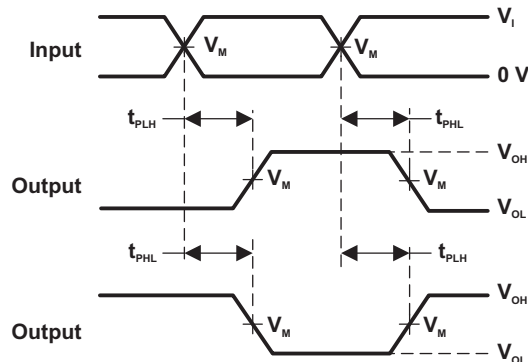
| $V_{CC}$                         | INPUTS   |                      | $V_M$      | $V_{LOAD}$        | $C_L$ | $R_L$        | $V_{\Delta}$ |
|----------------------------------|----------|----------------------|------------|-------------------|-------|--------------|--------------|
|                                  | $V_I$    | $t_f/t_r$            |            |                   |       |              |              |
| $1.8\text{ V} \pm 0.15\text{ V}$ | $V_{CC}$ | $\leq 2\text{ ns}$   | $V_{CC}/2$ | $2 \times V_{CC}$ | 30 pF | 1 k $\Omega$ | 0.15 V       |
| $2.5\text{ V} \pm 0.2\text{ V}$  | $V_{CC}$ | $\leq 2\text{ ns}$   | $V_{CC}/2$ | $2 \times V_{CC}$ | 30 pF | 500 $\Omega$ | 0.15 V       |
| $3.3\text{ V} \pm 0.3\text{ V}$  | 3 V      | $\leq 2.5\text{ ns}$ | 1.5 V      | 6 V               | 50 pF | 500 $\Omega$ | 0.3 V        |
| $5\text{ V} \pm 0.5\text{ V}$    | $V_{CC}$ | $\leq 2.5\text{ ns}$ | $V_{CC}/2$ | $2 \times V_{CC}$ | 50 pF | 500 $\Omega$ | 0.3 V        |



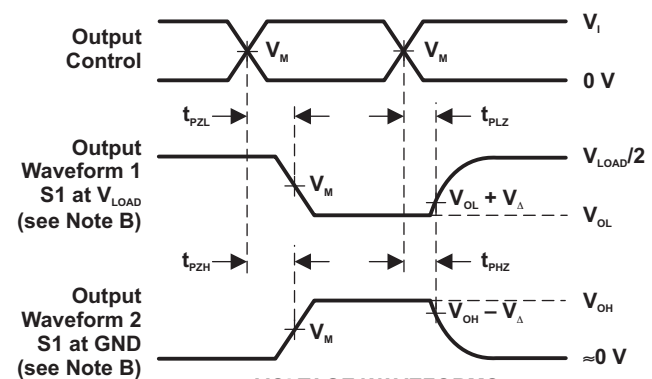
VOLTAGE WAVEFORMS  
PULSE DURATION



VOLTAGE WAVEFORMS  
SETUP AND HOLD TIMES



VOLTAGE WAVEFORMS  
PROPAGATION DELAY TIMES  
INVERTING AND NONINVERTING OUTPUTS



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

- NOTES:
- $C_L$  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  $\leq 10\text{ MHz}$ ,  $Z_o = 50\ \Omega$ .
  - The outputs are measured one at a time, with one transition per measurement.
  - $t_{PLZ}$  and  $t_{PHZ}$  are the same as  $t_{dis}$ .
  - $t_{PZL}$  and  $t_{PZH}$  are the same as  $t_{en}$ .
  - $t_{PLH}$  and  $t_{PHL}$  are the same as  $t_{pd}$ .
  - All parameters and waveforms are not applicable to all devices.

Figure 1. Load Circuit and Voltage Waveforms

## PACKAGING INFORMATION

| Orderable Device   | Status<br>(1) | Package Type | Package<br>Drawing | Pins | Package<br>Qty | Eco Plan<br>(2) | Lead finish/<br>Ball material<br>(6) | MSL Peak Temp<br>(3) | Op Temp (°C) | Device Marking<br>(4/5)  | Samples                 |
|--------------------|---------------|--------------|--------------------|------|----------------|-----------------|--------------------------------------|----------------------|--------------|--------------------------|-------------------------|
| SN74LVC2G32DCTR    | ACTIVE        | SM8          | DCT                | 8    | 3000           | RoHS & Green    | NIPDAU                               | Level-1-260C-UNLIM   | -40 to 125   | C32<br>(R, Z)            | <a href="#">Samples</a> |
| SN74LVC2G32DCTRE4  | ACTIVE        | SM8          | DCT                | 8    | 3000           | RoHS & Green    | NIPDAU                               | Level-1-260C-UNLIM   | -40 to 125   | C32<br>(R, Z)            | <a href="#">Samples</a> |
| SN74LVC2G32DCTRG4  | ACTIVE        | SM8          | DCT                | 8    | 3000           | RoHS & Green    | NIPDAU                               | Level-1-260C-UNLIM   | -40 to 125   | C32<br>(R, Z)            | <a href="#">Samples</a> |
| SN74LVC2G32DCUR    | ACTIVE        | VSSOP        | DCU                | 8    | 3000           | RoHS & Green    | NIPDAU   SN                          | Level-1-260C-UNLIM   | -40 to 125   | (C32J, C32Q, C32R)<br>CR | <a href="#">Samples</a> |
| SN74LVC2G32DCURE4  | ACTIVE        | VSSOP        | DCU                | 8    | 3000           | RoHS & Green    | NIPDAU                               | Level-1-260C-UNLIM   | -40 to 125   | C32R                     | <a href="#">Samples</a> |
| SN74LVC2G32DCURG4  | ACTIVE        | VSSOP        | DCU                | 8    | 3000           | RoHS & Green    | NIPDAU                               | Level-1-260C-UNLIM   | -40 to 125   | C32R                     | <a href="#">Samples</a> |
| SN74LVC2G32DCUT    | ACTIVE        | VSSOP        | DCU                | 8    | 250            | RoHS & Green    | NIPDAU   SN                          | Level-1-260C-UNLIM   | -40 to 125   | (C32J, C32Q, C32R)<br>CR | <a href="#">Samples</a> |
| SN74LVC2G32QDCURQ1 | ACTIVE        | VSSOP        | DCU                | 8    | 3000           | RoHS & Green    | NIPDAU                               | Level-1-260C-UNLIM   | -40 to 125   | SUCQ                     | <a href="#">Samples</a> |
| SN74LVC2G32YZPR    | ACTIVE        | DSBGA        | YZP                | 8    | 3000           | RoHS & Green    | SNAGCU                               | Level-1-260C-UNLIM   | -40 to 85    | CGN                      | <a href="#">Samples</a> |

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

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

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

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

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

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

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

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

**Green:** TI defines "Green" to mean the content of Chlorine (Cl) and Bromine (Br) based flame retardants meet JS709B low halogen requirements of <=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.

<sup>(4)</sup> 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.

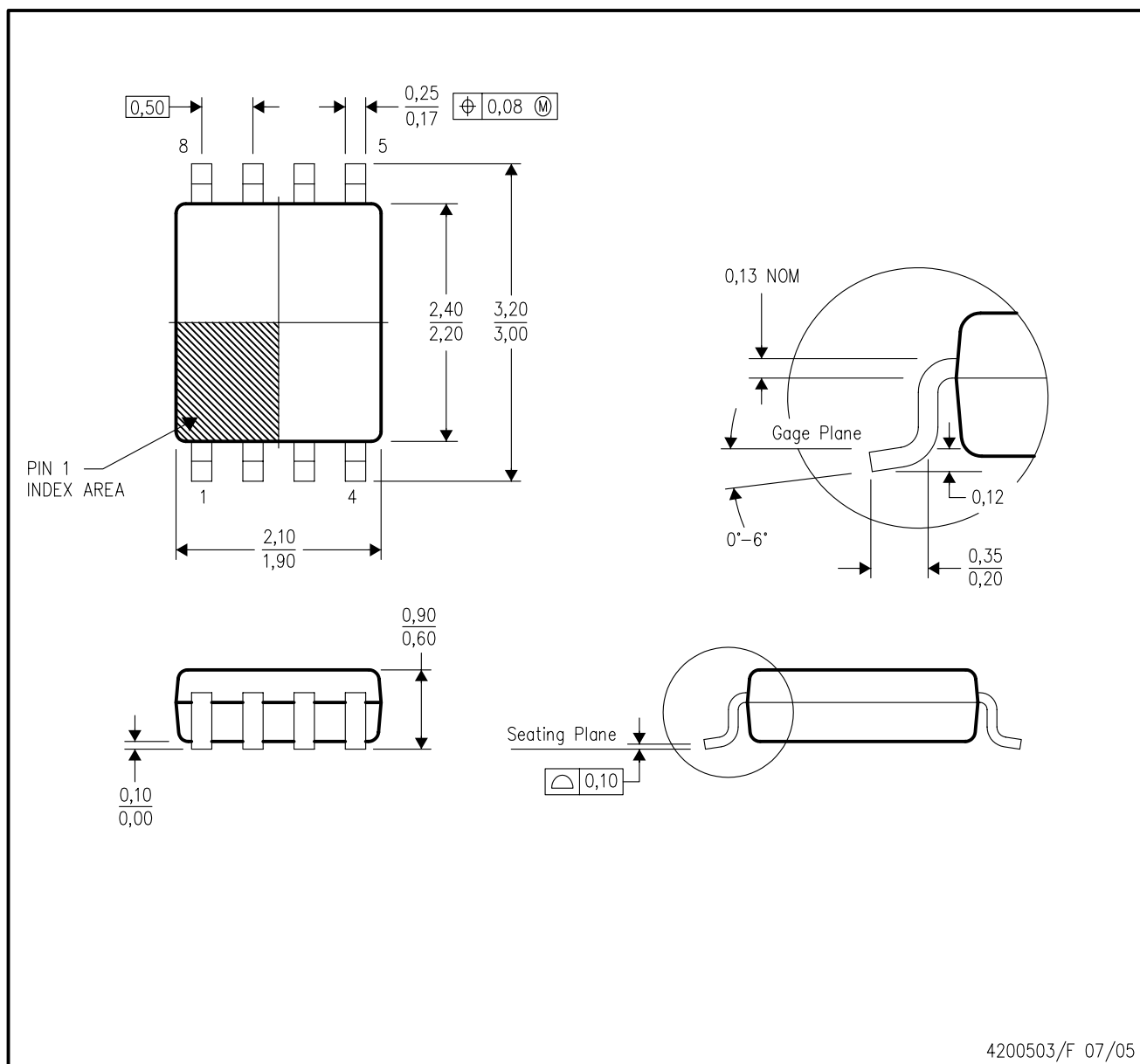
<sup>(6)</sup> Lead finish/Ball material - Orderable Devices may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead finish/Ball material values may wrap to two lines if the finish value exceeds the maximum column width.

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DCU (R-PDSO-G8)

PLASTIC SMALL-OUTLINE PACKAGE (DIE DOWN)

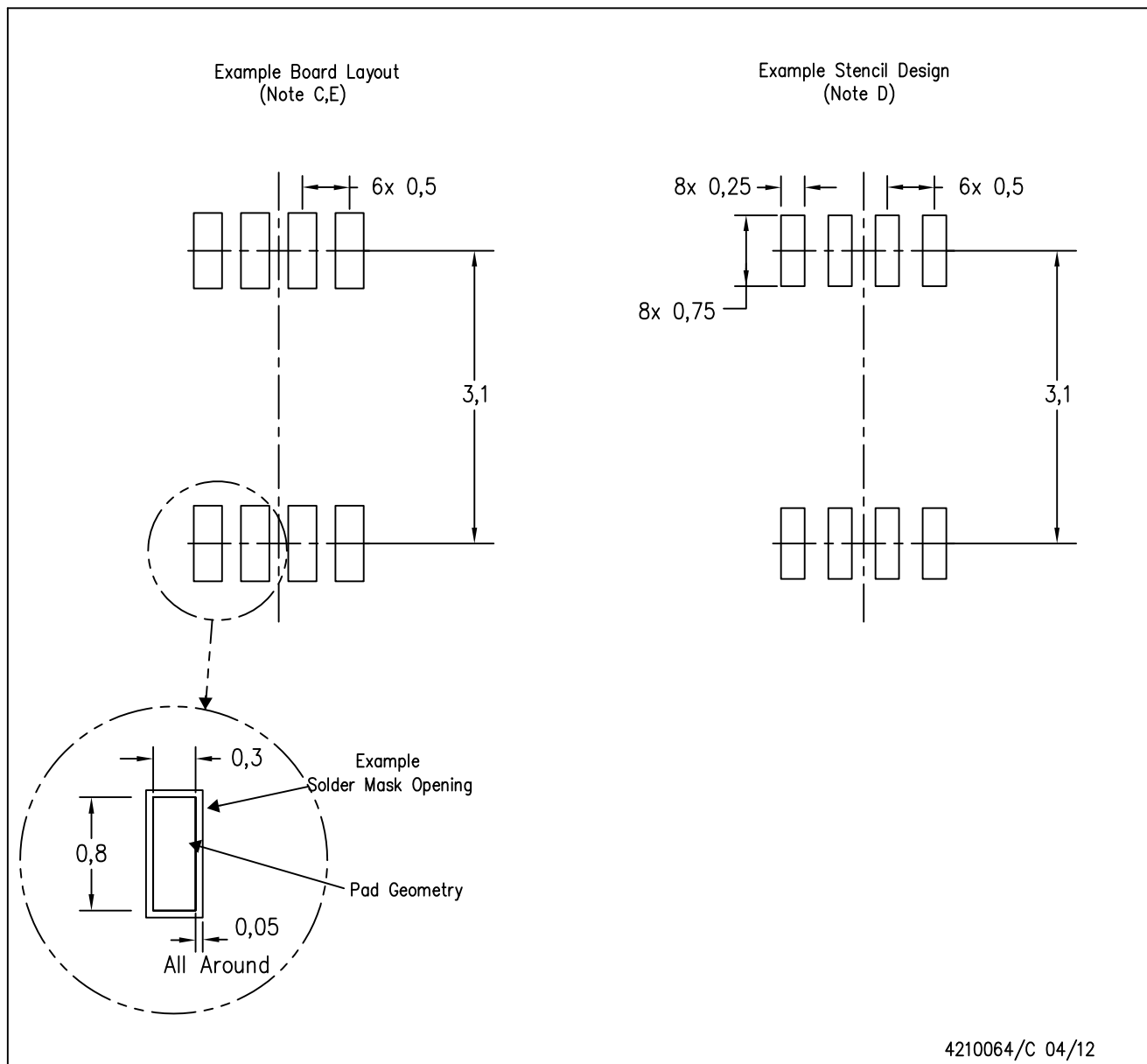


## NOTES:

- All linear dimensions are in millimeters.
- This drawing is subject to change without notice.
- Body dimensions do not include mold flash or protrusion. Mold flash and protrusion shall not exceed 0.15 per side.
- Falls within JEDEC MO-187 variation CA.

DCU (S-PDSO-G8)

PLASTIC SMALL OUTLINE PACKAGE (DIE DOWN)



- NOTES:
- A. All linear dimensions are in millimeters.
  - B. This drawing is subject to change without notice.
  - C. Publication IPC-7351 is recommended for alternate designs.
  - D. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC-7525 for other stencil recommendations.
  - E. Customers should contact their board fabrication site for solder mask tolerances between and around signal pads.

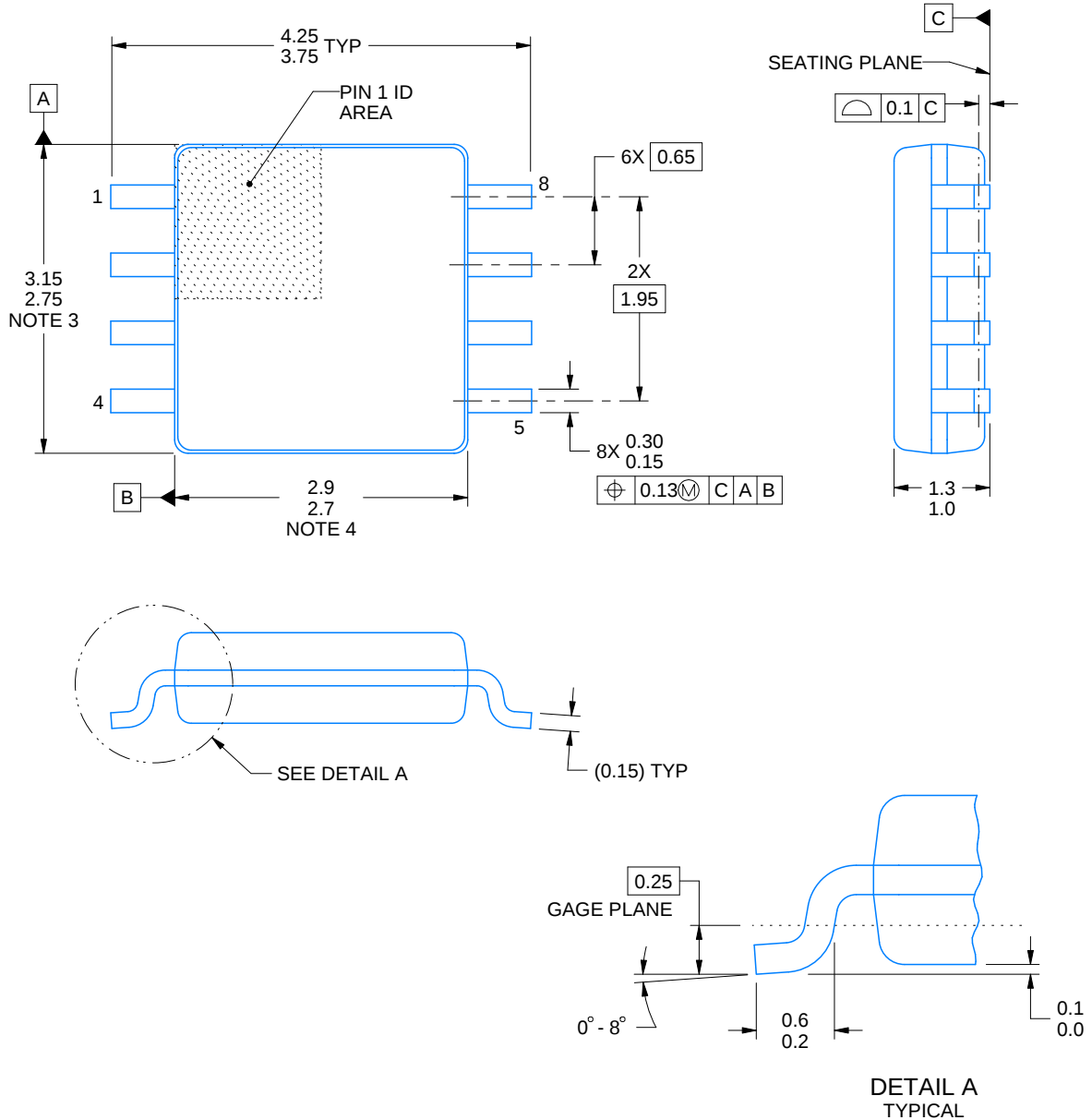


DCT0008A

# PACKAGE OUTLINE

SSOP - 1.3 mm max height

SMALL OUTLINE PACKAGE



4220784/C 06/2021

## NOTES:

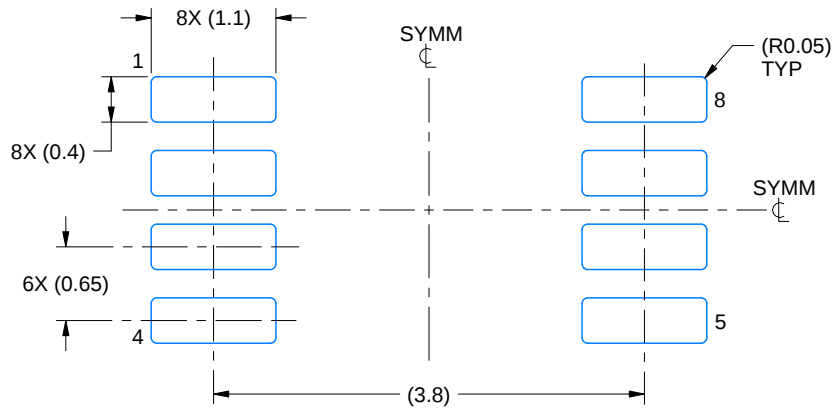
1. All linear dimensions are in millimeters. Dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. This dimension does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.15 mm per side.
4. This dimension does not include interlead flash. Interlead flash shall not exceed 0.25 mm per side.

# EXAMPLE BOARD LAYOUT

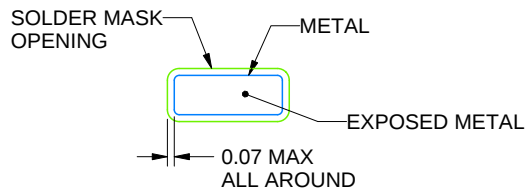
DCT0008A

SSOP - 1.3 mm max height

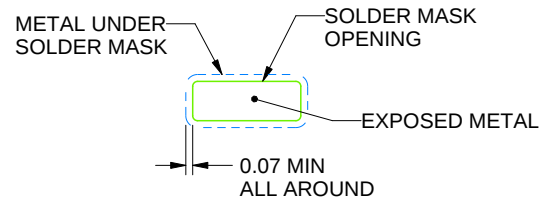
SMALL OUTLINE PACKAGE



LAND PATTERN EXAMPLE  
EXPOSED METAL SHOWN  
SCALE:15X



NON SOLDER MASK  
DEFINED



SOLDER MASK  
DEFINED

SOLDER MASK DETAILS

4220784/C 06/2021

NOTES: (continued)

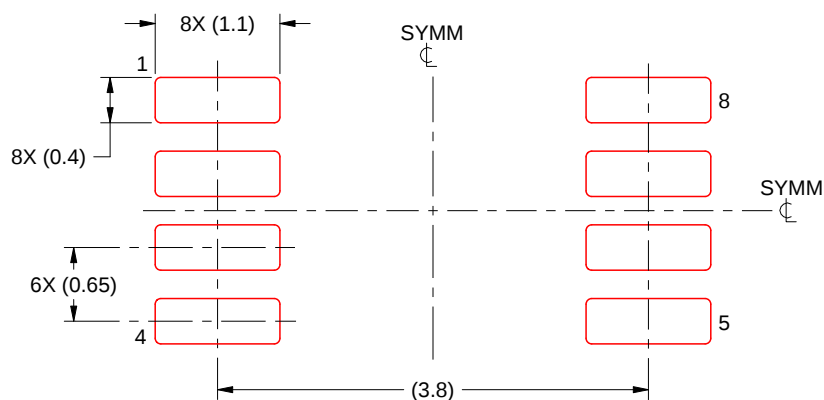
5. Publication IPC-7351 may have alternate designs.
6. Solder mask tolerances between and around signal pads can vary based on board fabrication site.

## EXAMPLE STENCIL DESIGN

DCT0008A

SSOP - 1.3 mm max height

SMALL OUTLINE PACKAGE



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

4220784/C 06/2021

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.

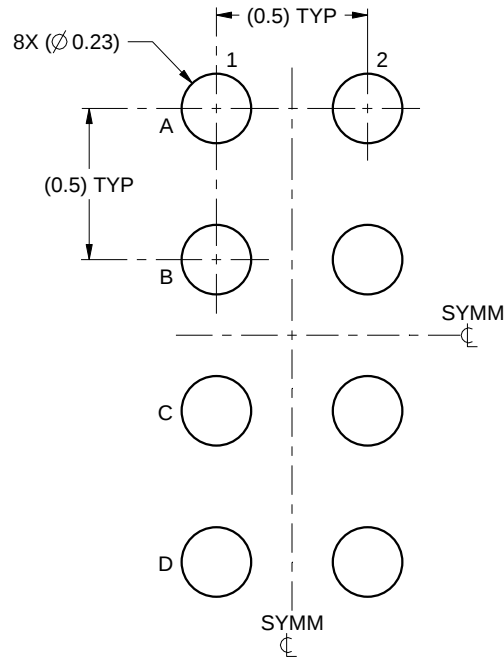


# EXAMPLE BOARD LAYOUT

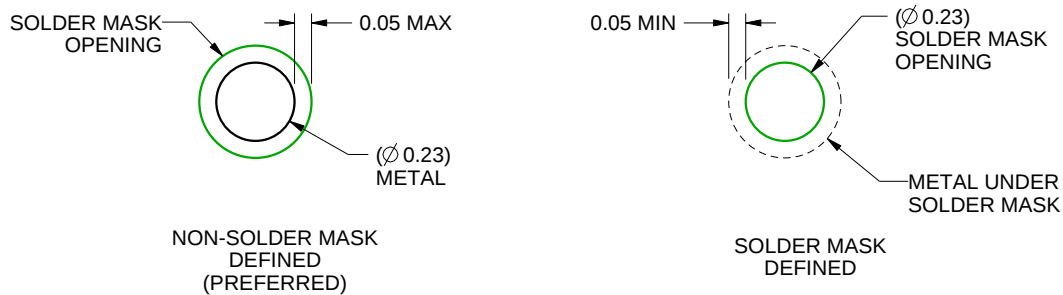
YZP0008

DSBGA - 0.5 mm max height

DIE SIZE BALL GRID ARRAY



LAND PATTERN EXAMPLE  
SCALE:40X

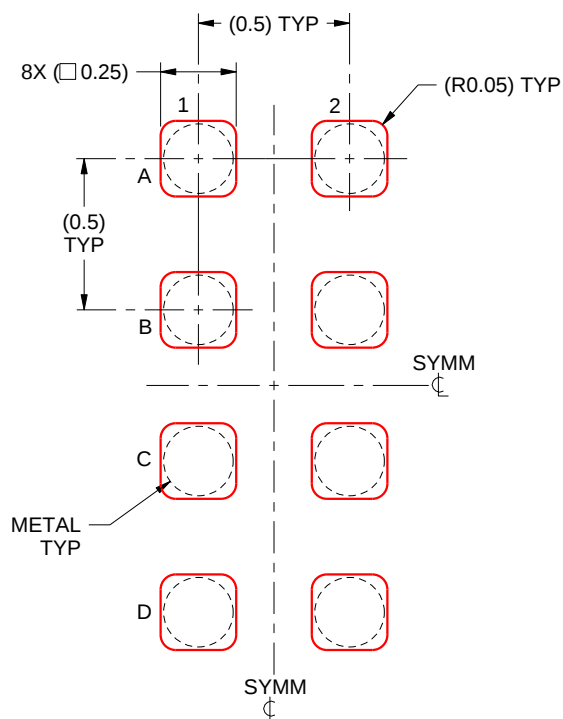


SOLDER MASK DETAILS  
NOT TO SCALE

4223082/A 07/2016

NOTES: (continued)

- Final dimensions may vary due to manufacturing tolerance considerations and also routing constraints. For more information, see Texas Instruments literature number SNVA009 ([www.ti.com/lit/snva009](http://www.ti.com/lit/snva009)).



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

4223082/A 07/2016

NOTES: (continued)

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

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