

NX3DV2567-Q100

Low-ohmic four-pole double-throw analog switch

Rev. 1 — 20 January 2014

Product data sheet

1. General description

The NX3DV2567-Q100 is a four-pole double-throw analog switch (4PDT) optimized for switching WLAN-SIM supply, data and control signals. It has one digital select input (S) and four switches each with two independent input/outputs (nY0 and nY1) and a common input/output (nZ). Schmitt-trigger action at S, makes the circuit tolerant to slower input rise and fall times across the entire V_{CC} range from 1.4 V to 4.3 V.

Lower-level logic signals can drive pin S without a significant increase in supply current I_{CC} , due to a low input voltage threshold. This characteristic makes it possible for the NX3DV2567-Q100 to switch 4.3 V signals with a 1.8 V digital controller, eliminating the need for logic level translation.

The NX3DV2567-Q100 allows signals with amplitude up to V_{CC} to be transmitted from nZ to nY0 or nY1; or from nY0 or nY1 to nZ.

This product has been qualified to the Automotive Electronics Council (AEC) standard Q100 (Grade 1) and is suitable for use in automotive applications.

2. Features and benefits

- Automotive product qualification in accordance with AEC-Q100 (Grade 1)
 - ◆ Specified from $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ and from $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$
- Wide supply voltage range from 1.4 V to 4.3 V
- Very low ON resistance for supply path:
 - ◆ $0.5\text{ }\Omega$ (typical) at $V_{CC} = 1.8\text{ V}$
 - ◆ $0.45\text{ }\Omega$ (typical) at $V_{CC} = 2.7\text{ V}$
- Low ON resistance for data path:
 - ◆ $7\text{ }\Omega$ (typical) at $V_{CC} = 1.8\text{ V}$
 - ◆ $6\text{ }\Omega$ (typical) at $V_{CC} = 2.7\text{ V}$
- Low ON capacitance for data path
- Wide -3 dB bandwidth $> 160\text{ MHz}$
- Break-before-make switching
- High noise immunity
- ESD protection:
 - ◆ MIL-STD-883, method 3015 Class 3A exceeds 4000 V
 - ◆ HBM JESD22-A114F Class 3A exceeds 4000 V
 - ◆ MIL-STD-883, method 3015 Class 3A I/O to GND exceeds 7000 V
 - ◆ HBM JESD22-A114F Class 3A I/O to GND exceeds 7000 V
 - ◆ CDM AEC-Q100-011 revision B exceeds 1000 V
- CMOS low-power consumption



- Latch-up performance exceeds 100 mA per JESD 78B Class II Level A
- 1.8 V control logic at $V_{CC} = 3.6\text{ V}$
- Control input accepts voltages above supply voltage
- Very low supply current, even when input is below V_{CC}
- High current handling capability (350 mA continuous current under 3.3 V supply for supply path switch)

3. Applications

- Cell phone, PDA, digital camera, printer and notebook
- LCD monitor, TV and set-top box

4. Ordering information

Table 1. Ordering information

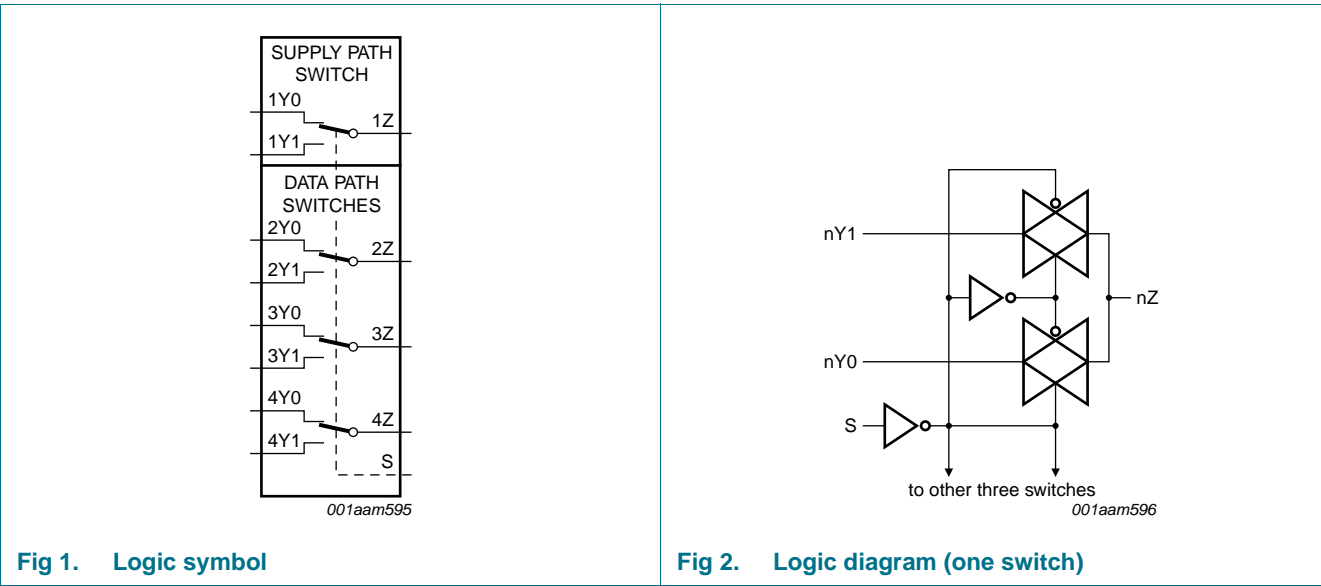
| Type number | Package | | | |
|------------------|-------------------|----------|--|-----------|
| | Temperature range | Name | Description | Version |
| NX3DV2567HR-Q100 | −40 °C to +125 °C | HXQFN16U | plastic thermal enhanced extremely thin quad flat package; no leads; 16 terminals; UTLP based; body 3 x 3 x 0.5 mm | SOT1039-1 |

5. Marking

Table 2. Marking codes

| Type number | Marking code |
|------------------|--------------|
| NX3DV2567HR-Q100 | D60 |

6. Functional diagram



7. Pinning information

7.1 Pinning

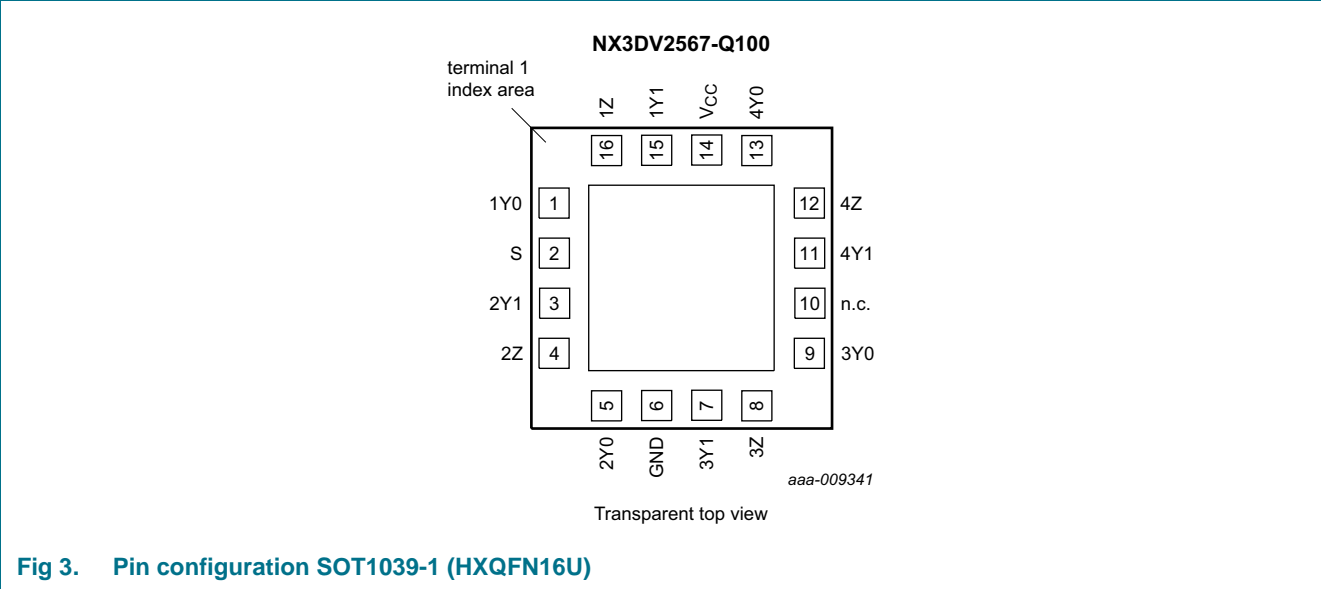


Fig 3. Pin configuration SOT1039-1 (HXQFN16U)

7.2 Pin description

Table 3. Pin description

| Symbol | Pin | Description |
|---------------|----------|---|
| 1Y0 | 1 | independent input or output (supply switch) |
| 2Y0, 3Y0, 4Y0 | 5, 9, 13 | independent input or output (data switch) |
| S | 2 | select input |
| 1Y1 | 15 | independent input or output (supply switch) |
| 2Y1, 3Y1, 4Y1 | 3, 7, 11 | independent input or output (data switch) |
| 1Z | 16 | common output or input (supply switch) |
| 2Z, 3Z, 4Z | 4, 8, 12 | common output or input (data switch) |
| GND | 6 | ground (0 V) |
| n.c. | 10 | not connected |
| VCC | 14 | supply voltage |

8. Functional description

Table 4. Function table^[1]

| Input S | Channel on |
|---------|------------|
| L | nY0 |
| H | nY1 |

[1] H = HIGH voltage level; L = LOW voltage level.

9. 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 | select input S | [1] -0.5 | +4.6 | V |
| V_{SW} | switch voltage | | [2] -0.5 | $V_{CC} + 0.5$ | V |
| I_{IK} | input clamping current | $V_I < -0.5$ 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 | supply path switch | | | |
| | | $V_{SW} > -0.5$ V or $V_{SW} < V_{CC} + 0.5$ V; source or sink current | - | ± 350 | mA |
| | | $V_{SW} > -0.5$ V or $V_{SW} < V_{CC} + 0.5$ V; pulsed at 1 ms duration, < 10 % duty cycle; peak current | - | ± 500 | mA |
| | | data path switch | | | |
| | | $V_{SW} > -0.5$ V or $V_{SW} < V_{CC} + 0.5$ V; source or sink current | - | ± 128 | mA |
| T_{stg} | storage temperature | | -65 | +150 | °C |
| P_{tot} | total power dissipation | $T_{amb} = -40$ °C to +125 °C | [3] - | 250 | mW |

[1] The minimum input voltage rating may be exceeded if the input current rating is observed.

[2] The minimum and maximum switch voltage ratings may be exceeded if the switch clamping current rating is observed but may not exceed 4.6 V.

[3] Above 135 °C, the value of P_{tot} derates linearly with 16.9 mW/K.

10. Recommended operating conditions

Table 6. Recommended operating conditions

| Symbol | Parameter | Conditions | Min | Max | Unit |
|---------------------|-------------------------------------|---------------------------|-------|----------|------|
| V_{CC} | supply voltage | | 1.4 | 4.3 | V |
| V_I | input voltage | select input S | 0 | 4.3 | V |
| V_{SW} | switch voltage | | [1] 0 | V_{CC} | V |
| T_{amb} | ambient temperature | | -40 | +125 | °C |
| $\Delta t/\Delta V$ | input transition rise and fall rate | $V_{CC} = 1.4$ V to 4.3 V | [2] - | 200 | ns/V |

[1] To avoid sinking GND current from terminal nZ when switch current flows in terminal nYn, the voltage drop across the bidirectional switch must not exceed 0.4 V. If the switch current flows into terminal nZ, no GND current flows from terminal nYn. In this case, there is no limit for the voltage drop across the switch.

[2] Applies to control signal levels.

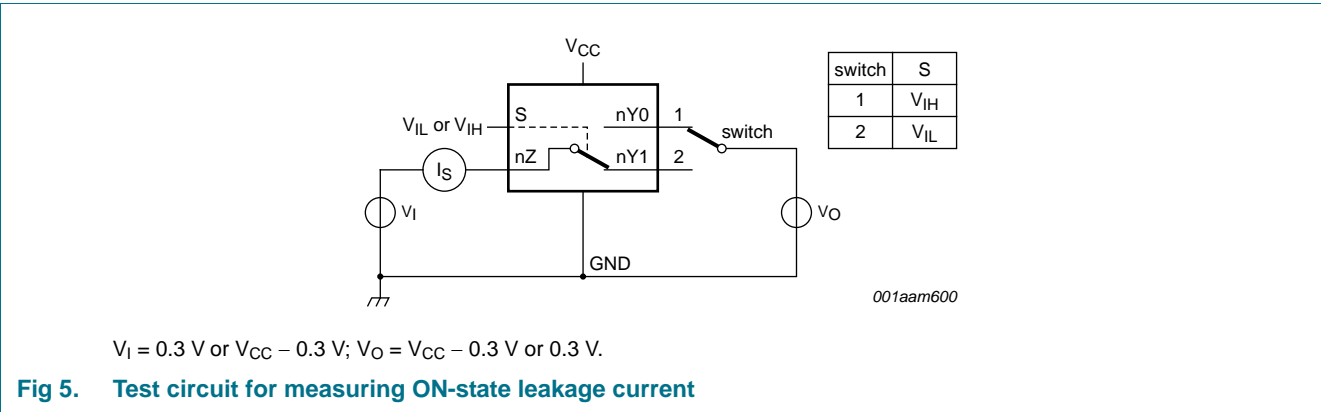
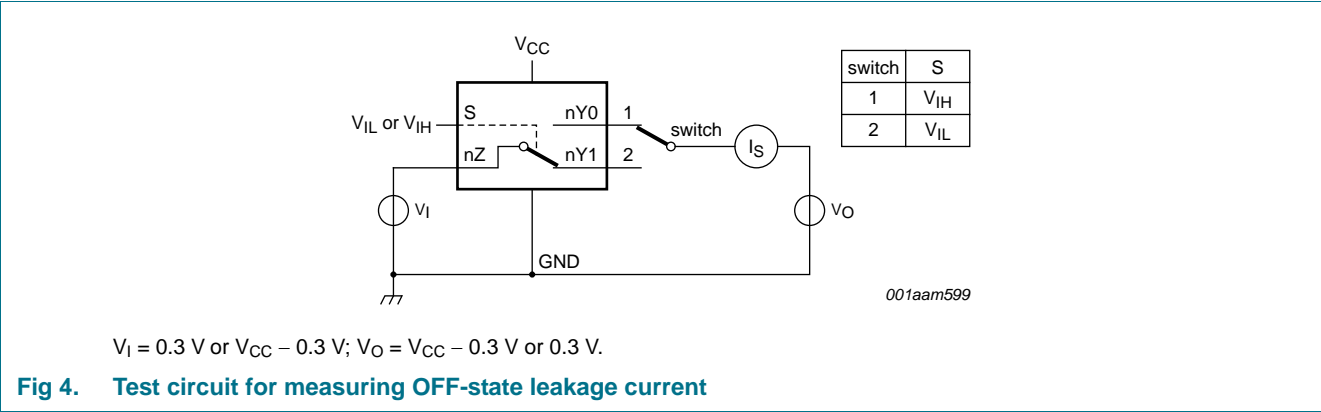
11. Static characteristics

Table 7. Static characteristics

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

| Symbol | Parameter | Conditions | T _{amb} = 25 °C | | | T _{amb} = -40 °C to +125 °C | | | Unit |
|---------------------|---------------------------|---|--------------------------|------|------|--------------------------------------|-------------|--------------|------|
| | | | Min | Typ | Max | Min | Max (85 °C) | Max (125 °C) | |
| V _{IH} | HIGH-level input voltage | V _{CC} = 1.4 V to 1.6 V | 0.9 | - | - | 0.9 | - | - | V |
| | | V _{CC} = 1.65 V to 1.95 V | 0.9 | - | - | 0.9 | - | - | V |
| | | V _{CC} = 2.3 V to 2.7 V | 1.1 | - | - | 1.1 | - | - | V |
| | | V _{CC} = 2.7 V to 3.6 V | 1.3 | - | - | 1.3 | - | - | V |
| | | V _{CC} = 3.6 V to 4.3 V | 1.4 | - | - | 1.4 | - | - | V |
| V _{IL} | LOW-level input voltage | V _{CC} = 1.4 V to 1.6 V | - | - | 0.3 | - | 0.3 | 0.3 | V |
| | | V _{CC} = 1.65 V to 1.95 V | - | - | 0.4 | - | 0.4 | 0.3 | V |
| | | V _{CC} = 2.3 V to 2.7 V | - | - | 0.4 | - | 0.4 | 0.4 | V |
| | | V _{CC} = 2.7 V to 3.6 V | - | - | 0.5 | - | 0.5 | 0.5 | V |
| | | V _{CC} = 3.6 V to 4.3 V | - | - | 0.6 | - | 0.6 | 0.6 | V |
| I _I | input leakage current | select input S; V _I = GND to 4.3 V; V _{CC} = 1.4 V to 4.3 V | - | - | - | - | ±0.5 | ±1 | μA |
| I _{S(OFF)} | OFF-state leakage current | nY0 and nY1 port; see Figure 4 | | | | | | | |
| | | V _{CC} = 1.4 V to 3.6 V | - | - | ±5 | - | ±50 | ±500 | nA |
| | | V _{CC} = 3.6 V to 4.3 V | - | - | ±10 | - | ±50 | ±500 | nA |
| I _{S(ON)} | ON-state leakage current | nZ port; V _{CC} = 1.4 V to 3.6 V; see Figure 5 | | | | | | | |
| | | V _{CC} = 1.4 V to 3.6 V | - | - | ±5 | - | ±50 | ±500 | nA |
| | | V _{CC} = 3.6 V to 4.3 V | - | - | ±10 | - | ±50 | ±500 | nA |
| I _{CC} | supply current | V _I = V _{CC} or GND; V _{SW} = GND or V _{CC} | | | | | | | |
| | | V _{CC} = 3.6 V | - | - | 100 | - | 500 | 5000 | nA |
| | | V _{CC} = 4.3 V | - | - | 150 | - | 800 | 6000 | nA |
| ΔI _{CC} | additional supply current | V _{SW} = GND or V _{CC} | | | | | | | |
| | | V _I = 2.6 V; V _{CC} = 4.3 V | - | 2.0 | 4.0 | - | 7 | 7 | μA |
| | | V _I = 2.6 V; V _{CC} = 3.6 V | - | 0.35 | 0.7 | - | 1 | 1 | μA |
| | | V _I = 1.8 V; V _{CC} = 4.3 V | - | 7.0 | 10.0 | - | 15 | 15 | μA |
| | | V _I = 1.8 V; V _{CC} = 3.6 V | - | 2.5 | 4.0 | - | 5 | 5 | μA |
| | | V _I = 1.8 V; V _{CC} = 2.5 V | - | 50 | 200 | - | 300 | 500 | nA |
| C _I | input capacitance | | - | 1 | - | - | - | - | pF |
| C _{S(OFF)} | OFF-state capacitance | supply path switch | - | 35 | - | - | - | - | pF |
| | | data path switch | - | 3 | - | - | - | - | pF |
| C _{S(ON)} | ON-state capacitance | supply path switch | - | 130 | - | - | - | - | pF |
| | | data path switch | - | 16 | - | - | - | - | pF |

11.1 Test circuits



11.2 ON resistance

Table 8. ON resistance
At recommended operating conditions; voltages are referenced to GND (ground = 0 V); for graphs see [Figure 7](#) to [Figure 12](#).

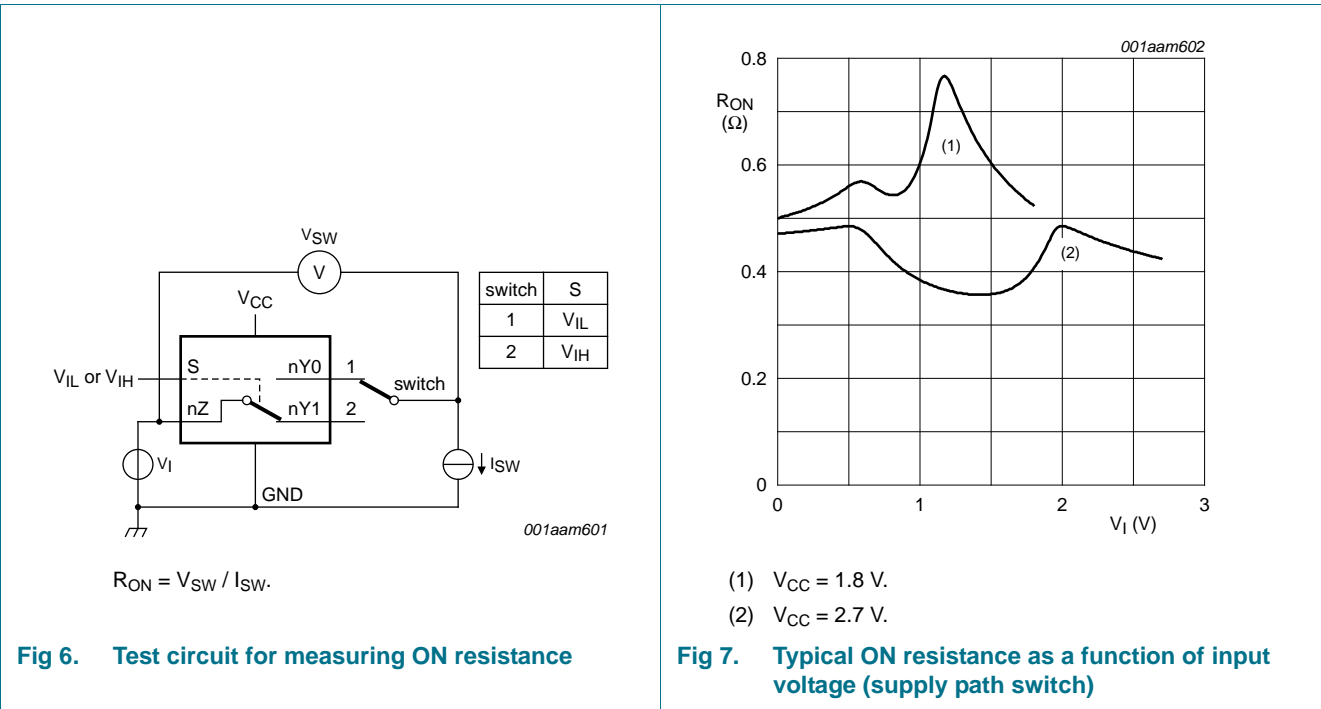
| Symbol | Parameter | Conditions | T _{amb} = −40 °C to +85 °C | | | T _{amb} = −40 °C to +125 °C | | Unit |
|--------------------|---|---|-------------------------------------|--------------------|------|--------------------------------------|------|------|
| | | | Min | Typ ^[1] | Max | Min | Max | |
| Supply path switch | | | | | | | | |
| R _{ON} | ON resistance | V _I = GND to V _{CC} ; I _{SW} = 100 mA; see Figure 6 | | | | | | |
| | | V _{CC} = 1.8 V; V _{SW} = 0 V, 1.8 V | - | 0.5 | 0.75 | - | 0.85 | Ω |
| | | V _{CC} = 2.7 V; V _{SW} = 0 V, 2.3 V | - | 0.45 | 0.7 | - | 0.8 | Ω |
| ΔR _{ON} | ON resistance mismatch between channels | V _I = GND to V _{CC} ; I _{SW} = 100 mA [2] | | | | | | |
| | | V _{CC} = 2.7 V; V _{SW} = 0 V | - | 0.1 | - | - | - | Ω |

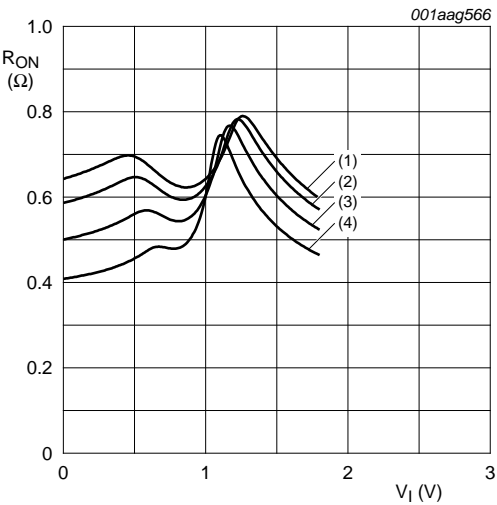
Table 8. ON resistance ...continued
At recommended operating conditions; voltages are referenced to GND (ground = 0 V); for graphs see [Figure 7](#) to [Figure 12](#).

| Symbol | Parameter | Conditions | T _{amb} = −40 °C to +85 °C | | | T _{amb} = −40 °C to +125 °C | | Unit |
|--------------------|---|---|-------------------------------------|--------------------|------|--------------------------------------|------|------|
| | | | Min | Typ ^[1] | Max | Min | Max | |
| Data path switches | | | | | | | | |
| R _{ON} | ON resistance | V _I = GND to V _{CC} ; I _{SW} = 20 mA; see Figure 6 | | | | | | |
| | | V _{CC} = 1.8 V; V _{SW} = 0 V, 1.8 V | - | 7.0 | 10.0 | - | 11.0 | Ω |
| | | V _{CC} = 2.7 V; V _{SW} = 0 V, 2.3 V | - | 6.0 | 9.5 | - | 10.5 | Ω |
| ΔR _{ON} | ON resistance mismatch between channels | V _I = GND to V _{CC} ; I _{SW} = 20 mA [2] | | | | | | |
| | | V _{CC} = 2.7 V; V _{SW} = 0 V | - | 0.2 | - | - | - | Ω |

- [1] Typical values are measured at T_{amb} = 25 °C.
[2] Measured at identical V_{CC}, temperature and input voltage.

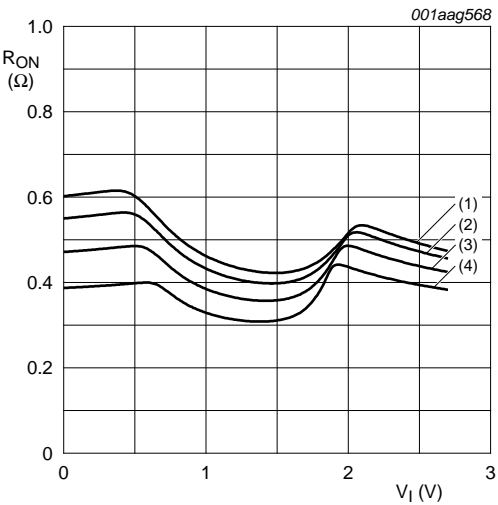
11.3 ON resistance test circuit and graphs





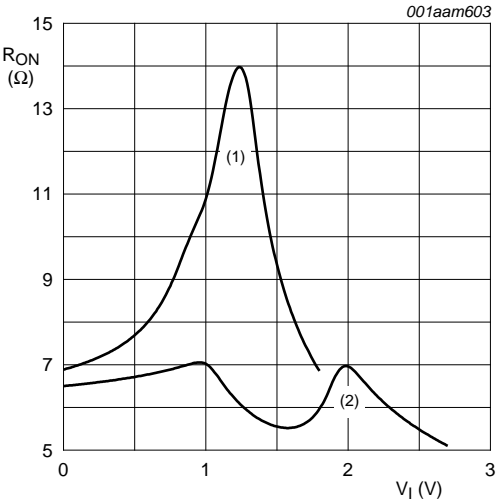
- (1) $T_{amb} = 125\text{ }^{\circ}\text{C}.$
- (2) $T_{amb} = 85\text{ }^{\circ}\text{C}.$
- (3) $T_{amb} = 25\text{ }^{\circ}\text{C}.$
- (4) $T_{amb} = -40\text{ }^{\circ}\text{C}.$

Fig 8. ON resistance as a function of input voltage; $V_{CC} = 1.8\text{ V}$ (supply path switch)



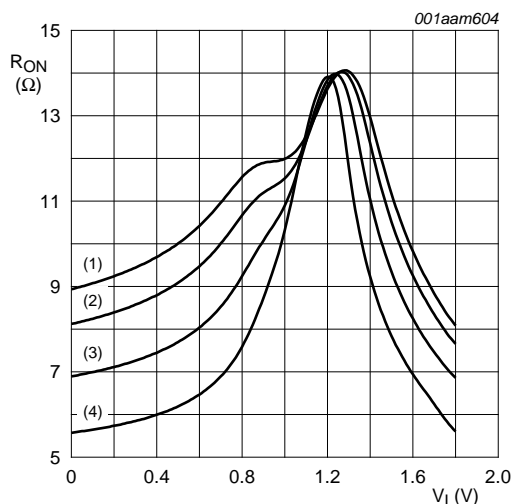
- (1) $T_{amb} = 125\text{ }^{\circ}\text{C}.$
- (2) $T_{amb} = 85\text{ }^{\circ}\text{C}.$
- (3) $T_{amb} = 25\text{ }^{\circ}\text{C}.$
- (4) $T_{amb} = -40\text{ }^{\circ}\text{C}.$

Fig 9. ON resistance as a function of input voltage; $V_{CC} = 2.7\text{ V}$ (supply path switch)



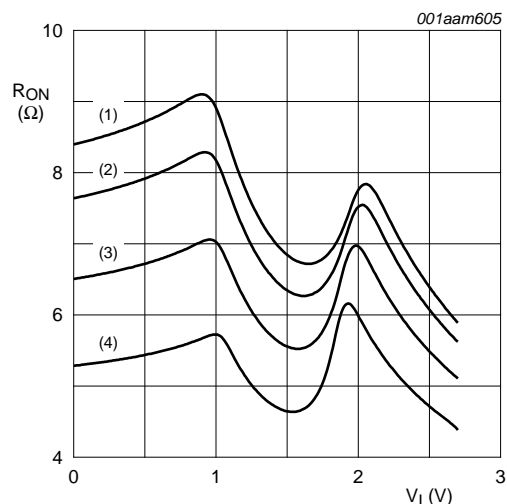
- (1) $V_{CC} = 1.8\text{ V}.$
- (2) $V_{CC} = 2.7\text{ V}.$

Fig 10. Typical ON resistance as a function of input voltage (data path switch)



- (1) $T_{amb} = 125\text{ }^{\circ}\text{C}.$
- (2) $T_{amb} = 85\text{ }^{\circ}\text{C}.$
- (3) $T_{amb} = 25\text{ }^{\circ}\text{C}.$
- (4) $T_{amb} = -40\text{ }^{\circ}\text{C}.$

Fig 11. ON resistance as a function of input voltage;
 $V_{CC} = 1.8\text{ V}$ (data path switch)



- (1) $T_{amb} = 125\text{ }^{\circ}\text{C}.$
- (2) $T_{amb} = 85\text{ }^{\circ}\text{C}.$
- (3) $T_{amb} = 25\text{ }^{\circ}\text{C}.$
- (4) $T_{amb} = -40\text{ }^{\circ}\text{C}.$

Fig 12. ON resistance as a function of input voltage;
 $V_{CC} = 2.7\text{ V}$ (data path switch)

12. Dynamic characteristics

Table 9. Dynamic characteristics

At recommended operating conditions; voltages are referenced to GND (ground = 0 V); for load circuit, see [Figure 15](#).

| Symbol | Parameter | Conditions | 25 °C | | | -40 °C to +125 °C | | | Unit |
|--------|-----------|------------|-------|--------------------|-----|-------------------|-------------|--------------|------|
| | | | Min | Typ ^[1] | Max | Min | Max (85 °C) | Max (125 °C) | |

Supply path switch

| | | | | | | | | | |
|-----------|--------------|---|---|----|----|---|-----|-----|----|
| t_{en} | enable time | S to 1Z or 1Y0, 1Y1; see Figure 13 | | | | | | | |
| | | $V_{CC} = 1.4\text{ V to }1.6\text{ V}$ | - | 41 | 90 | - | 120 | 120 | ns |
| | | $V_{CC} = 1.65\text{ V to }1.95\text{ V}$ | - | 30 | 70 | - | 80 | 90 | ns |
| | | $V_{CC} = 2.3\text{ V to }2.7\text{ V}$ | - | 20 | 45 | - | 50 | 55 | ns |
| | | $V_{CC} = 2.7\text{ V to }3.6\text{ V}$ | - | 19 | 40 | - | 45 | 50 | ns |
| | | $V_{CC} = 3.6\text{ V to }4.3\text{ V}$ | - | 19 | 40 | - | 45 | 50 | ns |
| t_{dis} | disable time | S to 1Z or 1Y0, 1Y1; see Figure 13 | | | | | | | |
| | | $V_{CC} = 1.4\text{ V to }1.6\text{ V}$ | - | 24 | 70 | - | 80 | 90 | ns |
| | | $V_{CC} = 1.65\text{ V to }1.95\text{ V}$ | - | 15 | 55 | - | 60 | 65 | ns |
| | | $V_{CC} = 2.3\text{ V to }2.7\text{ V}$ | - | 9 | 25 | - | 30 | 35 | ns |
| | | $V_{CC} = 2.7\text{ V to }3.6\text{ V}$ | - | 8 | 20 | - | 25 | 30 | ns |
| | | $V_{CC} = 3.6\text{ V to }4.3\text{ V}$ | - | 8 | 20 | - | 25 | 30 | ns |

Table 9. Dynamic characteristics ...continuedAt recommended operating conditions; voltages are referenced to GND (ground = 0 V); for load circuit, see [Figure 15](#).

| Symbol | Parameter | Conditions | 25 °C | | | –40 °C to +125 °C | | | Unit |
|------------------|------------------------|--|-------|--------------------|-----|-------------------|-------------|--------------|------|
| | | | Min | Typ ^[1] | Max | Min | Max (85 °C) | Max (125 °C) | |
| t _{b-m} | break-before-make time | see Figure 14 ^[2] | | | | | | | |
| | | V _{CC} = 1.4 V to 1.6 V | - | 20 | - | 9 | - | - | ns |
| | | V _{CC} = 1.65 V to 1.95 V | - | 17 | - | 7 | - | - | ns |
| | | V _{CC} = 2.3 V to 2.7 V | - | 13 | - | 4 | - | - | ns |
| | | V _{CC} = 2.7 V to 3.6 V | - | 11 | - | 3 | - | - | ns |
| | | V _{CC} = 3.6 V to 4.3 V | - | 11 | - | 2 | - | - | ns |
| Data path switch | | | | | | | | | |
| t _{en} | enable time | S to nZ or nYn; see Figure 13 | | | | | | | |
| | | V _{CC} = 1.4 V to 1.6 V | - | 40 | 90 | - | 120 | 120 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | - | 29 | 70 | - | 80 | 90 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | - | 20 | 45 | - | 50 | 55 | ns |
| | | V _{CC} = 2.7 V to 3.6 V | - | 19 | 40 | - | 45 | 50 | ns |
| | | V _{CC} = 3.6 V to 4.3 V | - | 19 | 40 | - | 45 | 50 | ns |
| t _{dis} | disable time | S to nZ or nYn; see Figure 13 | | | | | | | |
| | | V _{CC} = 1.4 V to 1.6 V | - | 21 | 70 | - | 80 | 90 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | - | 13 | 55 | - | 60 | 65 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | - | 8 | 25 | - | 30 | 35 | ns |
| | | V _{CC} = 2.7 V to 3.6 V | - | 7 | 20 | - | 25 | 30 | ns |
| | | V _{CC} = 3.6 V to 4.3 V | - | 7 | 20 | - | 25 | 30 | ns |
| t _{b-m} | break-before-make time | see Figure 14 ^[2] | | | | | | | |
| | | V _{CC} = 1.4 V to 1.6 V | - | 23 | - | 9 | - | - | ns |
| | | V _{CC} = 1.65 V to 1.95 V | - | 19 | - | 7 | - | - | ns |
| | | V _{CC} = 2.3 V to 2.7 V | - | 15 | - | 4 | - | - | ns |
| | | V _{CC} = 2.7 V to 3.6 V | - | 13 | - | 3 | - | - | ns |
| | | V _{CC} = 3.6 V to 4.3 V | - | 12 | - | 2 | - | - | ns |

[1] Typical values are measured at T_{amb} = 25 °C and V_{CC} = 1.5 V, 1.8 V, 2.5 V, 3.3 V and 4.3 V respectively.

[2] Break-before-make guaranteed by design.

12.1 Waveform and test circuits

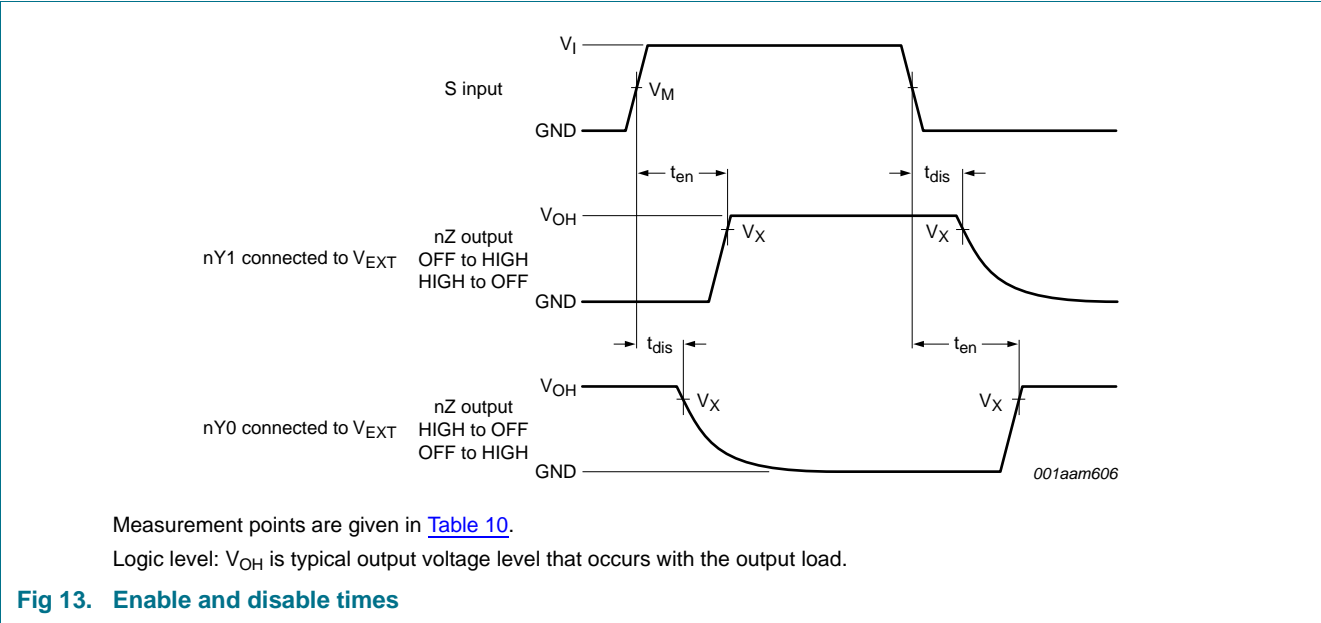


Table 10. Measurement points

| Supply voltage | Input | Output |
|----------------|-------------|-------------|
| V_{CC} | V_M | V_X |
| 1.4 V to 4.3 V | $0.5V_{CC}$ | $0.9V_{OH}$ |

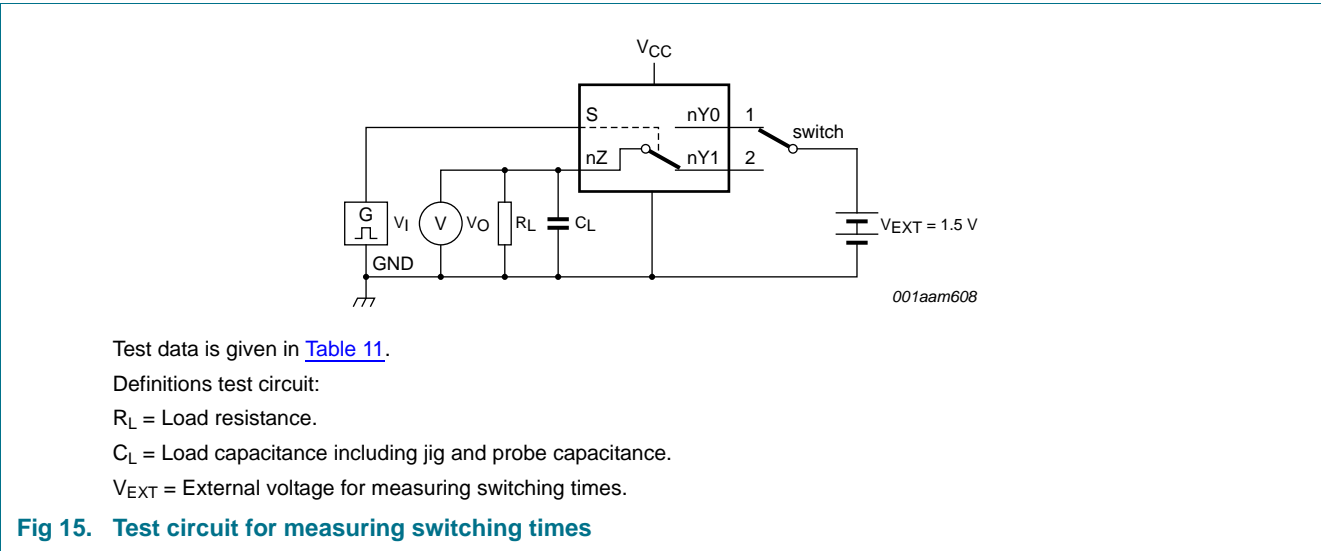
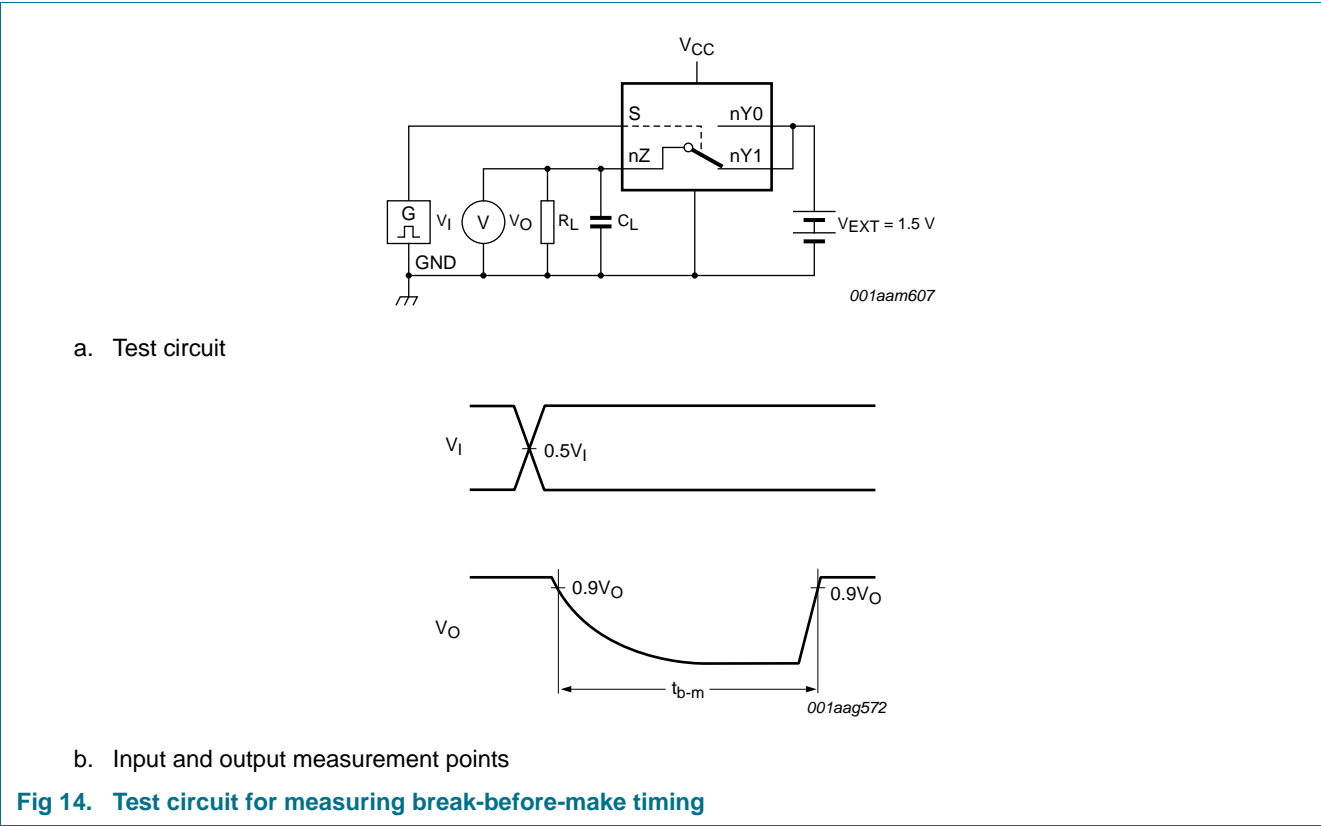


Table 11. Test data

| Supply voltage | Input | | Load | |
|----------------|----------|-----------------------|-------|-------------|
| V_{CC} | V_I | t_r, t_f | C_L | R_L |
| 1.4 V to 4.3 V | V_{CC} | $\leq 2.5 \text{ ns}$ | 35 pF | 50 Ω |

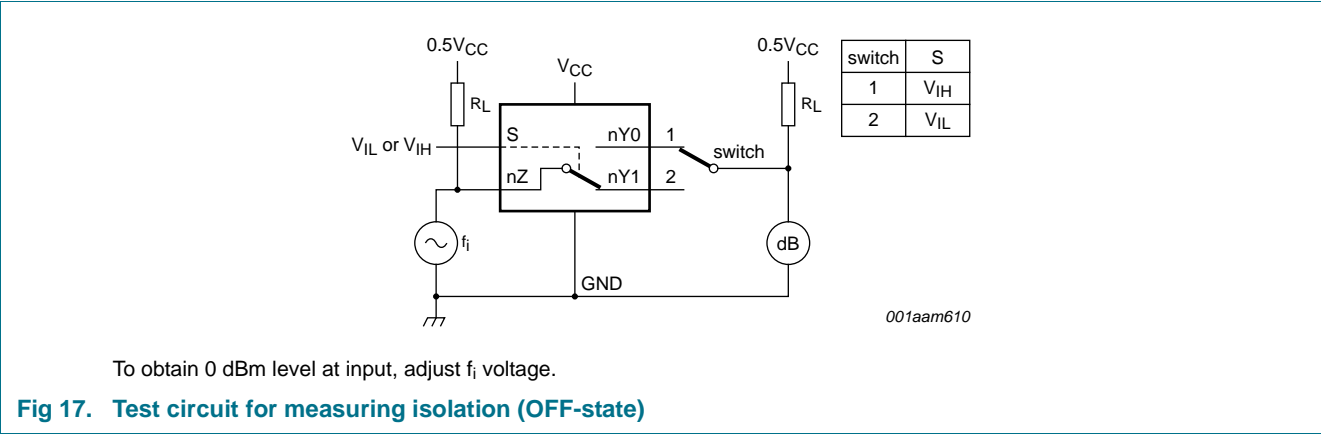
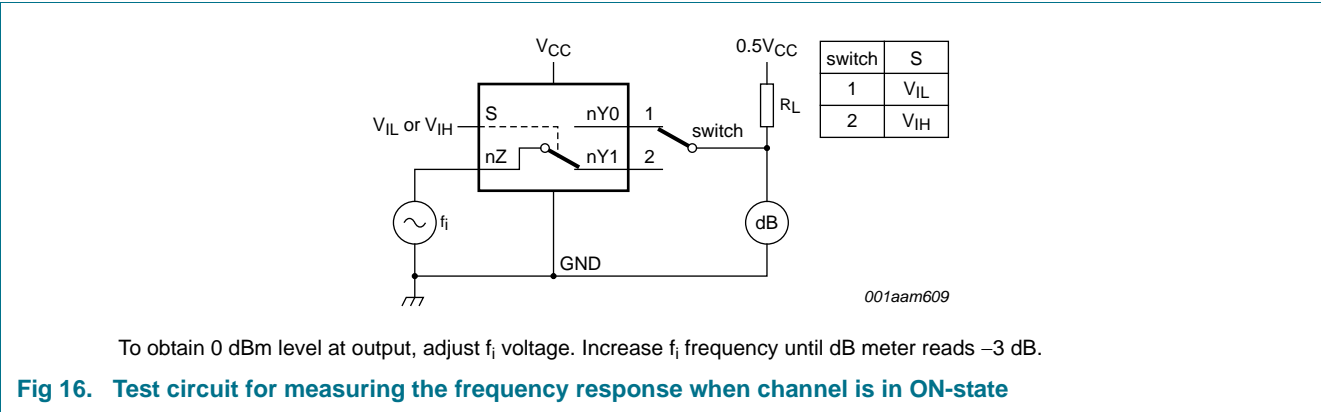
12.2 Additional dynamic characteristics

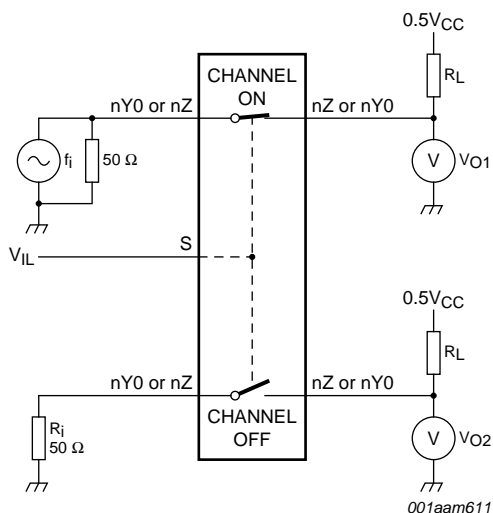
Table 12. Additional dynamic characteristics
At recommended operating conditions; voltages are referenced to GND (ground = 0 V); $V_I = \text{GND}$ or V_{CC} (unless otherwise specified); $t_r = t_f \leq 2.5 \text{ ns}$; $T_{amb} = 25 \text{ }^\circ\text{C}$.

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|-------------------------|--------------------------|--|-----|-----|-----|------|
| Data path switch | | | | | | |
| $f_{(-3\text{dB})}$ | –3 dB frequency response | $R_L = 50 \text{ }\Omega$; see Figure 16 $V_{CC} = 2.7 \text{ V to } 3.6 \text{ V}$ | | | | |
| | | | - | 330 | - | MHz |
| α_{iso} | isolation (OFF-state) | $f_i = 10 \text{ MHz}$; $R_L = 50 \text{ }\Omega$; see Figure 17 $V_{CC} = 2.7 \text{ V to } 3.6 \text{ V}$ | | | | |
| | | | - | -60 | - | dB |
| Xtalk | crosstalk | between switches; $f_i = 10 \text{ MHz}$; $R_L = 50 \text{ }\Omega$; see Figure 18 $V_{CC} = 2.7 \text{ V to } 3.6 \text{ V}$ | | | | |
| | | | - | -60 | - | dB |
| Q_{inj} | charge injection | $f_i = 1 \text{ MHz}$; $C_L = 0.1 \text{ nF}$; $R_L = 1 \text{ M}\Omega$; $V_{\text{gen}} = 0 \text{ V}$; $R_{\text{gen}} = 0 \text{ }\Omega$; see Figure 19 $V_{CC} = 2.7 \text{ V to } 3.6 \text{ V}$ | | | | |
| | | | - | 10 | - | pC |

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

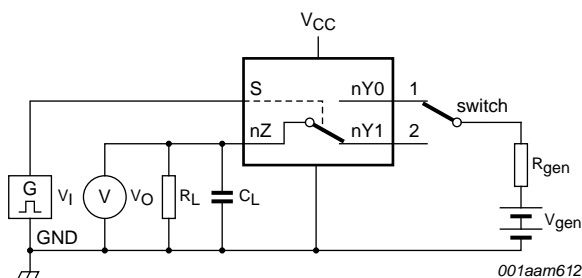
12.3 Test circuits



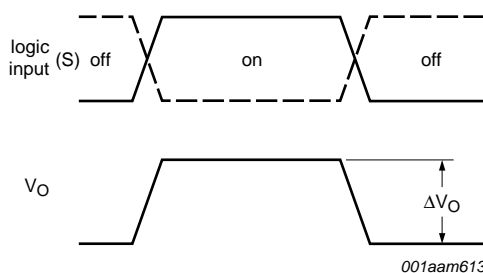


$20 \log_{10} (V_{O2} / V_{O1})$ or $20 \log_{10} (V_{O1} / V_{O2})$.

Fig 18. Test circuit for measuring crosstalk between switches



a. Test circuit



b. Input and output pulse definitions

Definition: $Q_{inj} = \Delta V_O \times C_L$.

ΔV_O = output voltage variation.

R_{gen} = generator resistance.

V_{gen} = generator voltage.

Fig 19. Test circuit for measuring charge injection

13. Package outline

HXQFN16U: plastic thermal enhanced extremely thin quad flat package; no leads;
16 terminals; UTLP based; body 3 x 3 x 0.5 mm

SOT1039-1

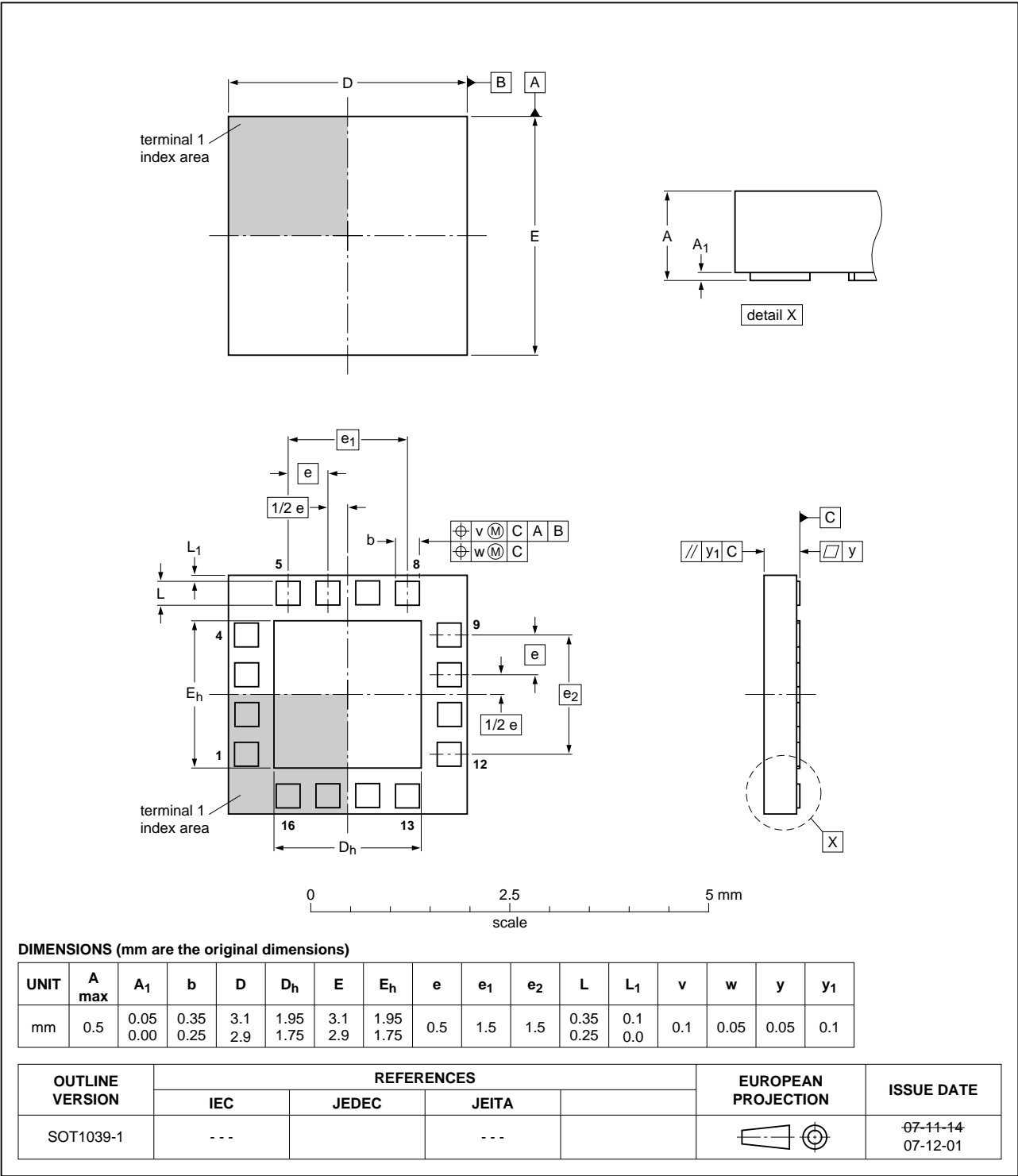


Fig 20. Package outline SOT1039-1 (HXQFN16U)

14. Abbreviations

Table 13. Abbreviations

| Acronym | Description |
|---------|---|
| CDM | Charged Device Model |
| CMOS | Complementary Metal-Oxide Semiconductor |
| ESD | ElectroStatic Discharge |
| HBM | Human Body Model |
| MM | Machine Model |
| PDA | Personal Digital Assistant |
| TTL | Transistor-Transistor Logic |

15. Revision history

Table 14. Revision history

| Document ID | Release date | Data sheet status | Change notice | Supersedes |
|--------------------|--------------|--------------------|---------------|------------|
| NX3DV2567_Q100 v.1 | 20140120 | Product data sheet | - | - |

16. Legal information

16.1 Data sheet status

| Document status ^{[1][2]} | Product status ^[3] | Definition |
|-----------------------------------|-------------------------------|---|
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| Preliminary [short] data sheet | Qualification | This document contains data from the preliminary specification. |
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[2] The term 'short data sheet' is explained in section "Definitions".

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