# 74CBTLV1G125

## Single bus switch

Rev. 7.1 — 12 February 2022 Product data sheet

## 1. General description

The 74CBTLV1G125 is a single high-speed line switch. The switch is disabled when the output enable ($\overline{OE}$) input is high.

To ensure the high-impedance OFF-state during power-up or power-down, tie $\overline{OE}$ to the $V_{CC}$ through a pull-up resistor. The current-sinking capability of the driver determines the minimum value of the resistor.

Schmitt-trigger action at control inputs makes the circuit tolerant of slower input rise and fall times. This device is fully specified for partial power down applications using $I_{OFF}$. The $I_{OFF}$ circuitry disables the output, preventing the potentially damaging backflow current through the device when it is powered down.

## 2. Features and benefits

- Supply voltage range from 2.3 V to 3.6 V
- Overvoltage tolerant control inputs to 3.6 V
- High noise immunity
- Complies with JEDEC standard:
  - JESD8-5 (2.3 V to 2.7 V)
  - JESD8C (2.7 V to 3.6 V)
- ESD protection:
  - HBM JESD22-A114F exceeds 2000 V
  - MM JESD22-A115-A exceeds 200 V
  - CDM JESD22-C101E exceeds 1000 V
- 5 Ω switch connection between two ports
- Rail to rail switching on data I/O ports
- CMOS low power consumption
- Latch-up performance meets requirements of JESD78 Class I
- $I_{OFF}$ circuitry provides partial Power-down mode operation
- Multiple package options
- Specified from -40 °C to +85 °C and -40 °C to +125 °C

## 3. Ordering information

**Table 1. Ordering information**

| Type number | Package | | | |
|---|---|---|---|---|
| | Temperature range | Name | Description | Version |
| 74CBTLV1G125GW | -40 °C to +125 °C | TSSOP5 | plastic thin shrink small outline package; 5 leads; body width 1.25 mm | SOT353-1 |
| 74CBTLV1G125GV | -40 °C to +125 °C | SC-74A | plastic surface-mounted package; 5 leads | SOT753 |
| 74CBTLV1G125GM | -40 °C to +125 °C | XSON6 | plastic extremely thin small outline package; no leads; 6 terminals; body 1 × 1.45 × 0.5 mm | SOT886 |
| 74CBTLV1G125GN | -40 °C to +125 °C | XSON6 | extremely thin small outline package; no leads; 6 terminals; body 0.9 × 1.0 × 0.35 mm | SOT1115 |
| 74CBTLV1G125GS | -40 °C to +125 °C | XSON6 | extremely thin small outline package; no leads; 6 terminals; body 1.0 × 1.0 × 0.35 mm | SOT1202 |

## 4. Marking

**Table 2. Marking**

| Type number | Marking code [1] |
|---|---|
| 74CBTLV1G125GW | bM |
| 74CBTLV1G125GV | b25 |
| 74CBTLV1G125GM | bM |
| 74CBTLV1G125GN | bM |
| 74CBTLV1G125GS | bM |

[1] The pin 1 indicator is located on the lower left corner of the device, below the marking code.

## 5. Functional diagram

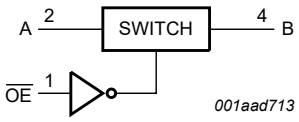



Fig. 1. Logic symbol

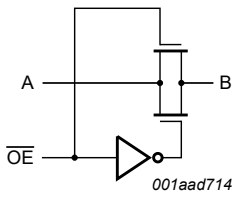



Fig. 2. Logic diagram

# 6. Pinning information

## 6.1. Pinning

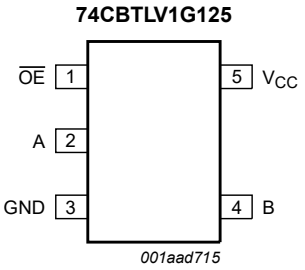
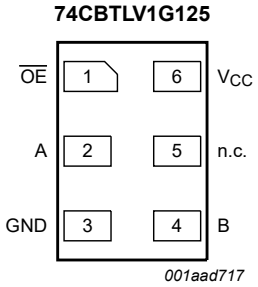
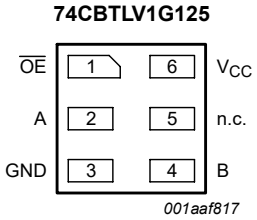



Fig. 3. Pin configuration SOT353-1 (TSSOP5) and SOT753 (SC-74A)




Transparent top view

Fig. 4. Pin configuration SOT886 (XSON6)




Transparent top view

Fig. 5. Pin configuration SOT1115 and SOT1202 (XSON6)

## 6.2. Pin description

**Table 3. Pin description**

| Symbol | Pin | | Description |
|---|---|---|---|
| | SOT353-1 and SOT753 | SOT886, SOT1115 and SOT1202 | |
| $\overline{OE}$ | 1 | 1 | output enable input $\overline{OE}$ (active LOW) |
| A | 2 | 2 | data input or output A |
| GND | 3 | 3 | ground (0 V) |
| B | 4 | 4 | data input or output B |
| n.c. | - | 5 | not connected |
| $V_{CC}$ | 5 | 6 | supply voltage |

# 7. Functional description

**Table 4. Function table**

*H = HIGH voltage level; L = LOW voltage level.*

| Output enable input $\overline{OE}$ | Function switch |
|---|---|
| L | ON-state |
| H | OFF-state |

# 8. Limiting values

**Table 5. Limiting values**

*In accordance with the Absolute Maximum Rating System (IEC 60134). Voltages are referenced to GND (ground = 0 V).*

| Symbol | Parameter | Conditions | Min | Max | Unit |
|---|---|---|---|---|---|
| $V_{CC}$ | supply voltage | | -0.5 | +4.6 | V |
| $V_I$ | input voltage | [1] | -0.5 | +4.6 | V |
| $V_{SW}$ | switch voltage | enable and disable mode | -0.5 | $V_{CC}$ + 0.5 | V |
| $I_{IK}$ | input clamping current | $V_{I/O}$ < -0.5 V | -50 | - | mA |
| $I_{SK}$ | switch clamping current | $V_I$ < -0.5 V or $V_I$ > $V_{CC}$ + 0.5 V | - | ±50 | mA |
| $I_{SW}$ | switch current | $V_{SW}$ = 0 V to $V_{CC}$ | - | ±128 | mA |
| $I_{CC}$ | supply current | | - | +50 | mA |
| $I_{GND}$ | ground current | | -50 | - | mA |
| $T_{stg}$ | storage temperature | | -65 | +150 | °C |
| $P_{tot}$ | total power dissipation | $T_{amb}$ = -40 °C to +125 °C [2] | - | 250 | mW |

[1] The minimum input and output voltage ratings may be exceeded if the input and output current ratings are observed.

[2] For SOT353-1 (TSSOP5) package: $P_{tot}$ derates linearly with 3.3 mW/K above 74 °C.
For SOT753 (SC-74A) package: $P_{tot}$ derates linearly with 3.8 mW/K above 85 °C.
For SOT886 (XSON6) package: $P_{tot}$ derates linearly with 3.3 mW/K above 74 °C.
For SOT1115 (XSON6) package: $P_{tot}$ derates linearly with 3.2 mW/K above 71 °C.
For SOT1202 (XSON6) package: $P_{tot}$ derates linearly with 3.3 mW/K above 74 °C.

# 9. Recommended operating conditions

**Table 6. Recommended operating conditions**

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| $V_{CC}$ | supply voltage | | 2.3 | - | 3.6 | V |
| $V_I$ | input voltage | | 0 | - | 3.6 | V |
| $V_{SW}$ | switch voltage | enable and disable mode | 0 | - | $V_{CC}$ | V |
| $T_{amb}$ | ambient temperature | | -40 | - | +125 | °C |
| Δt/ΔV | input transition rise and fall rate | $V_{CC}$ = 2.3 V to 3.6 V [1] | 0 | - | 20 | ns/V |

[1] Applies to control signal levels.

## 10. Static characteristics

**Table 7. Static characteristics**

*At recommended operating conditions; voltages are referenced to GND (ground = 0 V).*

| Symbol | Parameter | Conditions | Min | Typ[1] | Max | Unit |
|---|---|---|---|---|---|---|
| **$T_{amb}$ = -40 °C to +85 °C** | | | | | | |
| $V_{IH}$ | HIGH-level input voltage | $V_{CC}$ = 2.3 V to 2.7 V | 1.7 | - | - | V |
| | | $V_{CC}$ = 2.7 V to 3.6 V | 2.0 | - | - | V |
| $V_{IL}$ | LOW-level input voltage | $V_{CC}$ = 2.3 V to 2.7 V | - | - | 0.7 | V |
| | | $V_{CC}$ = 2.7 V to 3.6 V | - | - | 0.8 | V |
| $I_I$ | input leakage current | $V_I$ = GND to $V_{CC}$; $V_{CC}$ = 3.6 V | - | - | ±1.0 | µA |
| $I_{S(OFF)}$ | OFF-state leakage current | $V_I$ = $V_{IH}$ or $V_{IL}$; $V_O$ = $V_{CC}$ - GND; $V_{CC}$ = 3.6 V; see Fig. 6 | - | ±0.1 | ±5 | µA |
| $I_{S(ON)}$ | ON-state leakage current | $V_I$ = $V_{IH}$ or $V_{IL}$; $V_{CC}$ = 3.6 V; see Fig. 7 | - | ±0.1 | ±5 | µA |
| $I_{OFF}$ | power-off leakage current | $V_I$ or $V_O$ = 0 V to 3.6 V; $V_{CC}$ = 0 V | - | - | ±10 | µA |
| $I_{CC}$ | supply current | $V_I$ = GND or $V_{CC}$; $I_O$ = 0 A; $V_{CC}$ = 3.6 V | - | - | 10 | µA |
| $\Delta I_{CC}$ | additional supply current | control input; $V_I$ = $V_{CC}$ - 0.6 V; $V_{CC}$ = 3.6 V [2] | - | - | 300 | µA |
| $C_I$ | input capacitance | control input; $V_I$ = 0 V or 3 V | - | 2.5 | - | pF |
| $C_{sw}$ | switch capacitance | OFF-state | - | 7.0 | - | pF |
| | | ON-state | - | 10.3 | - | pF |
| **$T_{amb}$ = -40 °C to +125 °C** | | | | | | |
| $V_{IH}$ | HIGH-level input voltage | $V_{CC}$ = 2.3 V to 2.7 V | 1.7 | - | - | V |
| | | $V_{CC}$ = 2.7 V to 3.6 V | 2.0 | - | - | V |
| $V_{IL}$ | LOW-level input voltage | $V_{CC}$ = 2.3 V to 2.7 V | - | - | 0.7 | V |
| | | $V_{CC}$ = 2.7 V to 3.6 V | - | - | 0.8 | V |
| $I_I$ | input leakage current | $V_I$ = GND to $V_{CC}$; $V_{CC}$ = 3.6 V | - | - | ±100 | µA |
| $I_{S(OFF)}$ | OFF-state leakage current | $V_I$ = $V_{IH}$ or $V_{IL}$; $V_O$ = $V_{CC}$ - GND; $V_{CC}$ = 3.6 V; see Fig. 6 | - | - | ±200 | µA |
| $I_{S(ON)}$ | ON-state leakage current | $V_I$ = $V_{IH}$ or $V_{IL}$; $V_{CC}$ = 3.6 V; see Fig. 7 | - | - | ±200 | µA |
| $I_{OFF}$ | power-off leakage current | $V_I$ or $V_O$ = 0 V to 3.6 V; $V_{CC}$ = 0 V | - | - | ±10 | µA |
| $I_{CC}$ | supply current | $V_I$ = GND or $V_{CC}$; $I_O$ = 0 A; $V_{CC}$ = 3.6 V | - | - | 200 | µA |
| $\Delta I_{CC}$ | additional supply current | control input; $V_I$ = $V_{CC}$ - 0.6 V; $V_{CC}$ = 3.6 V [2] | - | - | 5000 | µA |

[1] Typical values are measured at $T_{amb}$ = 25 °C and at $V_{CC}$ = 3.3 V.
[2] One input at 3 V, other inputs at $V_{CC}$ or GND.

**Table 8. Resistance $R_{ON}$**

*At recommended operating conditions; voltages are referenced to GND (ground = 0 V); see test circuit Fig. 8.*

| Symbol | Parameter | Conditions | -40 °C to +85 °C | | | -40 °C to +125 °C | | Unit |
|---|---|---|---|---|---|---|---|---|
| | | | Min | Typ[1] | Max | Min | Max | |
| $R_{ON}$ | ON resistance | $V_{CC}$ = 2.3 V; see Fig. 9 [2] | | | | | | |
| | | $I_{SW}$ = 64 mA; $V_I$ = 0 V | - | 4.7 | 10 | - | 15.0 | Ω |
| | | $I_{SW}$ = 24 mA; $V_I$ = 0 V | - | 4.5 | 10 | - | 15.0 | Ω |
| | | $I_{SW}$ = 15 mA; $V_I$ = 1.7 V | - | 11 | 25 | - | 38.0 | Ω |
| | | $V_{CC}$ = 3.0 V; see Fig. 10 | | | | | | |
| | | $I_{SW}$ = 64 mA; $V_I$ = 0 V | - | 4.2 | 7 | - | 11.0 | Ω |
| | | $I_{SW}$ = 24 mA; $V_I$ = 0 V | - | 4.1 | 7 | - | 11.0 | Ω |
| | | $I_{SW}$ = 15 mA; $V_I$ = 2.4 V | - | 7.3 | 15 | - | 25.5 | Ω |

[1] Typical values are measured at $T_{amb}$ = 25 °C.
[2] Measured by the voltage drop between the A and B terminals at the indicated current through the switch. ON-state resistance is determined by the lower of the voltages of the two (A or B) terminals.

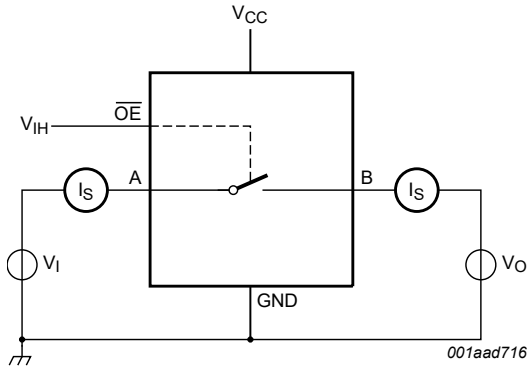



**Fig. 6. Test circuit for measuring OFF-state leakage current**

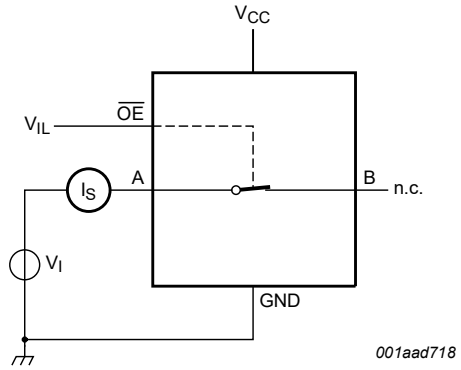
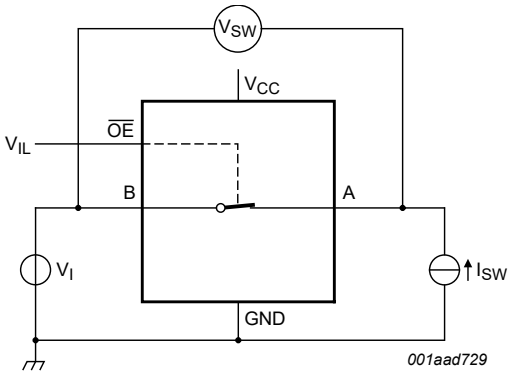
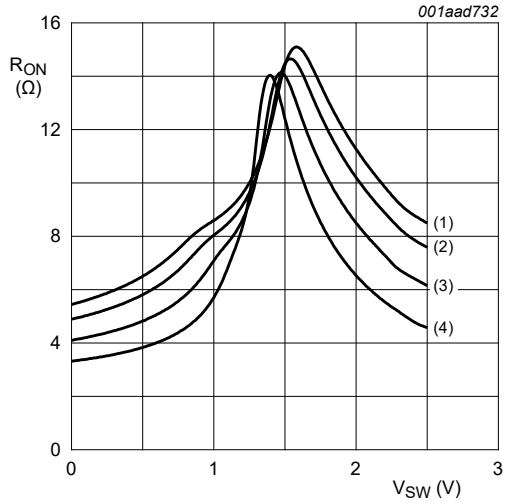



**Fig. 7. Test circuit for measuring ON-state leakage current**



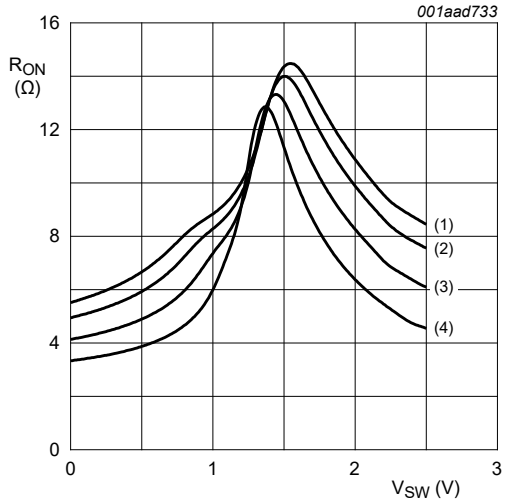

$R_{ON} = V_{SW} / I_{SW}$.

**Fig. 8. Test circuit for measuring ON-resistance**



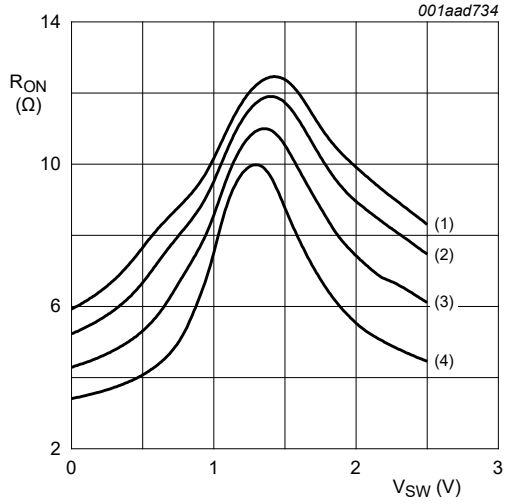

(1) $T_{amb}$ = 125 °C
(2) $T_{amb}$ = 85 °C
(3) $T_{amb}$ = 25 °C
(4) $T_{amb}$ = -40 °C

a. $V_{CC}$ = 2.5 V; $I_{SW}$ = 15 mA; $V_{SW}$ = 1.7 V




(1) $T_{amb}$ = 125 °C
(2) $T_{amb}$ = 85 °C
(3) $T_{amb}$ = 25 °C
(4) $T_{amb}$ = -40 °C

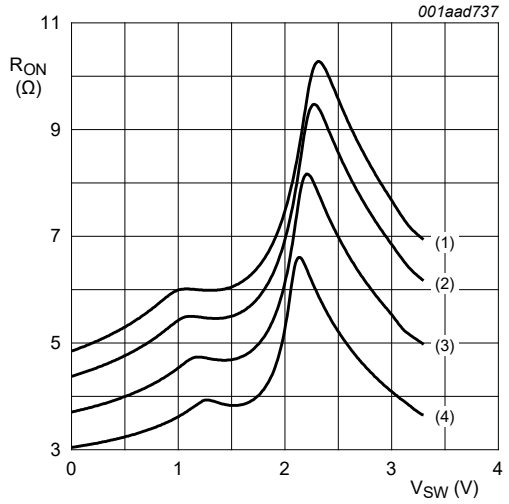
b. $V_{CC}$ = 2.5 V; $I_{SW}$ = 24 mA; $V_{SW}$ = 0 V




(1) $T_{amb}$ = 125 °C
(2) $T_{amb}$ = 85 °C
(3) $T_{amb}$ = 25 °C
(4) $T_{amb}$ = -40 °C

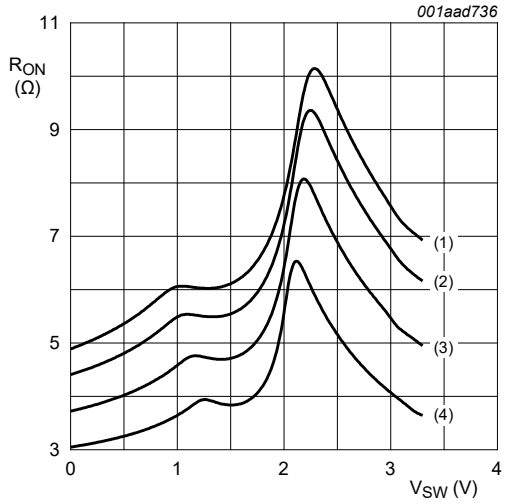
c. $V_{CC}$ = 2.5 V; $I_{SW}$ = 64 mA; $V_{SW}$ = 0 V

**Fig. 9. Switch ON-resistance as a function of input voltage at $V_{CC}$ = 2.5 V**



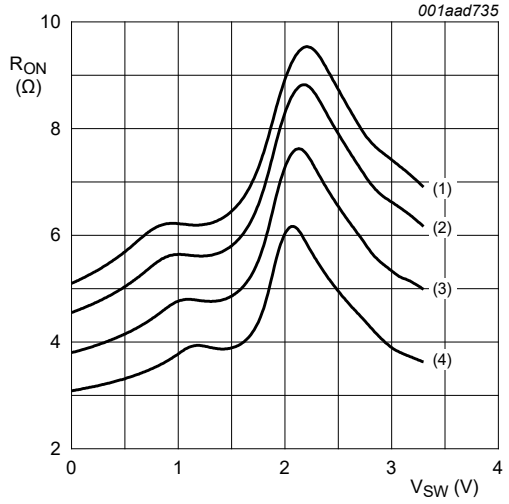

(1) $T_{amb}$ = 125 °C
(2) $T_{amb}$ = 85 °C
(3) $T_{amb}$ = 25 °C
(4) $T_{amb}$ = -40 °C

a. $V_{CC}$ = 3.3 V; $I_{SW}$ = 15 mA; $V_{SW}$ = 2.4 V




(1) $T_{amb}$ = 125 °C
(2) $T_{amb}$ = 85 °C
(3) $T_{amb}$ = 25 °C
(4) $T_{amb}$ = -40 °C

b. $V_{CC}$ = 3.3 V; $I_{SW}$ = 24 mA; $V_{SW}$ = 0 V




(1) $T_{amb}$ = 125 °C
(2) $T_{amb}$ = 85 °C
(3) $T_{amb}$ = 25 °C
(4) $T_{amb}$ = -40 °C

c. $V_{CC}$ = 3.3 V; $I_{SW}$ = 64 mA; $V_{SW}$ = 0 V

**Fig. 10. Switch ON-resistance as a function of input voltage at $V_{CC}$ = 3.3 V**

# 11. Dynamic characteristics

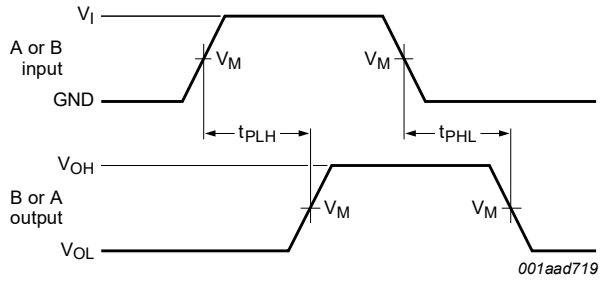
**Table 9. Dynamic characteristics**

*GND = 0 V; see Fig. 13.*

| Symbol | Parameter | Conditions | -40 °C to +85 °C | | | -40 °C to +125 °C | | Unit |
|---|---|---|---|---|---|---|---|---|
| | | | Min | Typ[1] | Max | Min | Max | |
| $t_{pd}$ | propagation delay | A to B or B to A; see Fig. 11; $R_L$ = ∞ Ω [2][3] | | | | | | |
| | | $V_{CC}$ = 2.3 V to 2.7 V | - | - | 0.21 | - | 0.32 | ns |
| | | $V_{CC}$ = 3.0 V to 3.6 V | - | 0.16 | 0.25 | - | 0.39 | ns |
| $t_{en}$ | enable time | $\overline{OE}$ to A or B; see Fig. 12; $R_L$ = 500 Ω [4] | | | | | | |
| | | $V_{CC}$ = 2.3 V to 2.7 V | 1.0 | 2.50 | 4.00 | 1.0 | 5.00 | ns |
| | | $V_{CC}$ = 3.0 V to 3.6 V | 1.0 | 2.05 | 4.00 | 1.0 | 5.00 | ns |
| $t_{dis}$ | disable time | $\overline{OE}$ to A or B; see Fig. 12; $R_L$ = 500 Ω [5] | | | | | | |
| | | $V_{CC}$ = 2.3 V to 2.7 V | 1.0 | 2.80 | 5.00 | 1.0 | 6.30 | ns |
| | | $V_{CC}$ = 3.0 V to 3.6 V | 1.0 | 3.40 | 4.10 | 1.0 | 5.40 | ns |

[1] All typical values are measured at $T_{amb}$ = 25 °C and at nominal $V_{CC}$.
[2] The propagation delay is the calculated RC time constant of the maximum on-state resistance of the switch and the load capacitance, when driven by an ideal voltage source (zero output impedance).
[3] $t_{pd}$ is the same as $t_{PLH}$ and $t_{PHL}$.
[4] $t_{en}$ is the same as $t_{PZH}$ and $t_{PZL}$.
[5] $t_{dis}$ is the same as $t_{PHZ}$ and $t_{PLZ}$.

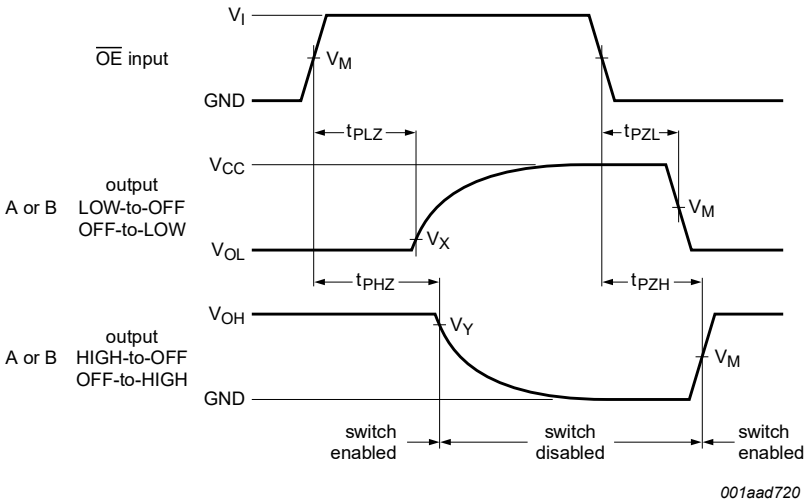
## 11.1. Waveforms and test circuit




Measurement points are given in Table 10.

Logic levels: $V_{OL}$ and $V_{OH}$ are typical output voltage levels that occur with the output load.

**Fig. 11. The data input (A or B) to output (B or A) propagation delays**



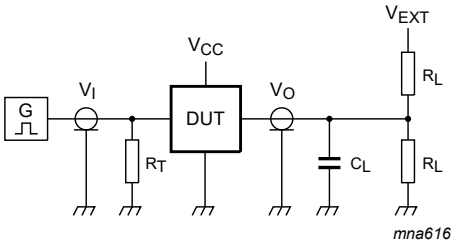

Measurement points are given in Table 10.

Logic levels: $V_{OL}$ and $V_{OH}$ are typical output voltage levels that occur with the output load.

**Fig. 12. Enable and disable times**

**Table 10. Measurement points**

| Supply voltage | Inputs | | | Output | | |
|---|---|---|---|---|---|---|
| $V_{CC}$ | $V_M$ | $V_I$ | $t_r = t_f$ | $V_M$ | $V_X$ | $V_Y$ |
| 2.3 V to 2.7 V | 0.5 × $V_{CC}$ | $V_{CC}$ | ≤ 2.0 ns | 0.5 × $V_{CC}$ | $V_{OL}$ + 0.15 V | $V_{OH}$ - 0.15 V |
| 3.0 V to 3.6 V | 0.5 × $V_{CC}$ | $V_{CC}$ | ≤ 2.0 ns | 0.5 × $V_{CC}$ | $V_{OL}$ + 0.3 V | $V_{OH}$ - 0.3 V |




Test data is given in Table 11.

Definitions for test circuit:

$R_L$ = Load resistance;

$C_L$ = Load capacitance including jig and probe capacitance;

$R_T$ = Termination resistance should be equal to the output impedance $Z_o$ of the pulse generator;

$V_{EXT}$ = Test voltage for switching times.

**Fig. 13. Test circuit for measuring switching times**

**Table 11. Test data**

| Supply voltage | Load | $V_{EXT}$ | | |
|---|---|---|---|---|
| $V_{CC}$ | $C_L$ | $t_{PLH}$, $t_{PHL}$ | $t_{PZH}$, $t_{PHZ}$ | $t_{PZL}$, $t_{PLZ}$ |
| 2.3 V to 2.7 V | 30 pF | open | GND | 2 × $V_{CC}$ |
| 3.0 V to 3.6 V | 50 pF | open | GND | 2 × $V_{CC}$ |

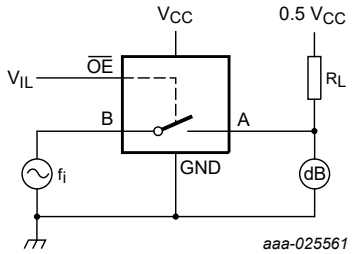
## 12. Additional dynamic characteristics

**Table 12. Additional dynamic characteristics**

*At recommended operating conditions; voltages are referenced to GND (ground = 0 V); $V_I$ = GND or $V_{CC}$ (unless otherwise specified); $t_r = t_f \leq 2.5$ ns.*

| Symbol | Parameter | Conditions | $T_{amb}$ = 25 °C | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min | Typ | Max | |
| $f_{(-3dB)}$ | -3 dB frequency response | $V_{CC}$ = 3.3 V; $R_L$ = 50 Ω; see Fig. 14 [1] | - | 263 | - | MHz |

[1] $f_i$ is biased at 0.5 × $V_{CC}$.

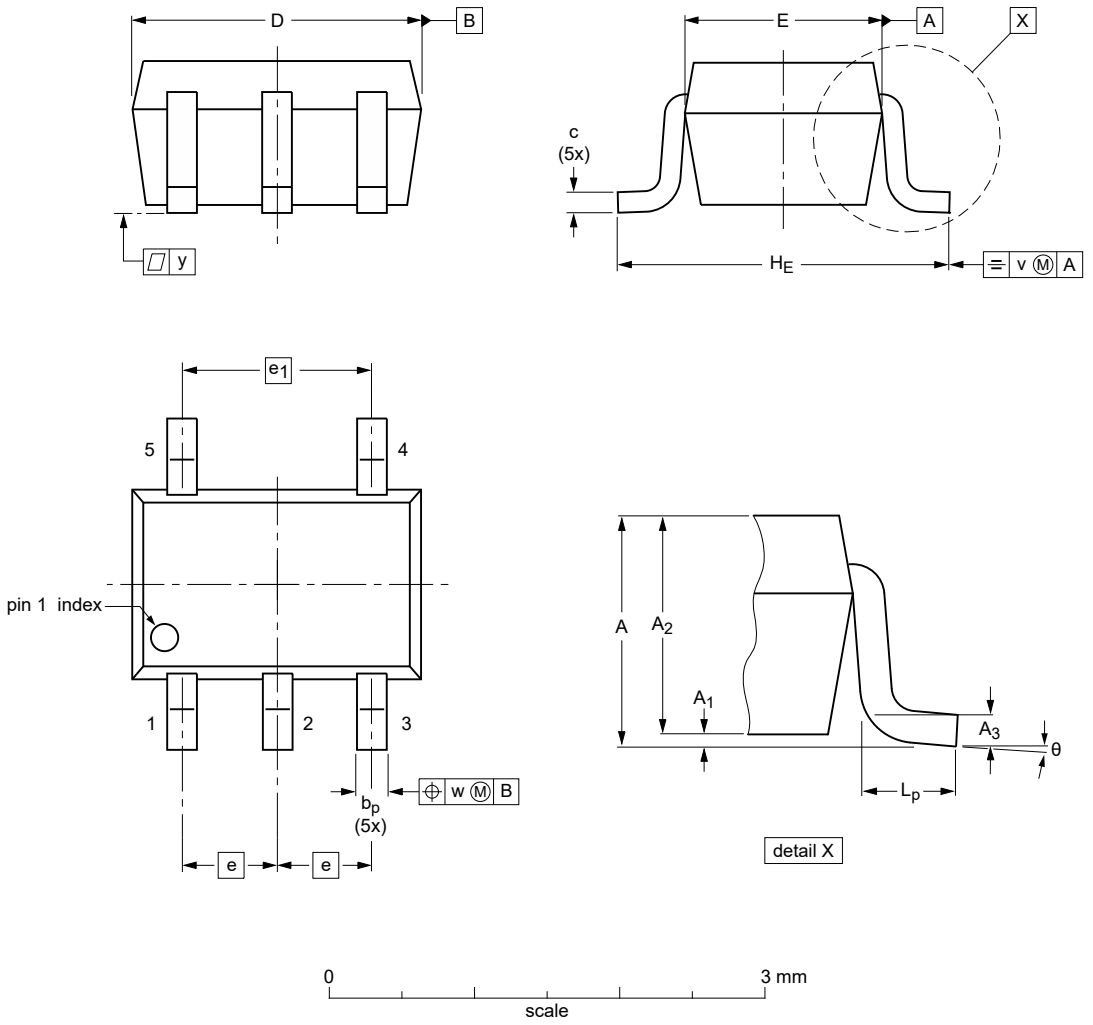



$\overline{OE}$ connected to GND; adjust $f_i$ voltage to obtain 0 dBm level at output.
Increase $f_i$ frequency until dB meter reads -3 dB.

**Fig. 14. Test circuit for measuring the frequency response when channel is in ON-state**

## 13. Package outline

**TSSOP5: plastic thin shrink small outline package; 5 leads; body width 1.25 mm** **SOT353-1**




Dimensions (mm are the original dimensions)

| Unit | | A | $A_1$ | $A_2$ | $A_3$ | $b_p$ | c | $D^{(1)}$ | $E^{(1)}$ | e | $e_1$ | $H_E$ | $L_p$ | v | w | y | θ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | max | 1.1 | 0.1 | 1.0 | 0.15 | 0.30 | 0.25 | 2.2 | 1.35 | 0.65 | 1.3 | 2.4 | 0.46 | 0.3 | 0.1 | 0.1 | 8° |
| | min | 0.8 | 0 | 0.8 | | 0.15 | 0.08 | 1.8 | 1.15 | | | 1.8 | 0.26 | | | | 0° |

Note

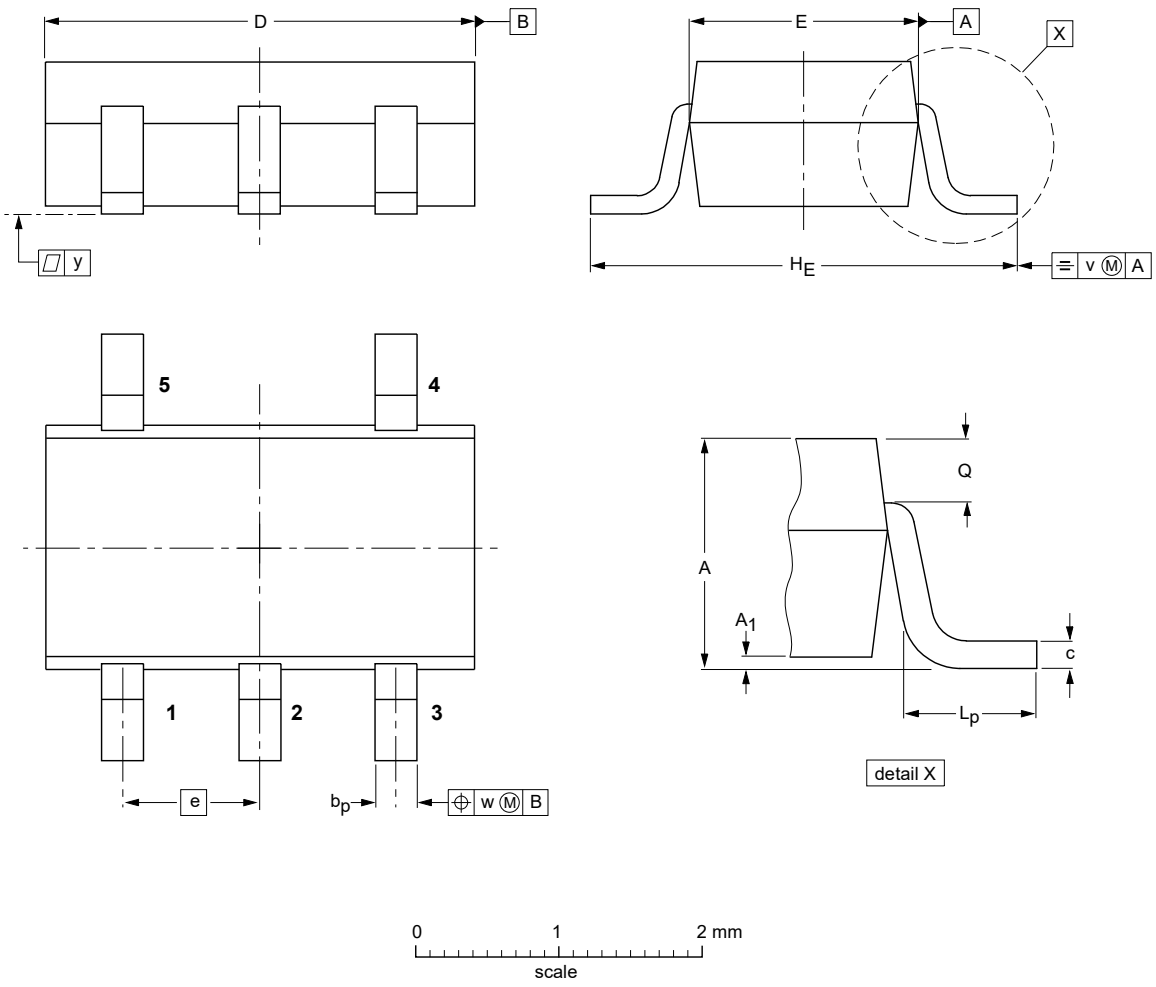
1. Plastic or metal protrusions of 0.2 mm maximum per side are not included.

*sot353-1_po*

| Outline version | References | | | | European projection | Issue date |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOT353-1 | | MO-203 | SC-88A | | | ~~21-12-15~~ 21-12-16 |

**Fig. 15. Package outline SOT353-1 (TSSOP5)**

**Plastic surface-mounted package; 5 leads** **SOT753**



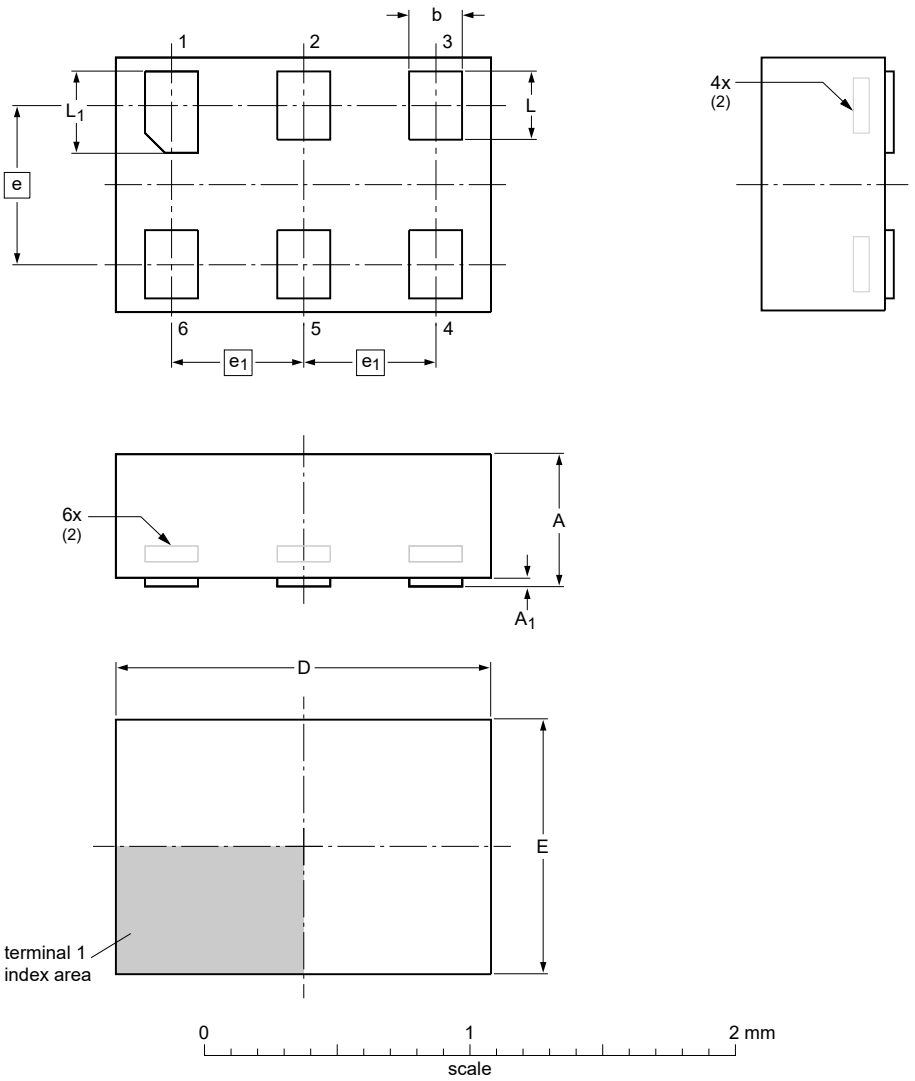

**DIMENSIONS (mm are the original dimensions)**

| UNIT | A | $A_1$ | $b_p$ | c | D | E | e | $H_E$ | $L_p$ | Q | v | w | y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | 1.1<br>0.9 | 0.100<br>0.013 | 0.40<br>0.25 | 0.26<br>0.10 | 3.1<br>2.7 | 1.7<br>1.3 | 0.95 | 3.0<br>2.5 | 0.6<br>0.2 | 0.33<br>0.23 | 0.2 | 0.2 | 0.1 |

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOT753 | | | SC-74A | | | ~~02-04-16~~<br>06-03-16 |

**Fig. 16. Package outline SOT753 (SC-74A)**

XSON6: plastic extremely thin small outline package; no leads; 6 terminals; body 1 x 1.45 x 0.5 mm SOT886




Dimensions (mm are the original dimensions)

| Unit | | A(1) | $A_1$ | b | D | E | e | $e_1$ | L | $L_1$ |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | max | 0.5 | 0.04 | 0.25 | 1.50 | 1.05 | | | 0.35 | 0.40 |
| | nom | | | 0.20 | 1.45 | 1.00 | 0.6 | 0.5 | 0.30 | 0.35 |
| | min | | | 0.17 | 1.40 | 0.95 | | | 0.27 | 0.32 |

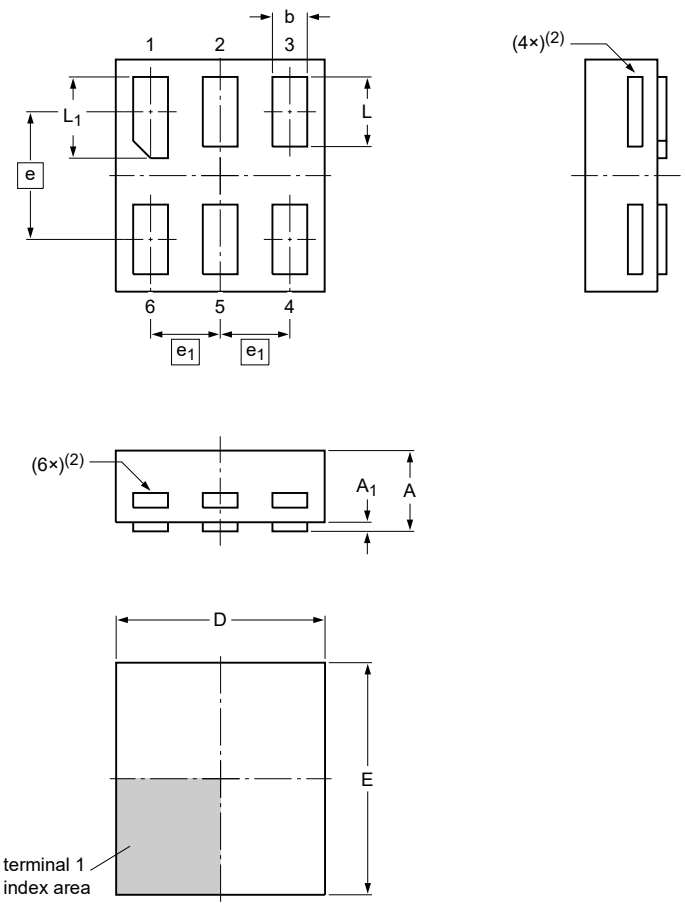
Notes
1. Including plating thickness.
2. Can be visible in some manufacturing processes.

sot886_po

| Outline version | References | | | | European projection | Issue date |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOT886 | | MO-252 | | | | ~~04-07-22~~ 12-01-05 |

**Fig. 17. Package outline SOT886 (XSON6)**

**XSON6: extremely thin small outline package; no leads; 6 terminals; body 0.9 x 1.0 x 0.35 mm** **SOT1115**




Dimensions

| Unit | | A(1) | $A_1$ | b | D | E | e | $e_1$ | L | $L_1$ |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | max | 0.35 | 0.04 | 0.20 | 0.95 | 1.05 | | | 0.35 | 0.40 |
| | nom | | | 0.15 | 0.90 | 1.00 | 0.55 | 0.3 | 0.30 | 0.35 |
| | min | | | 0.12 | 0.85 | 0.95 | | | 0.27 | 0.32 |

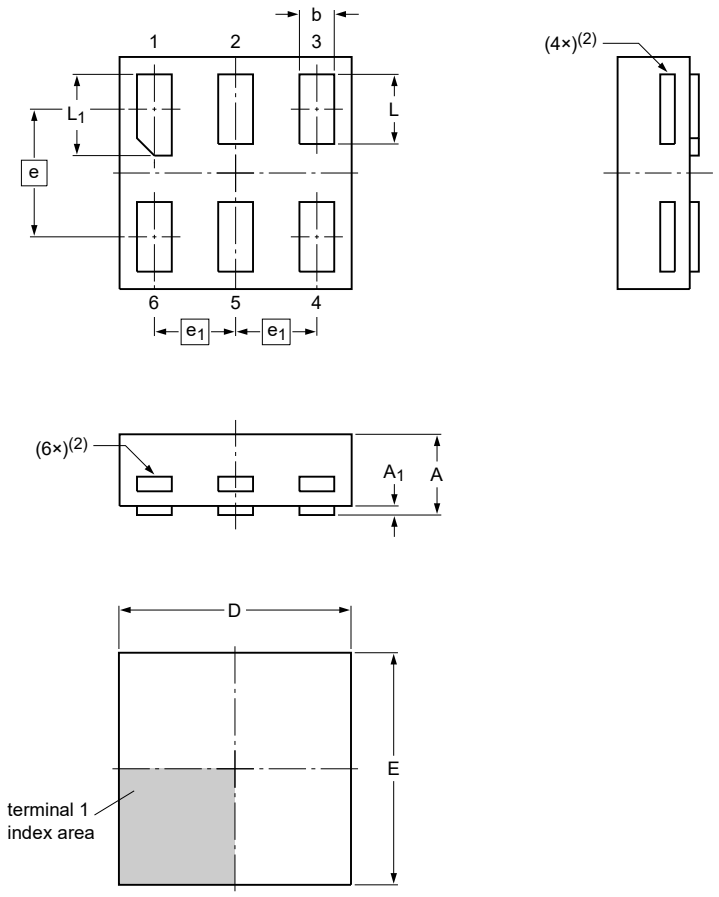
Note
1. Including plating thickness.
2. Visible depending upon used manufacturing technology.

*sot1115_po*

| Outline version | References | | | | European projection | Issue date |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOT1115 | | | | | | ~~10-04-02~~ 10-04-07 |

**Fig. 18. Package outline SOT1115 (XSON6)**

**XSON6: extremely thin small outline package; no leads; 6 terminals; body 1.0 x 1.0 x 0.35 mm** **SOT1202**




Dimensions

| Unit | | $A^{(1)}$ | $A_1$ | b | D | E | e | $e_1$ | L | $L_1$ |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | max | 0.35 | 0.04 | 0.20 | 1.05 | 1.05 | | | 0.35 | 0.40 |
| | nom | | | 0.15 | 1.00 | 1.00 | 0.55 | 0.35 | 0.30 | 0.35 |
| | min | | | 0.12 | 0.95 | 0.95 | | | 0.27 | 0.32 |

Note
1. Including plating thickness.
2. Visible depending upon used manufacturing technology.

*sot1202_po*

| Outline version | References | | | | European projection | Issue date |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOT1202 | | | | | | ~~10-04-02~~ 10-04-06 |

**Fig. 19. Package outline SOT1202 (XSON6)**

## 14. Abbreviations

**Table 13. Abbreviations**

| Acronym | Description |
|---|---|
| CDM | Charged Device Model |
| CMOS | Complementary Metal Oxide Semiconductor |
| DUT | Device Under Test |
| ESD | ElectroStatic Discharge |
| HBM | Human Body Model |
| MM | Machine Model |

## 15. Revision history

**Table 14. Revision history**

| Document ID | Release date | Data sheet status | Change notice | Supersedes |
|---|---|---|---|---|
| 74CBTLV1G125 v.7.1 | 20220212 | Product data sheet | - | 74CBTLV1G125 v.6 |
| Modifications: | • Fig. 15: Package outline drawing for SOT353-1 (TSSOP5) has changed. | | | |
| 74CBTLV1G125 v.6 | 20210104 | Product data sheet | - | 74CBTLV1G125 v.5 |
| Modifications: | • The format of this data sheet has been redesigned to comply with the identity guidelines of Nexperia.<br>• Legal texts have been adapted to the new company name where appropriate.<br>• Type number 74CBTLV1G125GF (SOT891/XSON6) removed.<br>• Fig. 15: Package outline drawing for SOT353-1 (TSSOP5) has changed.<br>• Section 8: Derating values for $P_{tot}$ total power dissipation updated.<br>• Section 1 and Section 2 updated. | | | |
| 74CBTLV1G125 v.5 | 20161110 | Product data sheet | - | 74CBTLV1G125 v.4 |
| Modifications: | • Section 12 added. | | | |
| 74CBTLV1G125 v.4 | 20120905 | Product data sheet | - | 74CBTLV1G125 v.3 |
| Modifications: | • Package outline drawing of SOT886 (Fig. 17) modified. | | | |
| 74CBTLV1G125 v.3 | 20111215 | Product data sheet | - | 74CBTLV1G125 v.2 |
| Modifications: | • Legal pages updated. | | | |
| 74CBTLV1G125 v.2 | 20100729 | Product data sheet | - | 74CBTLV1G125 v.1 |
| 74CBTLV1G125 v.1 | 20070223 | Product data sheet | - | - |

# 16. Legal information

## Data sheet status

| Document status [1][2] | Product status [3] | Definition |
|---|---|---|
| Objective [short] data sheet | Development | This document contains data from the objective specification for product development. |
| Preliminary [short] data sheet | Qualification | This document contains data from the preliminary specification. |
| Product [short] data sheet | Production | This document contains the product specification. |

[1] Please consult the most recently issued document before initiating or completing a design.
[2] The term 'short data sheet' is explained in section "Definitions".
[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the internet at https://www.nexperia.com.

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