# 74LVC2G34 Dual Buffer Gate

## 1. General Description

### 1.1 Description

The 74LVC2G34 device is a dual buffer gate designed for 1.65-V to 5.5-V Vcc operation.The 74LVC2G34 device performs the Boolean function Y= A in positive logic.

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.

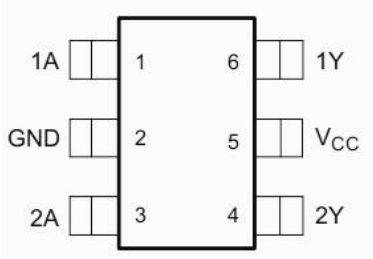
### 1.2 Features

- Supports 5.5-V VCC Operation
- Inputs Accept Voltages to 5.5 V
- Low Power Consumption, 10-μA Max ICC
- ±24-mA Output Drive at 3.3 V
- $I_{off}$ Supports Live Insertion, Partial-Power-Down Mode, and Back-Drive Protection
- Can Be Used as a Down Translator to Translate Inputs From a Maximum of 5.5 V Down to the Vcc Level

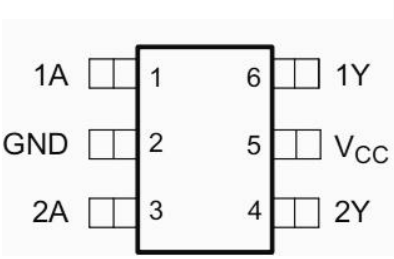
### 1.3 Device Information

| PART NUMBER | PACKAGE |
|---|---|
| 74LVC2G34 | SOT23(LT) |
| | SC70(CT) |
| | DSBGA(AG) |
| | SOT-5X3(DT) |

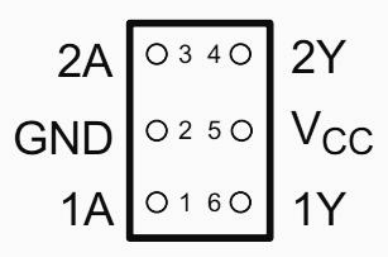
## 2. Connection Diagrams and Pin Description



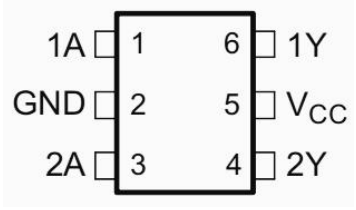

SOT23-6(LT)




SC70(CT)




DSBGA(AG)




SOT-5X3(DT)

Figure 2.1 Top View

| PIN | | I/O | FUNCTION |
|---|---|---|---|
| NAME | No. | | |
| 1A | 1 | I | Buffer input 1 |
| 1Y | 6 | O | Buffer Output 1 |
| 2A | 3 | I | Buffer input 2 |
| 2Y | 4 | O | Buffer Output 2 |
| GND | 2 | - | Ground pin |
| VCC | 5 | - | Power pin |

# 3. System Diagram

## 3.1 Logic Diagram

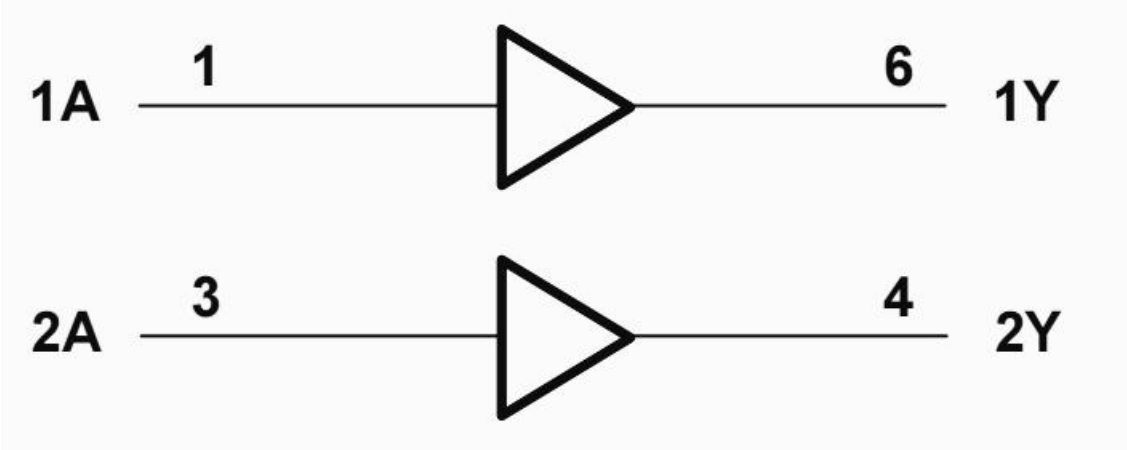



Figure 3.1：74LVC2G34 Logic Diagram

## 3.2 Function Table

| Input | Output |
|---|---|
| A | Y |
| 1 | 1 |
| 0 | 0 |

1≡High State, 0≡Low State

# 4. Specifications

## 4.1 Absolute Maximum Ratings

| Symbol | Parameter | MIN | MAX | Unit |
|---|---|---|---|---|
| $V_{CC}$ | Supply Voltage | -0.5 | 6.5 | V |
| $V_I$ | Input Voltage Range | -0.5 | 6.5 | V |
| $V_O$ | Voltage Range(applied to any output in the high-impedance or power-off state)(1) | -0.5 | 6.5 | V |
| | Voltage Range(applied to any output in the high or low state) | -0.5 | VCC + 0.5 | V |
| $I_O$ | Continuous Output Current | | ±50 | mA |
| $T_J$ | Junction Temperature | | 125 | ℃ |
| $T_{OP}$ | Operating Temperature | -40 | 85 | ℃ |

Absolute maximum ratings are those values beyond which the device could be permanently damaged,These are stress ratings only,which do not imply functional operation of the device at these or any other conditions beyond those indicated under normal operating conditions.

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

## 4.2 Recommended Operating Conditions

| Symbol | Parameter | | MIN | MAX | Unit |
|---|---|---|---|---|---|
| $V_{CC}$ | Supply Voltage | | 1.65 | 5.5 | V |
| $V_{IH}$ | High-level input voltage, control input | VCC = 1.65 V to 1.95 V | VCC × 0.65 | -- | V |
| | | VCC = 2.3 V to 2.7 V | 1.7 | -- | |
| | | VCC = 3 V to 3.6 V | VCC × 0.7 | -- | |
| | | VCC = 4.5 V to 5.5 V | VCC × 0.7 | -- | |
| $V_{IL}$ | Low-level input voltage, control input | VCC = 1.65 V to 1.95 V | -- | VCC × 0.35 | V |
| | | VCC = 2.3 V to 2.7 V | -- | 0.7 | |
| | | VCC = 3 V to 3.6 V | -- | 0.8 | |
| | | VCC = 4.5 V to 5.5 V | -- | VCC × 0.3 | |
| $I_{OH}$ | High-level output current | VCC = 1.65 V | -- | -4 | mA |
| | | VCC = 2.3 V | -- | -8 | |
| | | VCC = 3 V | -- | -16 | |
| | | | -- | -24 | |
| | | VCC = 4.5 V | -- | -32 | |
| $I_{OL}$ | Low Level Output Current | $V_{CC}$=1.65V | -- | 4 | mA |
| | | $V_{CC}$=2.3V | -- | 8 | |
| | | $V_{CC}$=3V | -- | 16 | |
| | | | -- | 24 | |
| | | $V_{CC}$=4.5V | -- | 32 | |

## 4.3 Electrical Characteristics

### 4.3.1 DC Specifications

($T_a$=25℃, voltages are referenced to GND (ground=0V), unless otherwise specified

| Symbol | Parameter | Test Condition | MIN | TYP | MAX | Unit |
|---|---|---|---|---|---|---|
| $V_{OL}$ | Low Level Output Voltage | $V_{CC}$=1.65V to 4.5V,$I_{OL}$=100uA | -- | -- | 0.1 | V |
| | | $V_{CC}$=1.65V,$I_{OL}$=4mA | -- | 0.09 | -- | V |
| | | $V_{CC}$=2.3V,$I_{OL}$=8mA | -- | 0.1 | -- | V |
| | | $V_{CC}$=3V,$I_{OL}$=16mA | -- | 0.15 | -- | V |
| | | $V_{CC}$=3V,$I_{OL}$=24mA | -- | 0.25 | -- | V |
| | | $V_{CC}$=4.5V,$I_{OL}$=32mA | -- | 0.25 | -- | V |
| $V_{OH}$ | High Level Output Voltage | $V_{CC}$=1.65V to 4.5V,$I_{OH}$=100uA | $V_{CC}$-0.1 | -- | -- | V |
| | | $V_{CC}$=1.65V,$I_{OH}$=4mA | -- | 1.47 | -- | V |
| | | $V_{CC}$=2.3V,$I_{OH}$=8mA | -- | 2.15 | -- | V |
| | | $V_{CC}$=3V,$I_{OH}$=16mA | -- | 2.8 | -- | V |
| | | $V_{CC}$=3V,$I_{OH}$=24mA | -- | 2.7 | -- | V |
| | | $V_{CC}$=4.5V,$I_{OH}$=32mA | -- | 4.2 | -- | V |
| $I_I$ | A Inputs Leakage Current | $V_{CC}$=0 to 5.5V,$V_I$=5.5Vor GND | -- | -- | ±1 | uA |
| $I_{off}$ | Power Off Leakage Current | $V_{CC}$=0V,$V_I$ or $V_O$=5.5V | -- | -- | ±10 | uA |
| $I_{CC}$ | Quiescent Supply Current | $V_{CC}$=1.65V to 5.5V,$V_I$=5.5V or GND,$I_O$=0 | -- | 0 | 10 | uA |
| $\Delta I_{CC}$ | Additional Quiescent Supply Current Per Input Pin | $V_{CC}$=3V to 5.5V,one input at $V_{CC}$ -0.6V,Other inputs at $V_{CC}$ or GND | -- | -- | 500 | uA |

# 5. Application Information

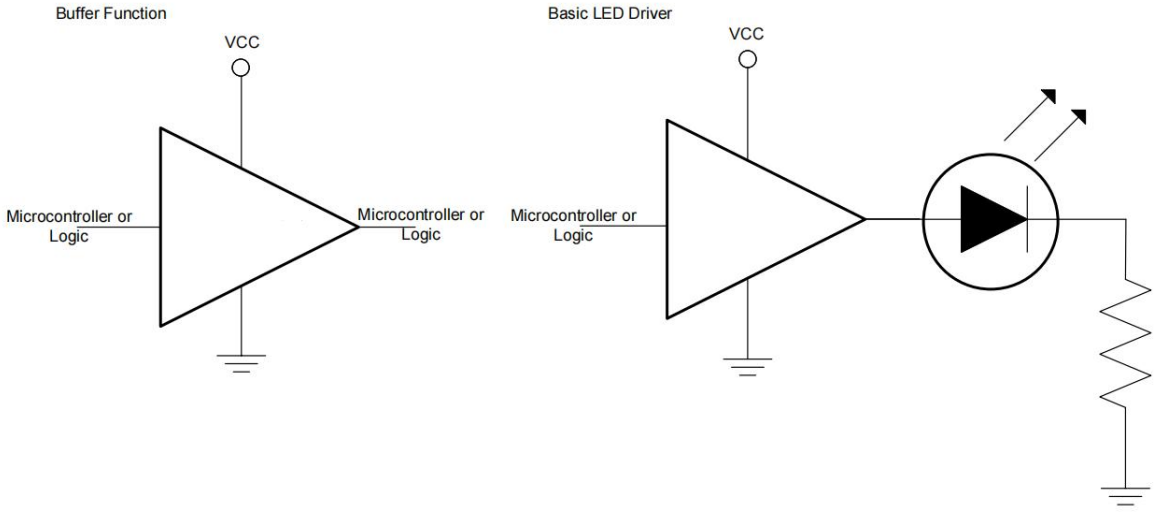


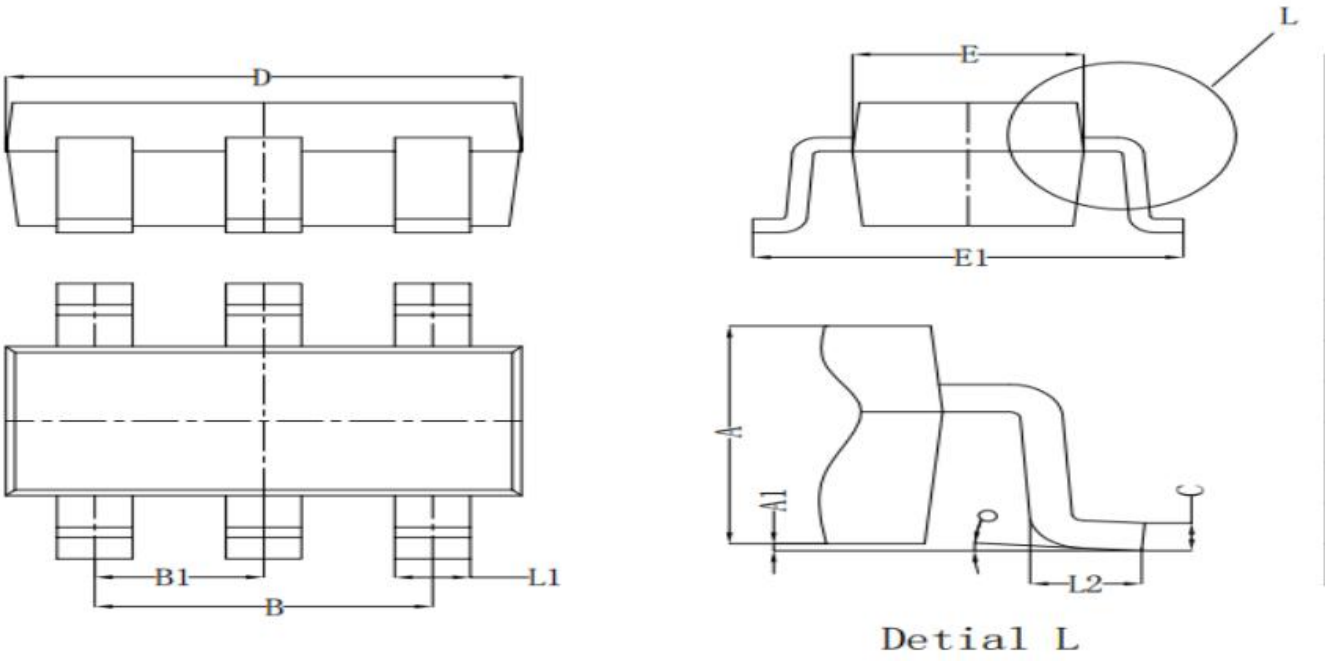

Figure 5.1：Application Schematic

# 6. Ordering Information

| Orderable Device | Package Type | Pins | Packing | Package Qty |
|---|---|---|---|---|
| 74LVC2G34LT06ARCQ | SOT23 | 6 | Tape & Reel | 3000 |
| 74LVC2G34CT06ARCQ | SC70 | 6 | Tape & Reel | 3000 |
| 74LVC2G34AG06ARCQ | DSBGA | 6 | Tape & Reel | 3000 |
| 74LVC2G34DT06ARDQ | SOT-5X3 | 6 | Tape & Reel | 4000 |

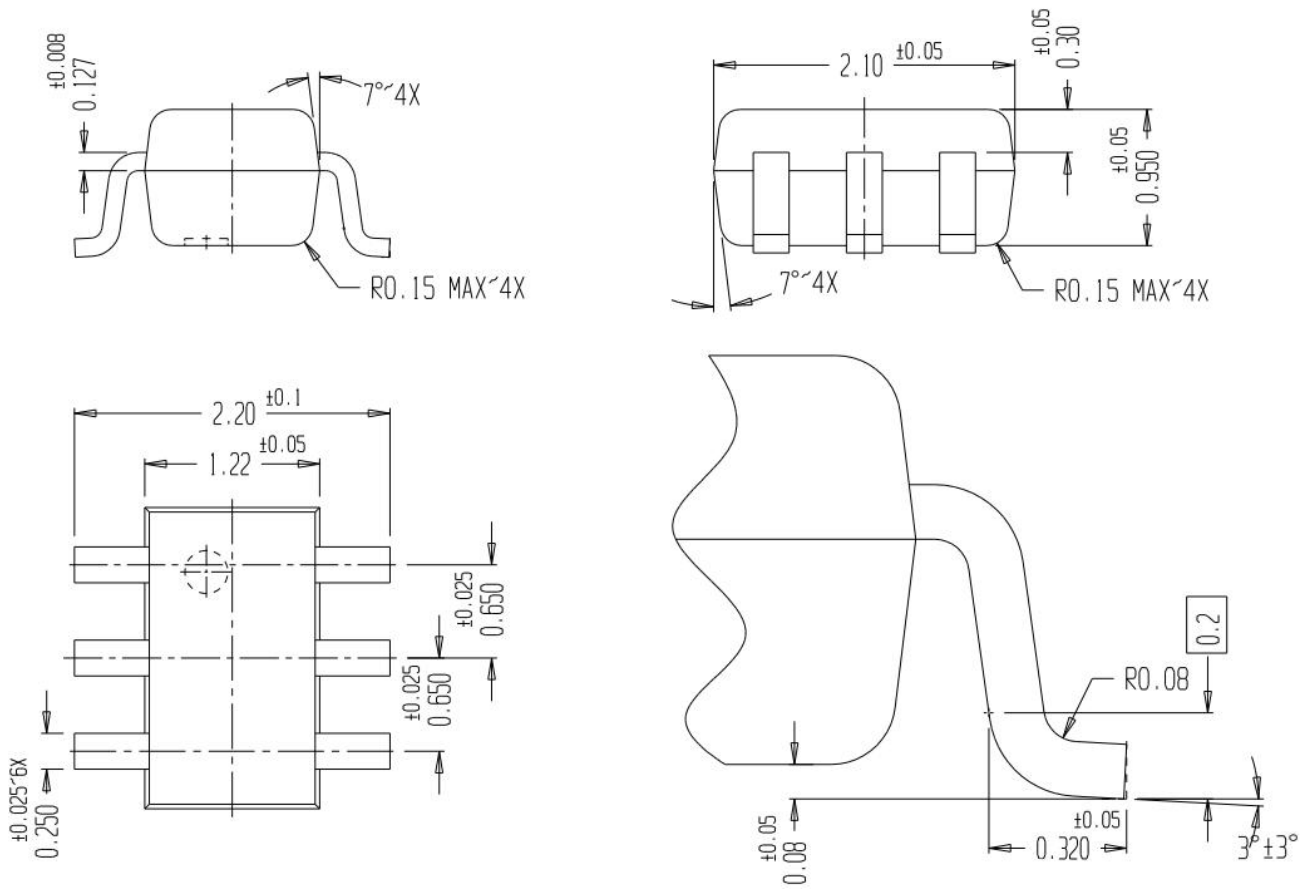
# 7. Package Information

## 7.1 SOT23-6

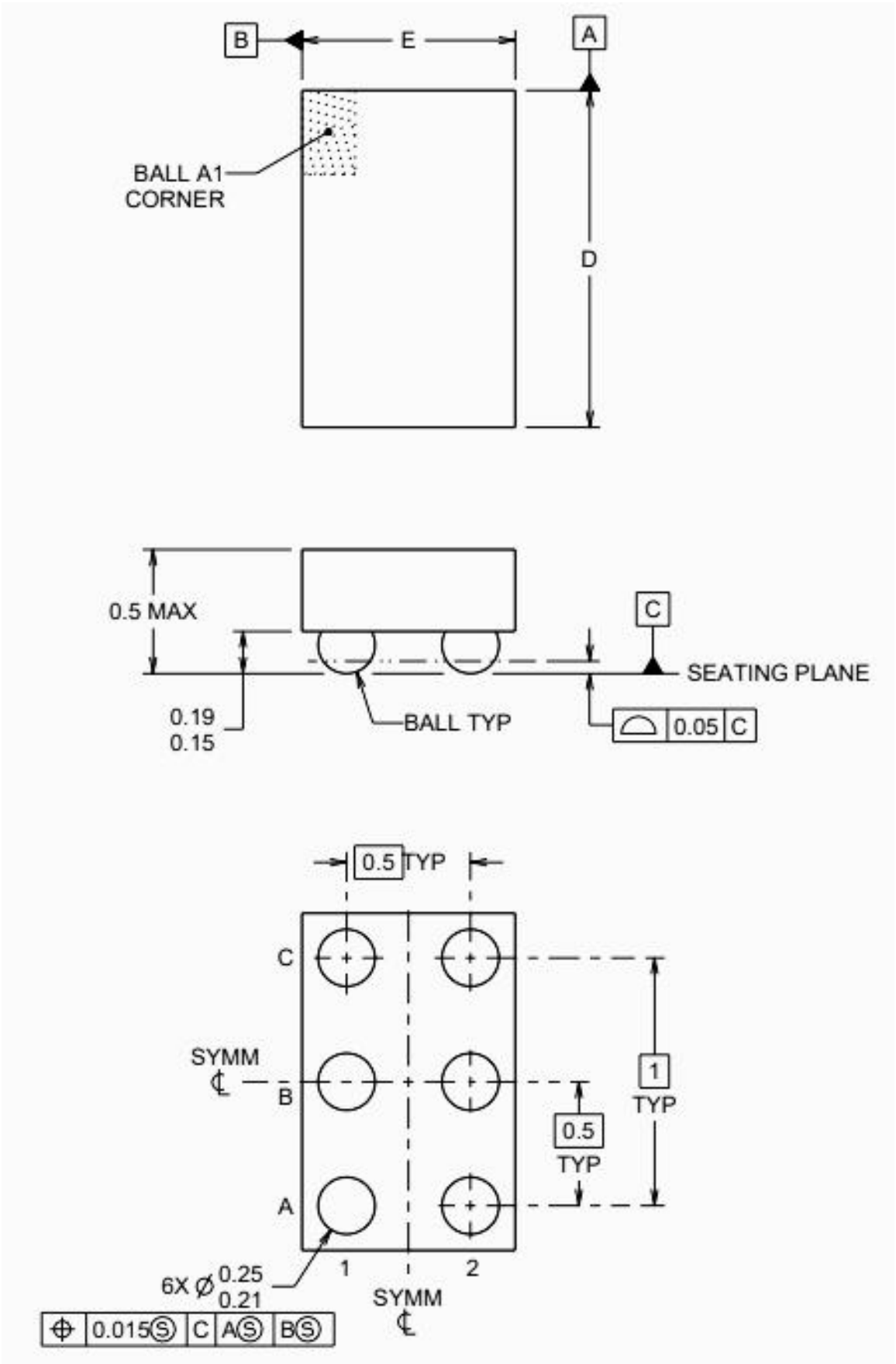



| Symbol | Dim in mm | | |
|---|---|---|---|
| | Min | Nor | Max |
| A | 1.050 | 1.100 | 1.150 |
| A1 | 0.000 | 0.050 | 0.100 |
| L1 | 0.300 | 0.400 | 0.500 |
| C | 0.100 | 0.150 | 0.200 |
| D | 2.820 | 2.920 | 3.020 |
| E | 1.500 | 1.600 | 1.700 |
| E1 | 2.650 | 2.800 | 2.950 |
| B | 1.800 | 1.900 | 2.000 |
| B1 | 0.950 TYP | | |
| L2 | 0.300 | 0.450 | 0.600 |
| o | 0° | 4° | 8° |

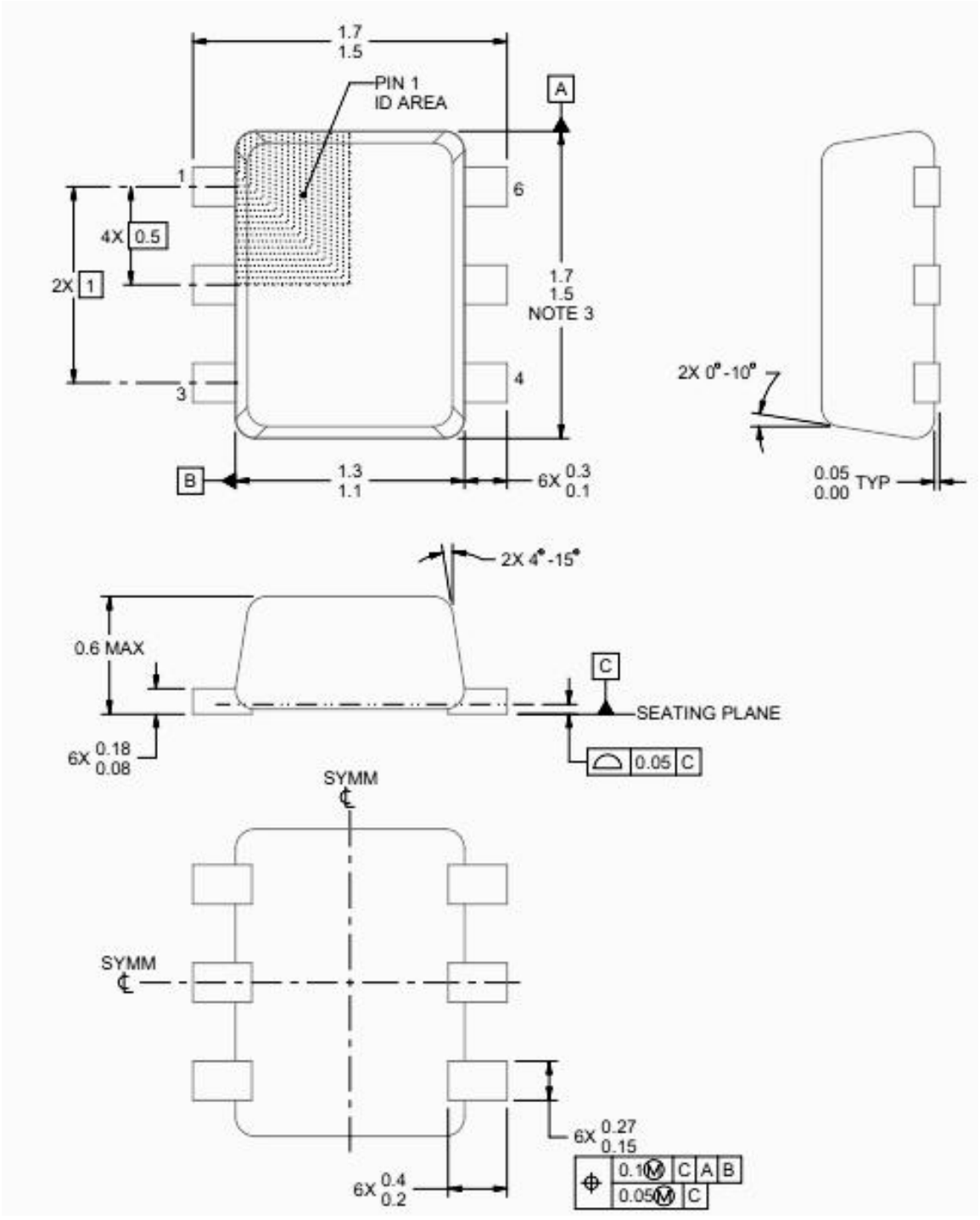
## 7.2 SC70-6


±0.008
0.127
7°~4X
R0.15 MAX~4X
2.10 ±0.05
±0.05
0.30
±0.05
0.950
7°~4X
R0.15 MAX~4X
2.20 ±0.1
1.22 ±0.05
±0.025
0.650
±0.025
0.650
±0.025~6X
0.250
0.2
R0.08
±0.05
0.08
±0.05
0.320
3°±3°

## 7.3 DSBGA(AG)-6


B
E
A
BALL A1
CORNER
D
0.5 MAX
C
SEATING PLANE
0.19
0.15
BALL TYP
0.05 C
0.5 TYP
C
SYMM
B
A
1
TYP
0.5
TYP
6X Ø 0.25
0.21
1
2
SYMM
0.015 S C A S B S

## 7.4 SOT5X3-6


1.7
1.5
PIN 1
ID AREA
A
1
6
4X 0.5
2X 1
1.7
1.5
NOTE 3
3
4
B
1.3
1.1
6X 0.3
0.1
2X 0°-10°
0.05
0.00
TYP
2X 4°-15°
0.6 MAX
C
SEATING PLANE
6X 0.18
0.08
0.05 C
SYMM
SYMM
6X 0.27
0.15
6X 0.4
0.2
0.10 M C A B
0.05 M C