

NX3L2267-Q100

Low-ohmic dual single-pole double-throw analog switch

Rev. 1 — 7 August 2012

Product data sheet

1. General description

The NX3L2267-Q100 is a dual low-ohmic single-pole double-throw analog switch suitable for use as an analog or digital 2:1 multiplexer/demultiplexer. Each switch has a digital select input (nS), two independent inputs/outputs (nY0 and nY1) and a common input/output (nZ).

Schmitt trigger action at the digital inputs makes the circuit tolerant to slower input rise and fall times. Low threshold digital inputs allows this device to be driven by 1.8 V logic levels in 3.3 V applications without significant increase in supply current I_{CC} . This makes it possible for the NX3L2267-Q100 to switch 4.3 V signals with a 1.8 V digital controller, eliminating the need for logic level translation. The NX3L2267-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. Its low ON resistance (0.5 Ω) and flatness (0.13 Ω) ensures minimal attenuation and distortion of transmitted signals.

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 (peak):
 - ◆ 1.65 Ω (typical) at $V_{CC} = 1.4\text{ V}$
 - ◆ 0.95 Ω (typical) at $V_{CC} = 1.65\text{ V}$
 - ◆ 0.55 Ω (typical) at $V_{CC} = 2.3\text{ V}$
 - ◆ 0.50 Ω (typical) at $V_{CC} = 2.7\text{ V}$
 - ◆ 0.50 Ω (typical) at $V_{CC} = 4.3\text{ V}$
- Break-before-make switching
- High noise immunity
- ESD protection:
 - ◆ MIL-STD-883, method 3015 Class 3A exceeds 7500 V
 - ◆ HBM JESD22-A114F Class 3A exceeds 7500 V
 - ◆ MM JESD22-A115-A exceeds 200 V ($C = 200\text{ pF}$, $R = 0\text{ }\Omega$)
 - ◆ CDM AEC-Q100-011 revision B exceeds 1000 V
 - ◆ IEC61000-4-2 contact discharge exceeds 8000 V for switch ports
- 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)

3. Applications

- Cell phone
- PDA
- Portable media player

4. Ordering information

Table 1. Ordering information

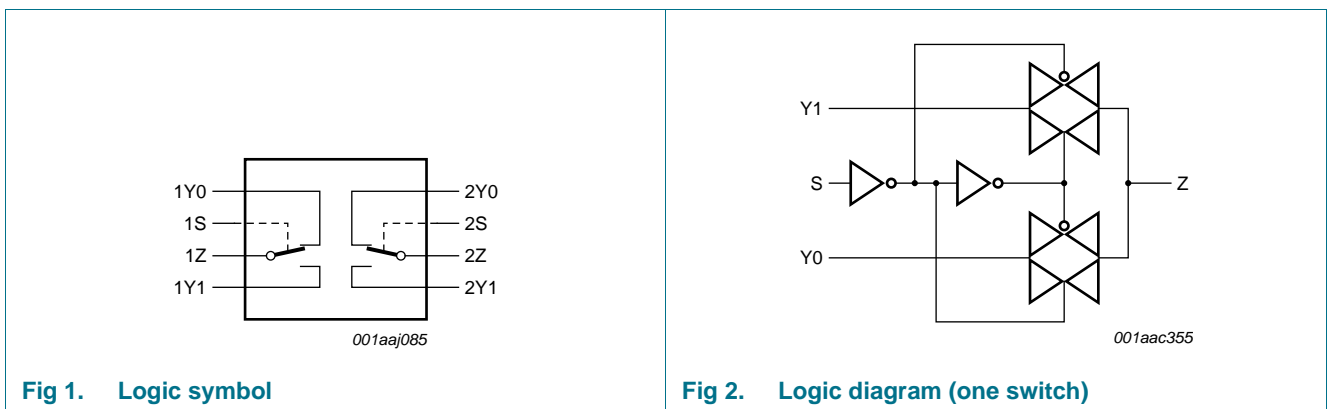
| Type number | Package | | | Version |
|-----------------|-------------------|--------|---|-----------|
| | Temperature range | Name | Description | |
| NX3L2267GM-Q100 | -40 °C to +125 °C | XQFN10 | plastic extremely thin quad flat package; no leads; 10 terminals; body 1.55 × 2.00 × 0.50 mm | SOT1049-3 |
| NX3L2267GU-Q100 | -40 °C to +125 °C | XQFN10 | plastic, extremely thin quad flat package; no leads; 10 terminals; body 1.40 × 1.80 × 0.50 mm | SOT1160-1 |

5. Marking

Table 2. Marking

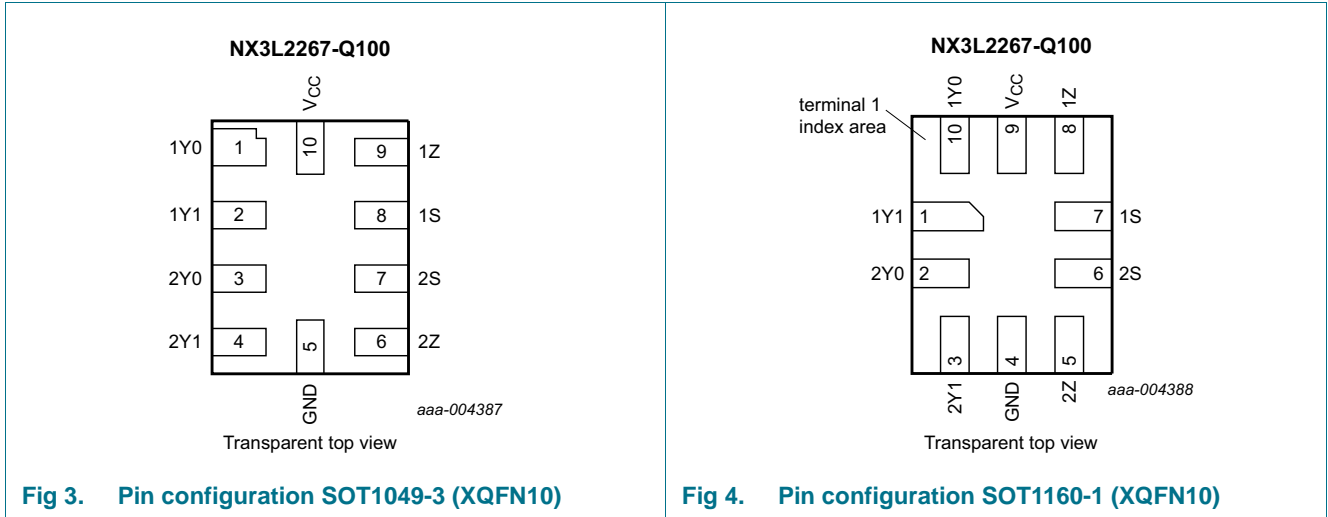
| Type number | Marking code |
|-----------------|--------------|
| NX3L2267GM-Q100 | M67 |
| NX3L2267GU-Q100 | M7 |

6. Functional diagram



7. Pinning information

7.1 Pinning



7.2 Pin description

Table 3. Pin description

| Symbol | Pin | | Description |
|-----------------|-----------|-----------|-----------------------------|
| | SOT1049-3 | SOT1160-1 | |
| 1Y0 | 1 | 10 | independent input or output |
| 1Y1 | 2 | 1 | independent input or output |
| 2Y0 | 3 | 2 | independent input or output |
| 2Y1 | 4 | 3 | independent input or output |
| GND | 5 | 4 | ground (0 V) |
| 2Z | 6 | 5 | common output or input |
| 2S | 7 | 6 | select input |
| 1S | 8 | 7 | select input |
| 1Z | 9 | 8 | common output or input |
| V _{CC} | 10 | 9 | supply voltage |

8. Functional description

Table 4. Function table^[1]

| Input nS | Channel on |
|----------|------------|
| L | nY0 = nZ |
| H | nY1 = nZ |

[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 nS | ^[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 | 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 |
| T _{stg} | storage temperature | | -65 | +150 | °C |
| P _{tot} | total power dissipation | T _{amb} = -40 °C to +125 °C | ^{[3][4]} - | 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] For XQFN10 (SOT1049-3) package: above 132 °C the value of P_{tot} derates linearly with 14.1 mW/K.

[4] For XQFN10 (SOT1160-1) package: above 128 °C the value of P_{tot} derates linearly with 11.5 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 nS | 0 | 4.3 | V |
| V _{SW} | switch voltage | switch input nY0 or nY1 | ^[1] 0 | V _{CC} | V |
| T _{amb} | ambient temperature | | -40 | +125 | °C |
| Δt/ΔV | 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 select input nS signal levels.

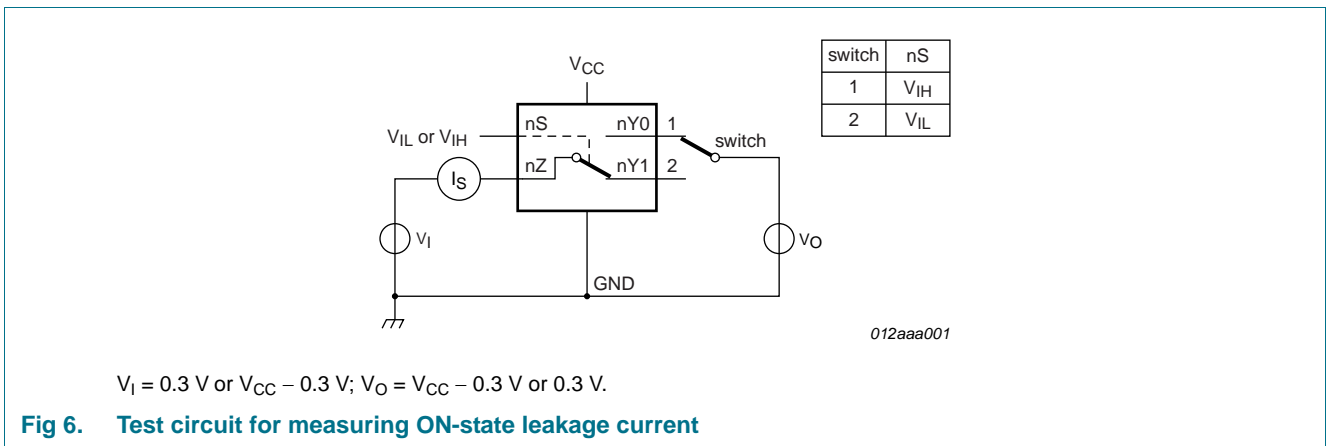
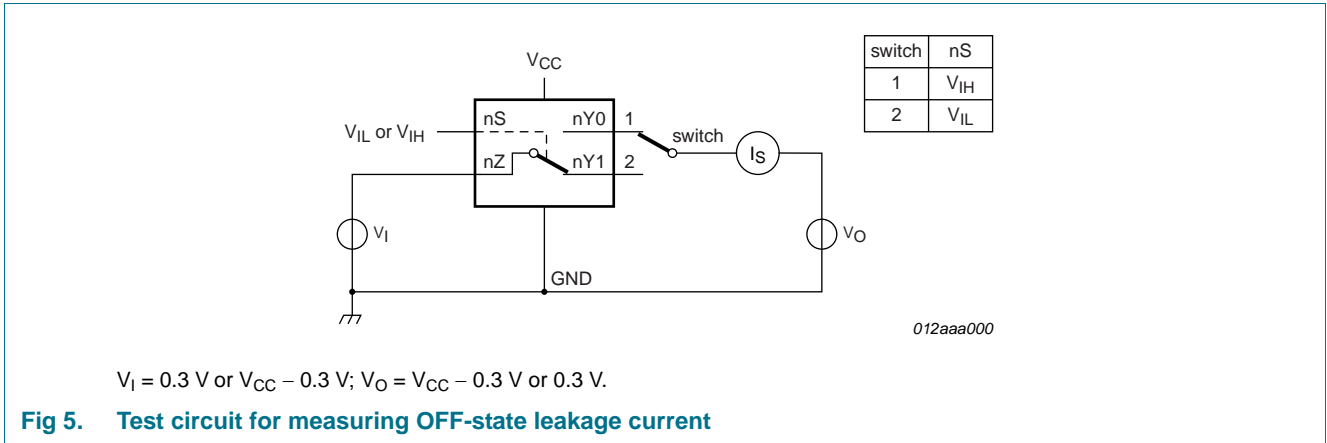
11. Static characteristics

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 | - | - | 0.5 | - | 0.5 | 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 nS; 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 | nYn port; see Figure 5 | | | | | | | |
| | | V _{CC} = 1.4 V to 3.6 V | - | - | ±5 | - | ±10 | ±100 | nA |
| | | V _{CC} = 3.6 V to 4.3 V | - | - | ±10 | - | ±50 | ±200 | nA |
| I _{S(ON)} | ON-state leakage current | nZ port; see Figure 6 | | | | | | | |
| | | V _{CC} = 1.4 V to 3.6 V | - | - | ±5 | - | ±20 | ±200 | nA |
| | | V _{CC} = 3.6 V to 4.3 V | - | - | ±10 | - | ±50 | ±400 | nA |
| I _{CC} | supply current | V _I = V _{CC} or GND; V _{SW} = GND or V _{CC} | | | | | | | |
| | | V _{CC} = 3.6 V | - | - | 100 | - | 300 | 3000 | nA |
| | | V _{CC} = 4.3 V | - | - | 150 | - | 500 | 5000 | 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 |
| C _I | input capacitance | V _I = 1.8 V; V _{CC} = 2.5 V | - | 50 | 200 | - | 300 | 500 | nA |
| | | | - | 1.0 | - | - | - | - | pF |
| C _{S(OFF)} | OFF-state capacitance | port nYn | - | 35 | - | - | - | - | pF |
| C _{S(ON)} | ON-state capacitance | port nYn | - | 135 | - | - | - | - | 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 8 to Figure 14.

| Symbol | Parameter | Conditions | -40 °C to +85 °C | | | -40 °C to +125 °C | | Unit | |
|-----------------------|---|---|--------------------------|--------------------|------|-------------------|-----|------|---|
| | | | Min | Typ ^[1] | Max | Min | Max | | |
| R _{ON(peak)} | ON resistance (peak) | port nYn; V _I = GND to V _{CC} ; I _{SW} = 100 mA; see Figure 7 | | | | | | | |
| | | | V _{CC} = 1.4 V | - | 1.65 | 3.7 | - | 4.1 | Ω |
| | | | V _{CC} = 1.65 V | - | 0.95 | 1.6 | - | 1.7 | Ω |
| | | | V _{CC} = 2.3 V | - | 0.55 | 0.8 | - | 0.9 | Ω |
| | | | V _{CC} = 2.7 V | - | 0.50 | 0.75 | - | 0.9 | Ω |
| | | | V _{CC} = 4.3 V | - | 0.50 | 0.75 | - | 0.9 | Ω |
| ΔR _{ON} | ON resistance mismatch between channels | V _I = GND to V _{CC} ; I _{SW} = 100 mA | | | | | | | |
| | | | V _{CC} = 1.4 V | - | 0.20 | 0.35 | - | 0.35 | Ω |
| | | | V _{CC} = 1.65 V | - | 0.20 | 0.25 | - | 0.30 | Ω |
| | | | V _{CC} = 2.3 V | - | 0.09 | 0.13 | - | 0.15 | Ω |
| | | | V _{CC} = 2.7 V | - | 0.09 | 0.125 | - | 0.15 | Ω |
| | | | V _{CC} = 4.3 V | - | 0.09 | 0.125 | - | 0.15 | Ω |
| R _{ON(flat)} | ON resistance (flatness) | port nYn; V _I = GND to V _{CC} ; I _{SW} = 100 mA | | | | | | | |
| | | | V _{CC} = 1.4 V | - | 1.05 | 3.35 | - | 3.65 | Ω |
| | | | V _{CC} = 1.65 V | - | 0.55 | 1.25 | - | 1.35 | Ω |
| | | | V _{CC} = 2.3 V | - | 0.20 | 0.35 | - | 0.40 | Ω |
| | | | V _{CC} = 2.7 V | - | 0.18 | 0.35 | - | 0.40 | Ω |
| | | | V _{CC} = 4.3 V | - | 0.23 | 0.40 | - | 0.45 | Ω |

[1] Typical values are measured at T_{amb} = 25 °C.

[2] Measured at identical V_{CC}, temperature and input voltage.

[3] Flatness is defined as the difference between the maximum and minimum value of ON resistance measured at identical V_{CC} and temperature.

11.3 ON resistance test circuit and graphs

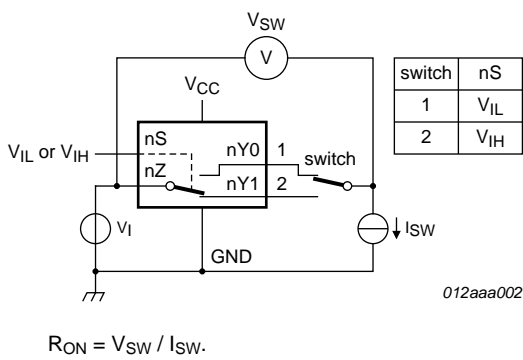
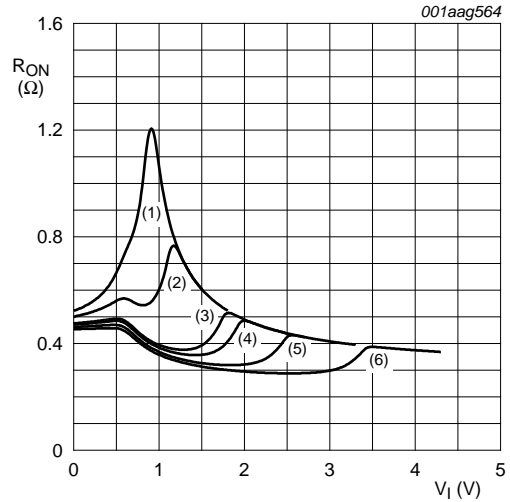


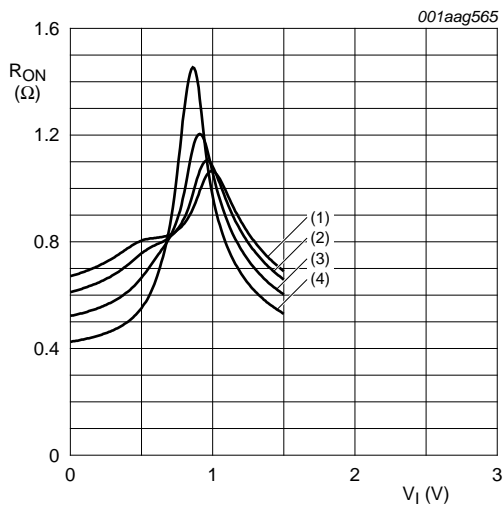
Fig 7. Test circuit for measuring ON resistance



- (1) V_{CC} = 1.5 V.
- (2) V_{CC} = 1.8 V.
- (3) V_{CC} = 2.5 V.
- (4) V_{CC} = 2.7 V.
- (5) V_{CC} = 3.3 V.
- (6) V_{CC} = 4.3 V.

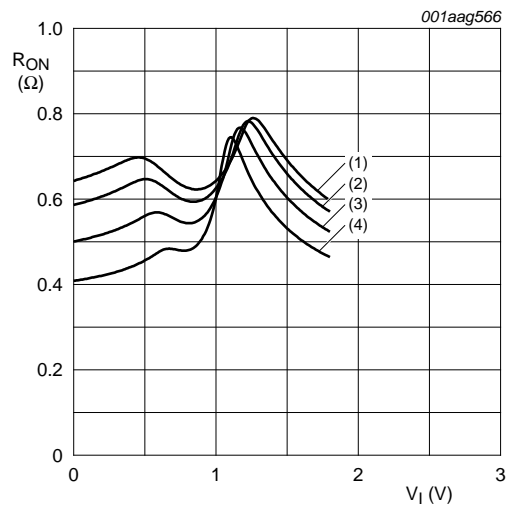
Measured at T_{amb} = 25 °C.

Fig 8. Typical ON resistance as a function of input voltage (Yn port)



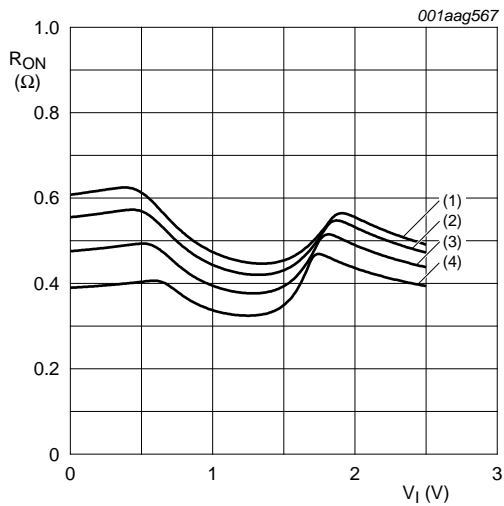
- (1) $T_{amb} = 125\text{ }^{\circ}\text{C}.$
- (2) $T_{amb} = 85\text{ }^{\circ}\text{C}.$
- (3) $T_{amb} = 25\text{ }^{\circ}\text{C}.$
- (4) $T_{amb} = -40\text{ }^{\circ}\text{C}.$

Fig 9. ON resistance as a function of input voltage; $V_{CC} = 1.5\text{ V}$ (nYn port)



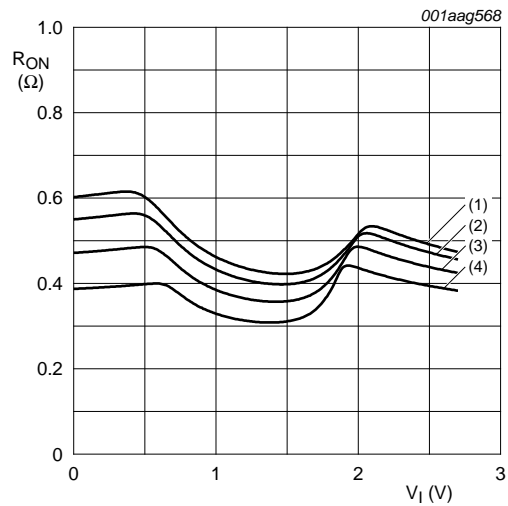
- (1) $T_{amb} = 125\text{ }^{\circ}\text{C}.$
- (2) $T_{amb} = 85\text{ }^{\circ}\text{C}.$
- (3) $T_{amb} = 25\text{ }^{\circ}\text{C}.$
- (4) $T_{amb} = -40\text{ }^{\circ}\text{C}.$

Fig 10. ON resistance as a function of input voltage; $V_{CC} = 1.8\text{ V}$ (nYn port)



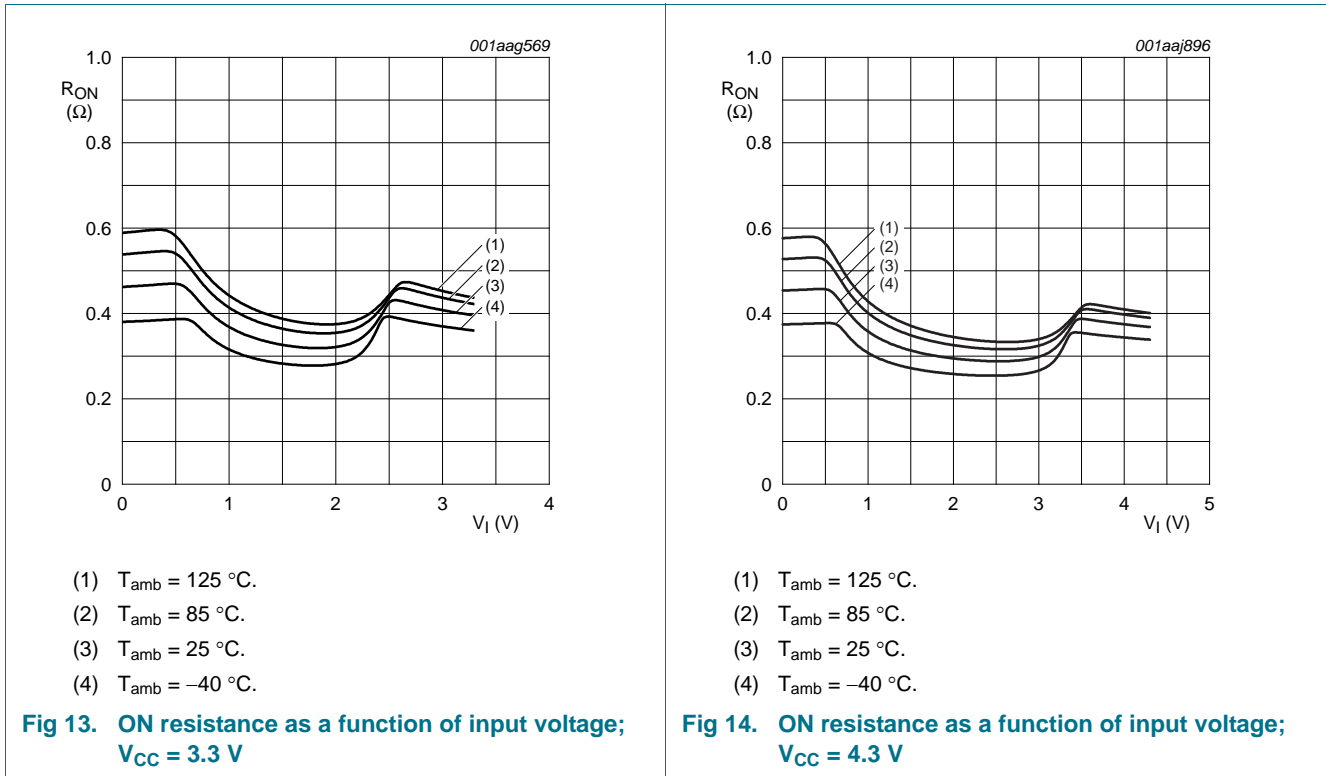
- (1) $T_{amb} = 125\text{ }^{\circ}\text{C}.$
- (2) $T_{amb} = 85\text{ }^{\circ}\text{C}.$
- (3) $T_{amb} = 25\text{ }^{\circ}\text{C}.$
- (4) $T_{amb} = -40\text{ }^{\circ}\text{C}.$

Fig 11. ON resistance as a function of input voltage; $V_{CC} = 2.5\text{ V}$ (nYn port)



- (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; $V_{CC} = 2.7\text{ V}$ (nYn port)



12. Dynamic characteristics

Table 9. Dynamic characteristics

At recommended operating conditions; voltages are referenced to GND (ground = 0 V); for load circuit see [Figure 17](#).

| Symbol | Parameter | Conditions | T _{amb} = 25 °C | | | T _{amb} = -40 °C to +125 °C | | | Unit |
|------------------|--------------|---|--------------------------|--------------------|-----|--------------------------------------|-------------|--------------|------|
| | | | Min | Typ ^[1] | Max | Min | Max (85 °C) | Max (125 °C) | |
| t _{en} | enable time | nS to nZ or nYn; see Figure 15 | | | | | | | |
| | | V _{CC} = 1.4 V to 1.6 V | - | 50 | 90 | - | 120 | 120 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | - | 36 | 70 | - | 80 | 90 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | - | 24 | 45 | - | 50 | 55 | ns |
| | | V _{CC} = 2.7 V to 3.6 V | - | 22 | 40 | - | 45 | 50 | ns |
| | | V _{CC} = 3.6 V to 4.3 V | - | 22 | 40 | - | 45 | 50 | ns |
| t _{dis} | disable time | nS to nZ or nYn; see Figure 15 | | | | | | | |
| | | V _{CC} = 1.4 V to 1.6 V | - | 32 | 70 | - | 80 | 90 | ns |
| | | V _{CC} = 1.65 V to 1.95 V | - | 20 | 55 | - | 60 | 65 | ns |
| | | V _{CC} = 2.3 V to 2.7 V | - | 12 | 25 | - | 30 | 35 | ns |
| | | V _{CC} = 2.7 V to 3.6 V | - | 10 | 20 | - | 25 | 30 | ns |
| | | V _{CC} = 3.6 V to 4.3 V | - | 10 | 20 | - | 25 | 30 | ns |

Table 9. Dynamic characteristics ...continued

At recommended operating conditions; voltages are referenced to GND (ground = 0 V); for load circuit see [Figure 17](#).

| Symbol | Parameter | Conditions | T _{amb} = 25 °C | | | T _{amb} = -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 16 ^[2] | | | | | | | |
| | | V _{CC} = 1.4 V to 1.6 V | - | 19 | - | 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 | - | 10 | - | 3 | - | - | ns |
| | | V _{CC} = 3.6 V to 4.3 V | - | 10 | - | 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

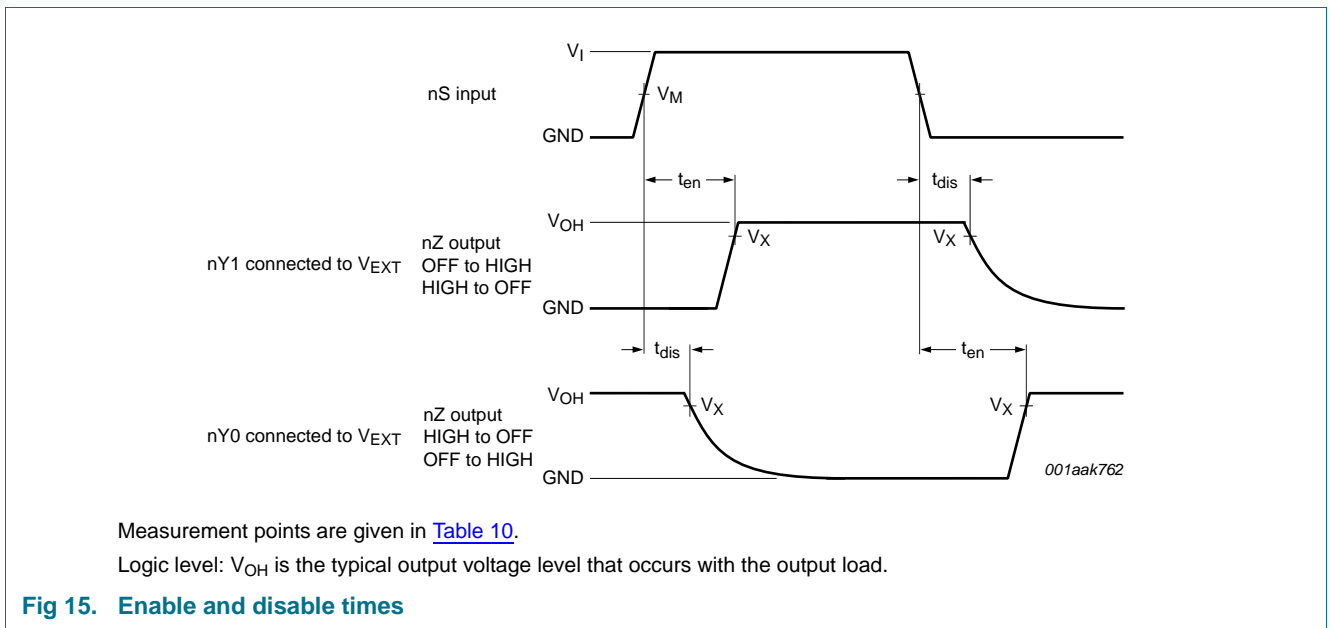


Table 10. Measurement points

| Supply voltage | Input | Output |
|-----------------|--------------------|--------------------|
| V _{CC} | V _M | V _X |
| 1.4 V to 4.3 V | 0.5V _{CC} | 0.9V _{OH} |

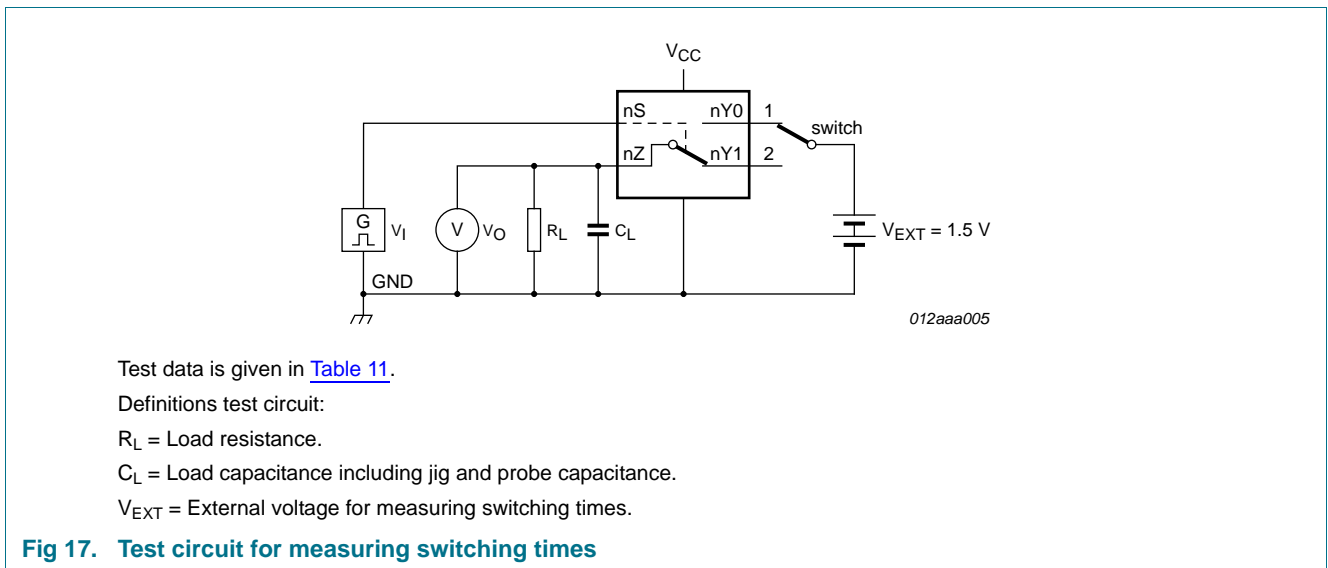
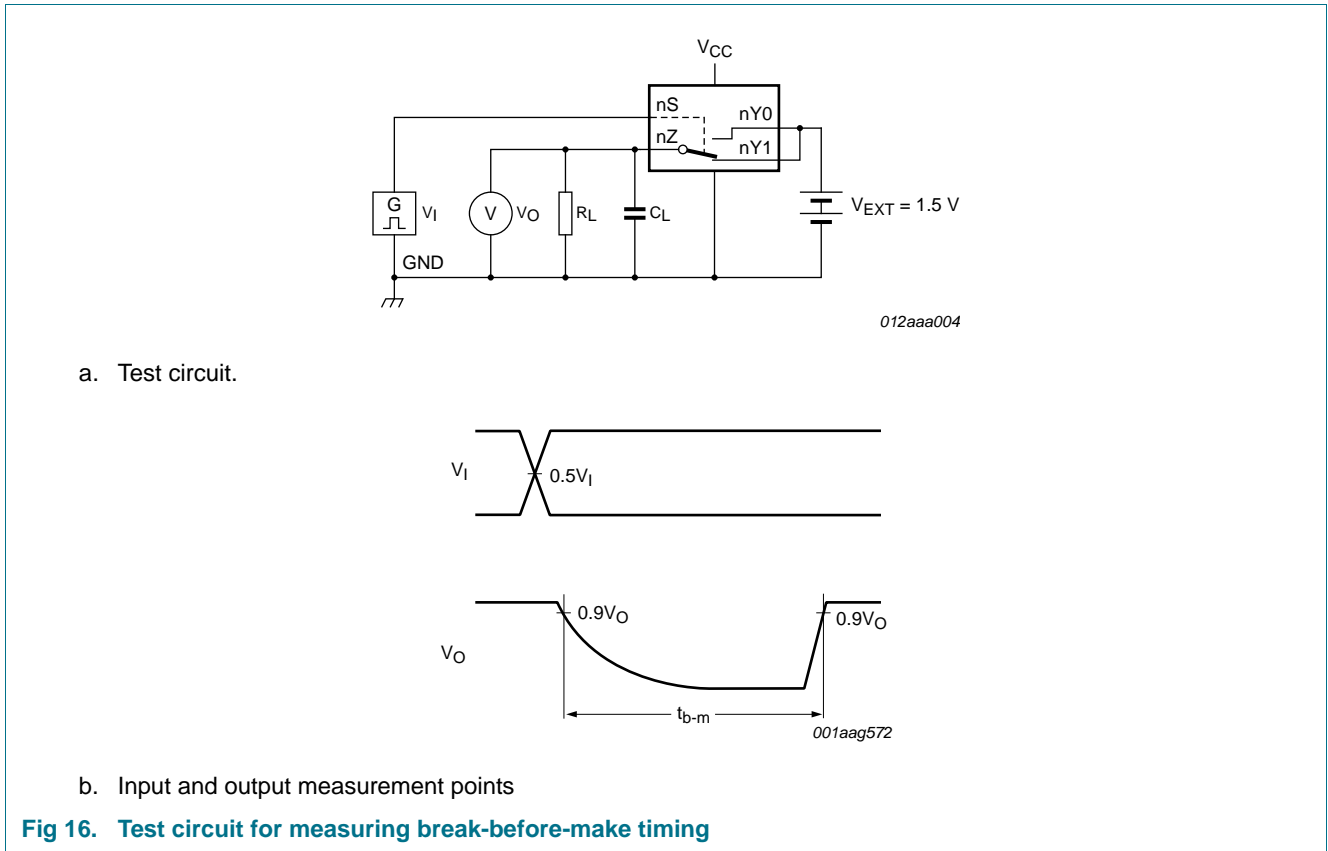


Table 11. Test data

| 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} | ≤ 2.5 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); $t_r = t_f \leq 2.5 \text{ ns}$.

| Symbol | Parameter | Conditions | T _{amb} = 25 °C | | | Unit |
|-----------------------|---------------------------|--|--------------------------|------|-----|------|
| | | | Min | Typ | Max | |
| THD | total harmonic distortion | $f_i = 20 \text{ Hz to } 20 \text{ kHz}; R_L = 32 \text{ } \Omega$; see Figure 18 [1] | | | | |
| | | $V_{CC} = 1.4 \text{ V}; V_I = 1 \text{ V (p-p)}$ | - | 0.15 | - | % |
| | | $V_{CC} = 1.65 \text{ V}; V_I = 1.2 \text{ V (p-p)}$ | - | 0.10 | - | % |
| | | $V_{CC} = 2.3 \text{ V}; V_I = 1.5 \text{ V (p-p)}$ | - | 0.02 | - | % |
| | | $V_{CC} = 2.7 \text{ V}; V_I = 2 \text{ V (p-p)}$ | - | 0.02 | - | % |
| | | $V_{CC} = 4.3 \text{ V}; V_I = 2 \text{ V (p-p)}$ | - | 0.02 | - | % |
| $f_{(-3\text{dB})}$ | -3 dB frequency response | $R_L = 50 \text{ } \Omega$; see Figure 19 [1] | | | | |
| | | port nYn; $V_{CC} = 1.4 \text{ V to } 4.3 \text{ V}$ | - | 60 | - | MHz |
| α_{iso} | isolation (OFF-state) | $f_i = 100 \text{ kHz}; R_L = 50 \text{ } \Omega$; see Figure 20 [1] | | | | |
| | | $V_{CC} = 1.4 \text{ V to } 4.3 \text{ V}$ | - | -90 | - | dB |
| V_{ct} | crosstalk voltage | between digital inputs and switch; $f_i = 1 \text{ MHz}; C_L = 50 \text{ pF}; R_L = 50 \text{ } \Omega$; see Figure 21 | | | | |
| | | $V_{CC} = 1.4 \text{ V to } 3.6 \text{ V}$ | - | 0.21 | - | V |
| | | $V_{CC} = 3.6 \text{ V to } 4.3 \text{ V}$ | - | 0.30 | - | V |
| Xtalk | crosstalk | between switches; $f_i = 100 \text{ kHz}; R_L = 50 \text{ } \Omega$; see Figure 22 [1] | | | | |
| | | $V_{CC} = 1.4 \text{ V to } 4.3 \text{ V}$ | - | -90 | - | 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 23 | | | | |
| | | $V_{CC} = 1.5 \text{ V}$ | - | 4 | - | pC |
| | | $V_{CC} = 1.8 \text{ V}$ | - | 6 | - | pC |
| | | $V_{CC} = 2.5 \text{ V}$ | - | 16 | - | pC |
| | | $V_{CC} = 3.3 \text{ V}$ | - | 24 | - | pC |
| | | $V_{CC} = 4.3 \text{ V}$ | - | 37 | - | pC |

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

12.3 Test circuits

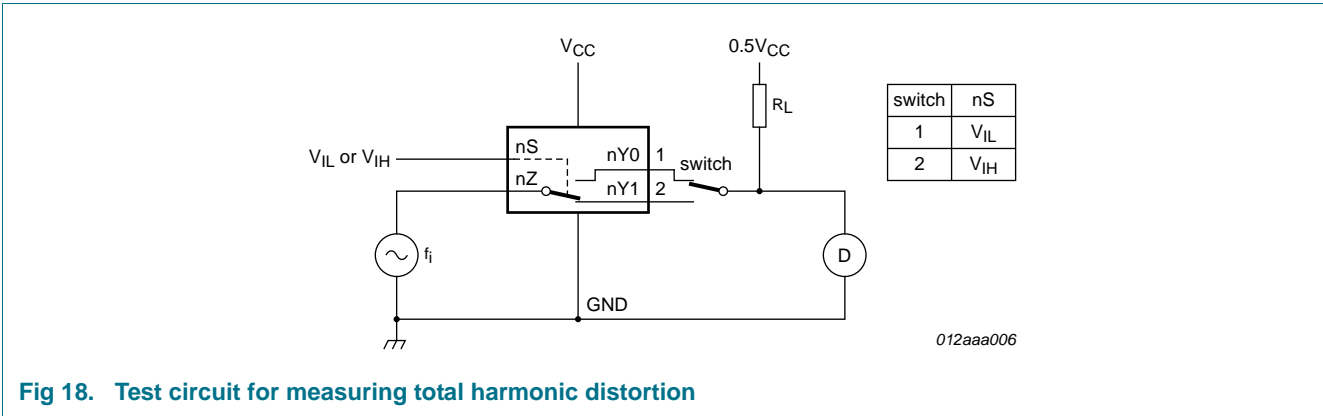


Fig 18. Test circuit for measuring total harmonic distortion

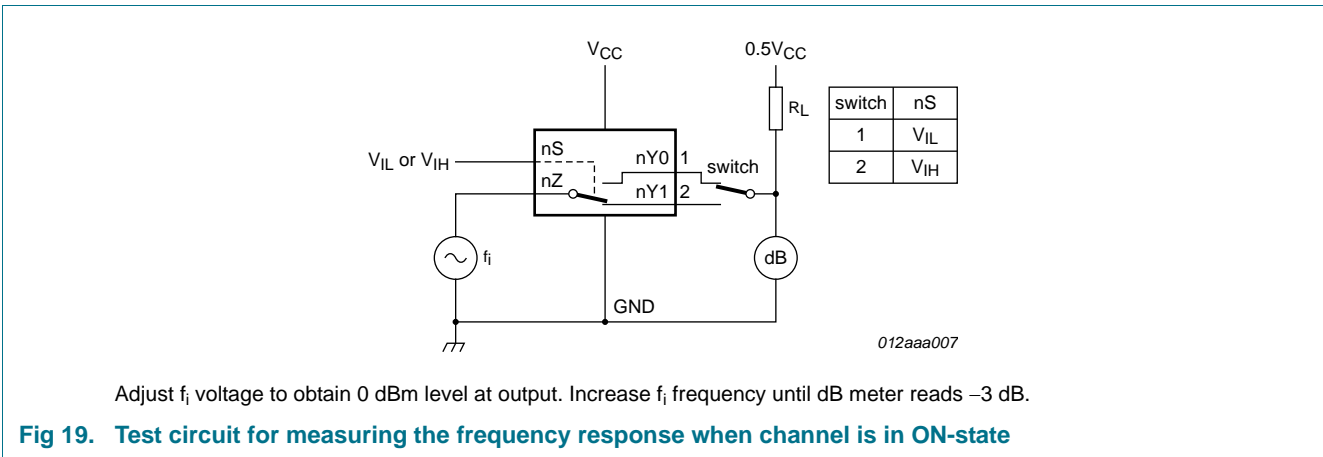


Fig 19. Test circuit for measuring the frequency response when channel is in ON-state

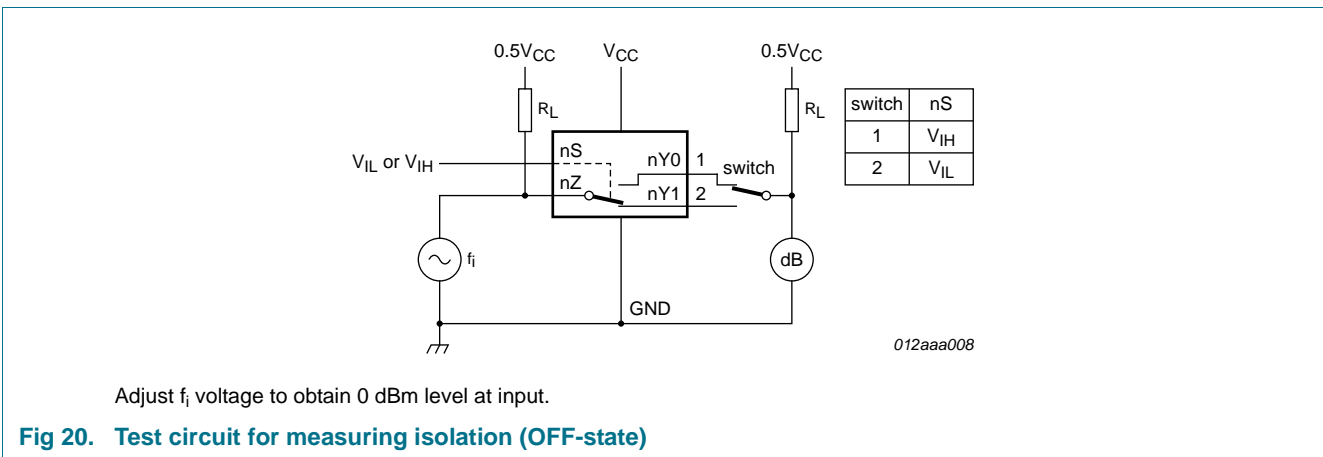
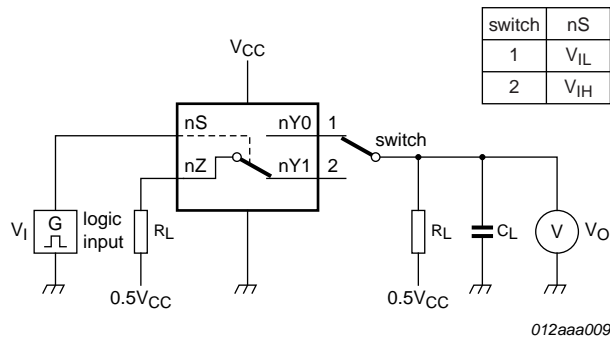
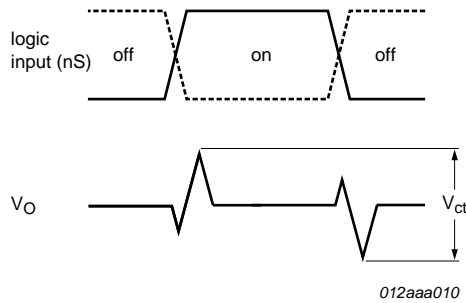


Fig 20. Test circuit for measuring isolation (OFF-state)

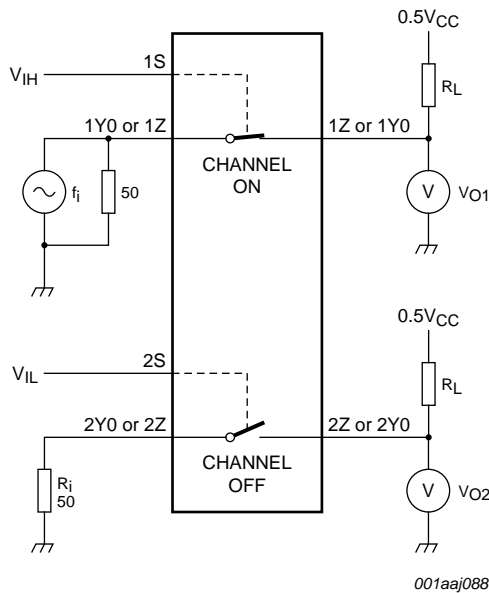


a. Test circuit



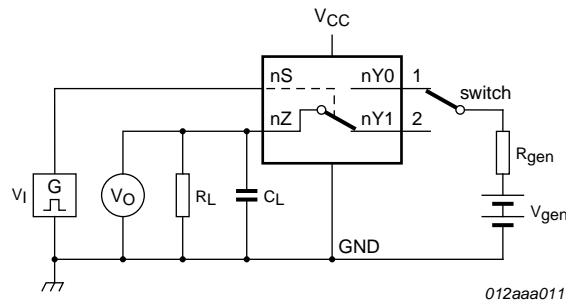
b. Input and output pulse definitions

Fig 21. Test circuit for measuring crosstalk voltage between digital inputs and switch

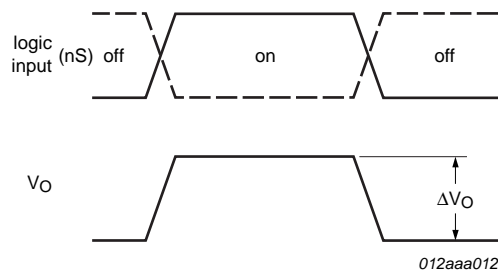


$$20 \log_{10} (V_{O2} / V_{O1}) \text{ or } 20 \log_{10} (V_{O1} / V_{O2}).$$

Fig 22. 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 23. Test circuit for measuring charge injection

13. Package outline

XQFN10: plastic, extremely thin quad flat package; no leads; 10 terminals; body 1.55 x 2.00 x 0.50 mm

SOT1049-3

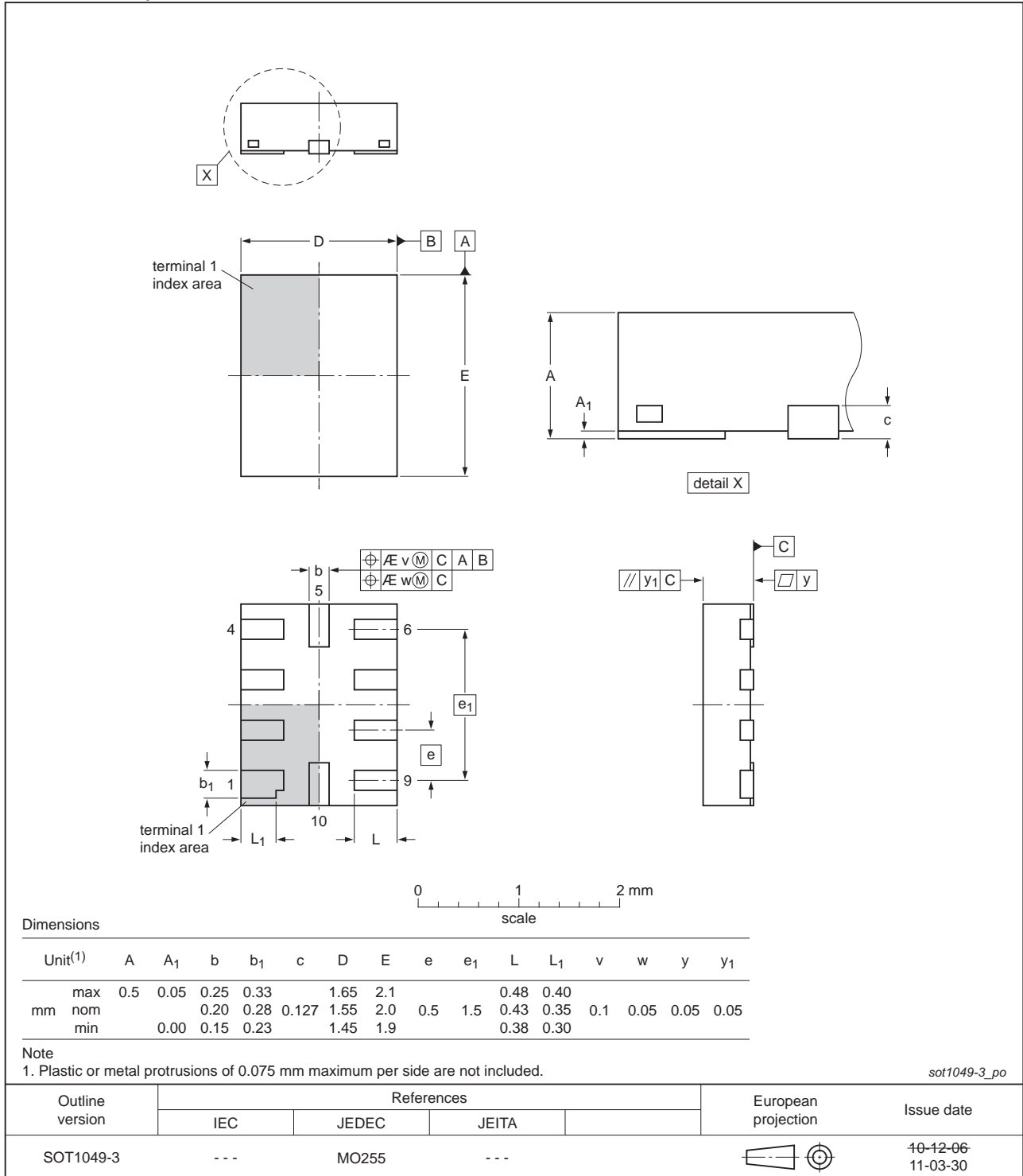


Fig 24. Package outline SOT1049-3 (XQFN10)

XQFN10: plastic, extremely thin quad flat package; no leads; 10 terminals; body 1.40 x 1.80 x 0.50 mm

SOT1160-1

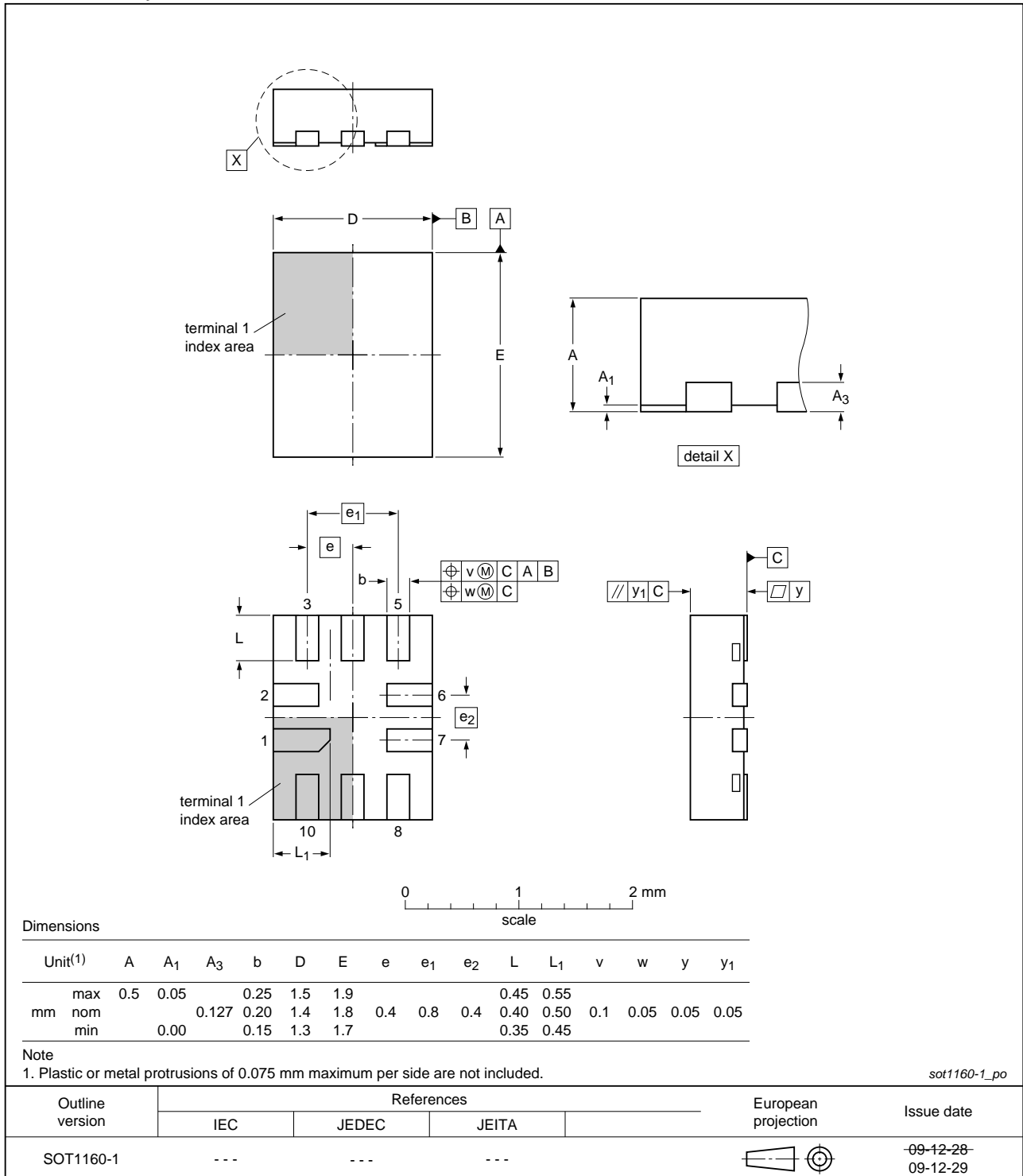


Fig 25. Package outline SOT1160-1 (XQFN10)

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 |
| MIL | Military |

15. Revision history

Table 14. Revision history

| Document ID | Release date | Data sheet status | Change notice | Supersedes |
|-------------------|--------------|--------------------|---------------|------------|
| NX3L2267_Q100 v.1 | 20120807 | Product data sheet | - | - |

16. Legal information

16.1 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 URL <http://www.nxp.com>.

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