

# NX3L2467

## Dual low-ohmic double-pole double-throw analog switch

Rev. 5.1 — 18 May 2021

Product data sheet

## 1 General description

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The NX3L2467 is a dual low-ohmic double-pole double-throw analog switch suitable for use as an analog or digital multiplexer/demultiplexer. It consists of four switches, each with two independent input/outputs ( $nY0$  and  $nY1$ ) and a common input/output ( $nZ$ ). The two digital inputs (1S and 2S) are used to select the switch position. 1S is used in selecting the independent inputs/outputs switched to 1Z and 2Z, and 2S is used in selecting the independent inputs/outputs switched to 3Z and 4Z. 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 NX3L467 to switch 4.3 V signals with a 1.8 V digital controller, eliminating the need for logic level translation. The NX3L2467 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 ( $0.5 \Omega$ ) and flatness ( $0.13 \Omega$ ) ensures minimal attenuation and distortion of transmitted signals.

## 2 Features and benefits

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- Wide supply voltage range from 1.4 V to 4.3 V
- Very low ON resistance (peak):
  - 1.7  $\Omega$  (typical) at  $V_{CC} = 1.4$  V
  - 1.0  $\Omega$  (typical) at  $V_{CC} = 1.65$  V
  - 0.6  $\Omega$  (typical) at  $V_{CC} = 2.3$  V
  - 0.5  $\Omega$  (typical) at  $V_{CC} = 2.7$  V
  - 0.5  $\Omega$  (typical) at  $V_{CC} = 4.3$  V
- Break-before-make switching
- High noise immunity
- ESD protection:
  - HBM JESD22-A114F Class 3A exceeds 4000 V
  - MM JESD22-A115-A exceeds 200 V
  - CDM AEC-Q100-011 revision B exceeds 1000 V
  - IEC61000-4-2 contact discharge exceeds 6000 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  $V_{CC} = 3.6$  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)
- Specified from  $-40$  °C to  $+85$  °C and from  $-40$  °C to  $+125$  °C



### 3 Applications

- Cell phone
- PDA
- Portable media player

### 4 Ordering information

Table 1. Ordering information

Type number	Topside mark	Package		
		Name	Description	Version
NX3L2467PW	X3L2467	TSSOP16	plastic thin shrink small outline package; 16 leads; body width 4.4 mm	SOT403-1
NX3L2467HR	D67	HXQFN16	plastic thermal enhanced extremely thin quad flat package; no leads; 16 terminals; body 3 × 3 × 0.5 mm	SOT1039-2
NX3L2467GU	D67	XQFN16	plastic, extremely thin quad flat package; no leads; 16 terminals; body 1.80 × 2.60 × 0.50 mm	SOT1161-1

#### 4.1 Ordering options

Table 2. Ordering options

Type number	Orderable part number	Package	Packing method	Minimum order quantity	Temperature
NX3L2467PW	NX3L2467PW,118	TSSOP16	Reel 13" Q1/T1 NDP	2500	T <sub>amb</sub> = -40 °C to +125 °C
NX3L2467HR	NX3L2467HRZ	HXQFN16	Reel 7" Q1/T1 NDP SSB <sup>[1]</sup>	1500	T <sub>amb</sub> = -40 °C to +125 °C
	NX3L2467HR,115 <sup>[2]</sup>	HXQFN16	Reel 7" Q1/T1 NDP	1500	T <sub>amb</sub> = -40 °C to +125 °C
NX3L2467GU	NX3L2467GU,115	XQFN16	Reel 7" Q1/T1 NDP	4000	T <sub>amb</sub> = -40 °C to +125 °C

[1] This packing method uses a Static Shielding Bag (SSB) solution. Material is to be kept in the sealed bag between uses.

[2] Will go EOL - migrate to new leadframe NX3L2467HRZ orderable part number.

## 5 Functional diagram

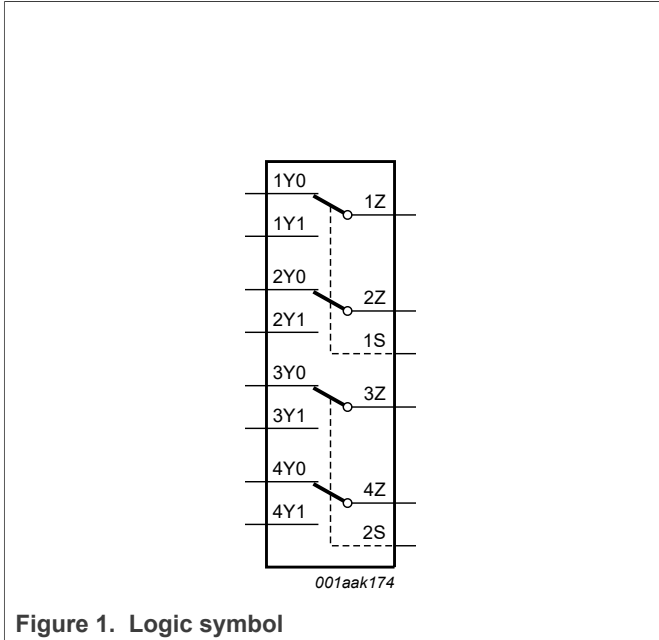


Figure 1. Logic symbol

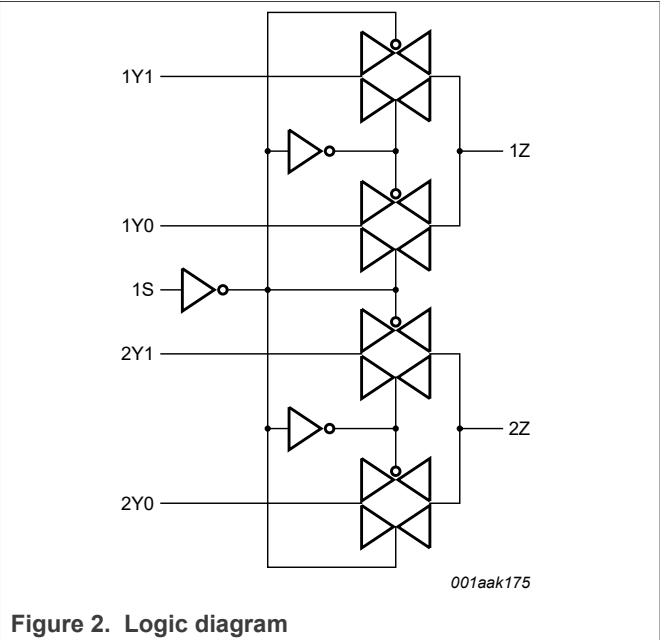


Figure 2. Logic diagram

## 6 Pinning information

### 6.1 Pinning

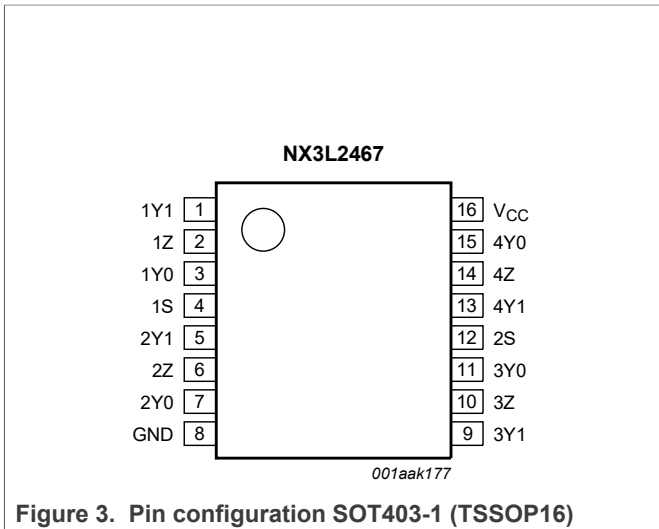


Figure 3. Pin configuration SOT403-1 (TSSOP16)

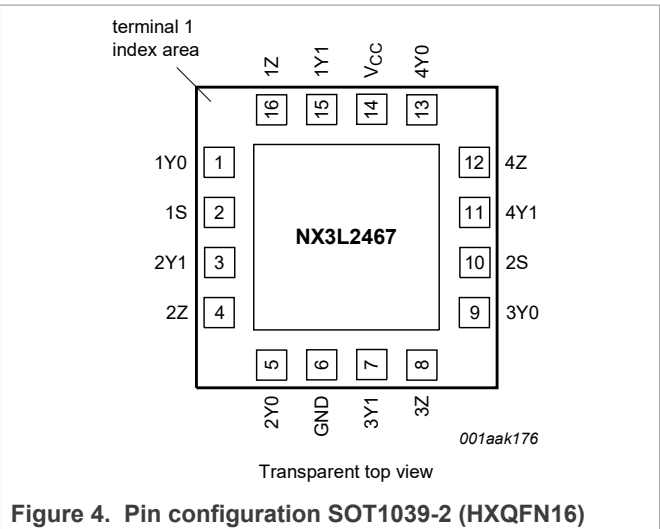


Figure 4. Pin configuration SOT1039-2 (HXQFN16)

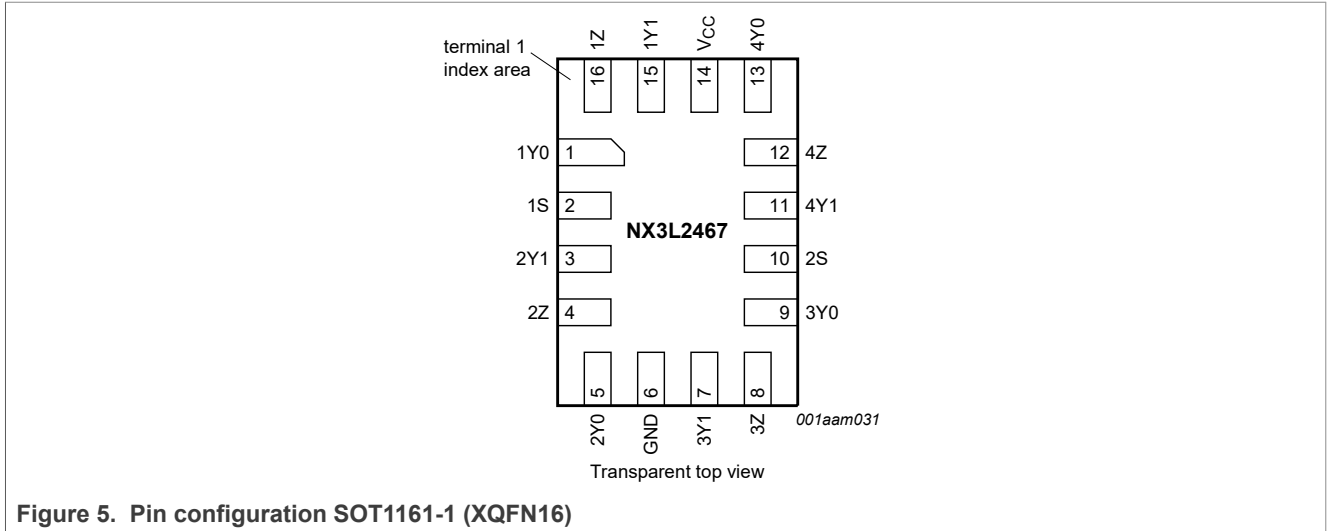


Figure 5. Pin configuration SOT1161-1 (XQFN16)

### 6.2 Pin description

Table 3. Pin description

Symbol	Pin		Description
	SOT1039-2 and SOT1161-1	SOT403-1	
1Y0, 2Y0, 3Y0, 4Y0	1, 5, 9, 13	3, 7, 11, 15	independent input or output
1S, 2S	2, 10	4, 12	select input
1Y1, 2Y1, 3Y1, 4Y1	15, 3, 7, 11	1, 5, 9, 13	independent input or output
1Z, 2Z, 3Z, 4Z	16, 4, 8, 12	2, 6, 10, 14	common output or input
GND	6	8	ground (0 V)
V <sub>CC</sub>	14	16	supply voltage

## 7 Functional description

Table 4. Function table<sup>[1]</sup>

Input nS	Channel on
L	nY0
H	nY1

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

## 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 <sub>CC</sub>	supply voltage		-0.5	+4.6	V
V <sub>I</sub>	input voltage	select input nS	<sup>[1]</sup> -0.5	+4.6	V
V <sub>SW</sub>	switch voltage		<sup>[2]</sup> -0.5	V <sub>CC</sub> + 0.5	V

**Table 5. Limiting values...continued**

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

Symbol	Parameter	Conditions	Min	Max	Unit	
$I_{IK}$	input clamping current	$V_I < -0.5\text{ V}$	-50	-	mA	
$I_{SK}$	switch clamping current	$V_I < -0.5\text{ V}$ or $V_I > V_{CC} + 0.5\text{ V}$	-	$\pm 50$	mA	
$I_{SW}$	switch current	$V_{SW} > -0.5\text{ V}$ or $V_{SW} < V_{CC} + 0.5\text{ V}$ ; source or sink current	-	$\pm 350$	mA	
		$V_{SW} > -0.5\text{ V}$ or $V_{SW} < V_{CC} + 0.5\text{ V}$ ; pulsed at 1 ms duration, < 10 % duty cycle; peak current	-	$\pm 500$	mA	
$T_{stg}$	storage temperature		-65	+150	°C	
$P_{tot}$	total power dissipation	$T_{amb} = -40\text{ °C}$ to $+125\text{ °C}$				
		TSSOP16	[3]	-	500	mW
		HXQFN16	[4]	-	250	mW
		XQFN16	[5]	-	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 TSSOP16 package: above 60 °C the value of  $P_{tot}$  derates linearly with 5.5 mW/K above.
- [4] For HXQFN16 package: above 135 °C the value of  $P_{tot}$  derates linearly with 16.9 mW/K.
- [5] For XQFN16 package: above 133 °C the value of  $P_{tot}$  derates linearly with 14.5 mW/K.

## 9 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		[1] 0	$V_{CC}$	V
$T_{amb}$	ambient temperature		-40	+125	°C
$\Delta t/\Delta V$	input transition rise and fall rate	$V_{CC} = 1.4\text{ V}$ to $4.3\text{ V}$	[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 will flow from terminal nYn. In this case, there is no limit for the voltage drop across the switch.
- [2] Applies to control signal levels.

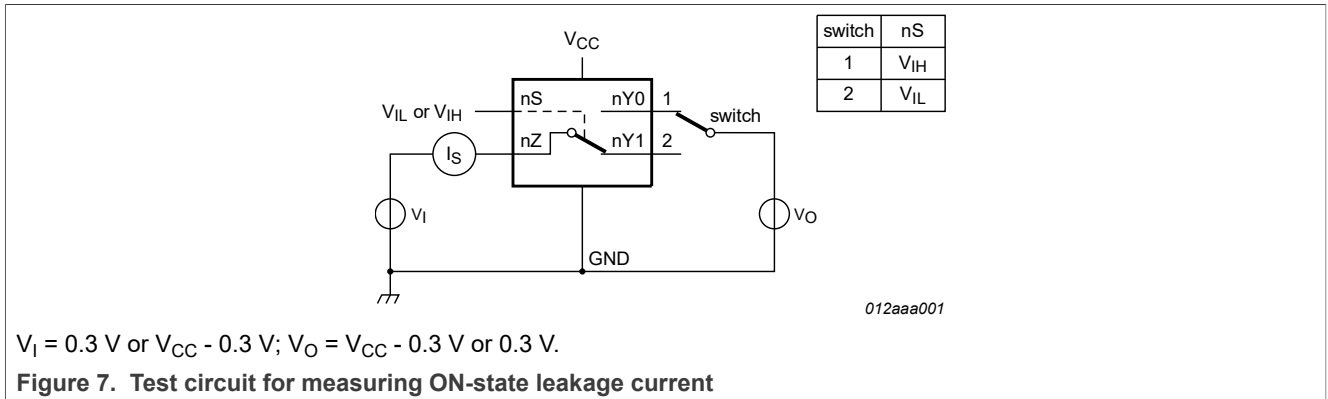
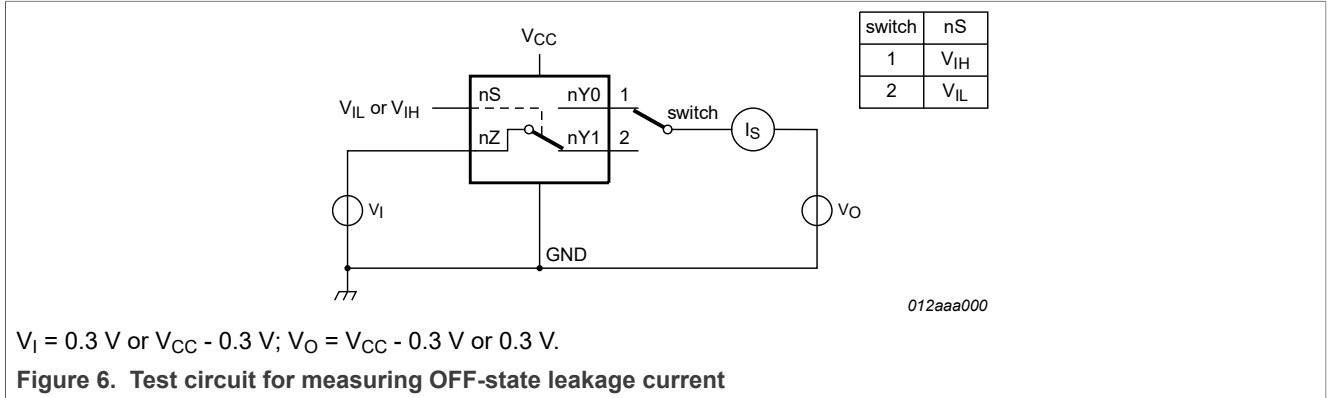
## 10 Static characteristics

**Table 7. Static characteristics**

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

Symbol	Parameter	Conditions	T <sub>amb</sub> = 25 °C			T <sub>amb</sub> = -40 °C to +125 °C			Unit
			Min	Typ	Max	Min	Max (85 °C)	Max (125 °C)	
V <sub>IH</sub>	HIGH-level input voltage	V <sub>CC</sub> = 1.4 V to 1.6 V	0.9	-	-	0.9	-	-	V
		V <sub>CC</sub> = 1.65 V to 1.95 V	0.9	-	-	0.9	-	-	V
		V <sub>CC</sub> = 2.3 V to 2.7 V	1.1	-	-	1.1	-	-	V
		V <sub>CC</sub> = 2.7 V to 3.6 V	1.3	-	-	1.3	-	-	V
		V <sub>CC</sub> = 3.6 V to 4.3 V	1.4	-	-	1.4	-	-	V
V <sub>IL</sub>	LOW-level input voltage	V <sub>CC</sub> = 1.4 V to 1.6 V	-	-	0.3	-	0.3	0.3	V
		V <sub>CC</sub> = 1.65 V to 1.95 V	-	-	0.4	-	0.4	0.3	V
		V <sub>CC</sub> = 2.3 V to 2.7 V	-	-	0.4	-	0.4	0.4	V
		V <sub>CC</sub> = 2.7 V to 3.6 V	-	-	0.5	-	0.5	0.5	V
		V <sub>CC</sub> = 3.6 V to 4.3 V	-	-	0.6	-	0.6	0.6	V
I <sub>I</sub>	input leakage current	select input nS; V <sub>I</sub> = GND to 4.3 V; V <sub>CC</sub> = 1.4 V to 4.3 V	-	-	-	-	±0.5	±1	µA
I <sub>S(OFF)</sub>	OFF-state leakage current	nY0 and nY1 port; see <a href="#">Figure 6</a>							
		V <sub>CC</sub> = 1.4 V to 3.6 V	-	-	±5	-	±50	±500	nA
		V <sub>CC</sub> = 3.6 V to 4.3 V	-	-	±10	-	±50	±500	nA
I <sub>S(ON)</sub>	ON-state leakage current	nZ port; V <sub>CC</sub> = 1.4 V to 3.6 V; see <a href="#">Figure 7</a>							
		V <sub>CC</sub> = 1.4 V to 3.6 V	-	-	±5	-	±50	±500	nA
		V <sub>CC</sub> = 3.6 V to 4.3 V	-	-	±10	-	±50	±500	nA
I <sub>CC</sub>	supply current	V <sub>I</sub> = V <sub>CC</sub> or GND; V <sub>SW</sub> = GND or V <sub>CC</sub>							
		V <sub>CC</sub> = 3.6 V	-	-	100	-	500	5000	nA
		V <sub>CC</sub> = 4.3 V	-	-	150	-	800	6000	nA
ΔI <sub>CC</sub>	additional supply current	V <sub>SW</sub> = GND or V <sub>CC</sub>							
		V <sub>I</sub> = 2.6 V; V <sub>CC</sub> = 4.3 V	-	2.0	4.0	-	7	7	µA
		V <sub>I</sub> = 2.6 V; V <sub>CC</sub> = 3.6 V	-	0.35	0.7	-	1	1	µA
		V <sub>I</sub> = 1.8 V; V <sub>CC</sub> = 4.3 V	-	7.0	10.0	-	15	15	µA
		V <sub>I</sub> = 1.8 V; V <sub>CC</sub> = 3.6 V	-	2.5	4.0	-	5	5	µA
		V <sub>I</sub> = 1.8 V; V <sub>CC</sub> = 2.5 V	-	50	200	-	300	500	nA
C <sub>I</sub>	input capacitance		-	1.0	-	-	-	-	pF
C <sub>S(OFF)</sub>	OFF-state capacitance		-	35	-	-	-	-	pF
C <sub>S(ON)</sub>	ON-state capacitance		-	130	-	-	-	-	pF

10.1 Test circuits



10.2 ON resistance

Table 8. ON resistance [1]

At recommended operating conditions; voltages are referenced to GND (ground = 0 V); for graphs see Figure 9 to Figure 15.

Symbol	Parameter	Conditions	T <sub>amb</sub> = -40 °C to +85 °C			T <sub>amb</sub> = -40 °C to +125 °C		Unit	
			Min	Typ [2]	Max	Min	Max		
R <sub>ON(peak)</sub>	ON resistance (peak)	V <sub>I</sub> = GND to V <sub>CC</sub> ; I <sub>SW</sub> = 100 mA; see Figure 8							
			V <sub>CC</sub> = 1.4 V	-	1.7	3.7	-	4.1	Ω
			V <sub>CC</sub> = 1.65 V	-	1.0	1.6	-	1.7	Ω
			V <sub>CC</sub> = 2.3 V	-	0.6	0.8	-	0.9	Ω
			V <sub>CC</sub> = 2.7 V	-	0.5	0.75	-	0.9	Ω
		V <sub>CC</sub> = 4.3 V	-	0.5	0.75	-	0.9	Ω	
ΔR <sub>ON</sub>	ON resistance mismatch between channels	V <sub>I</sub> = GND to V <sub>CC</sub> ; I <sub>SW</sub> = 100 mA [3]							
			V <sub>CC</sub> = 1.4 V; V <sub>SW</sub> = 0.4 V	-	0.18	0.3	-	0.3	Ω
			V <sub>CC</sub> = 1.65 V; V <sub>SW</sub> = 0.5 V	-	0.18	0.2	-	0.3	Ω
			V <sub>CC</sub> = 2.3 V; V <sub>SW</sub> = 0.7 V	-	0.07	0.1	-	0.13	Ω
			V <sub>CC</sub> = 2.7 V; V <sub>SW</sub> = 0.8 V	-	0.07	0.1	-	0.13	Ω
		V <sub>CC</sub> = 4.3 V; V <sub>SW</sub> = 0.8 V	-	0.07	0.1	-	0.13	Ω	

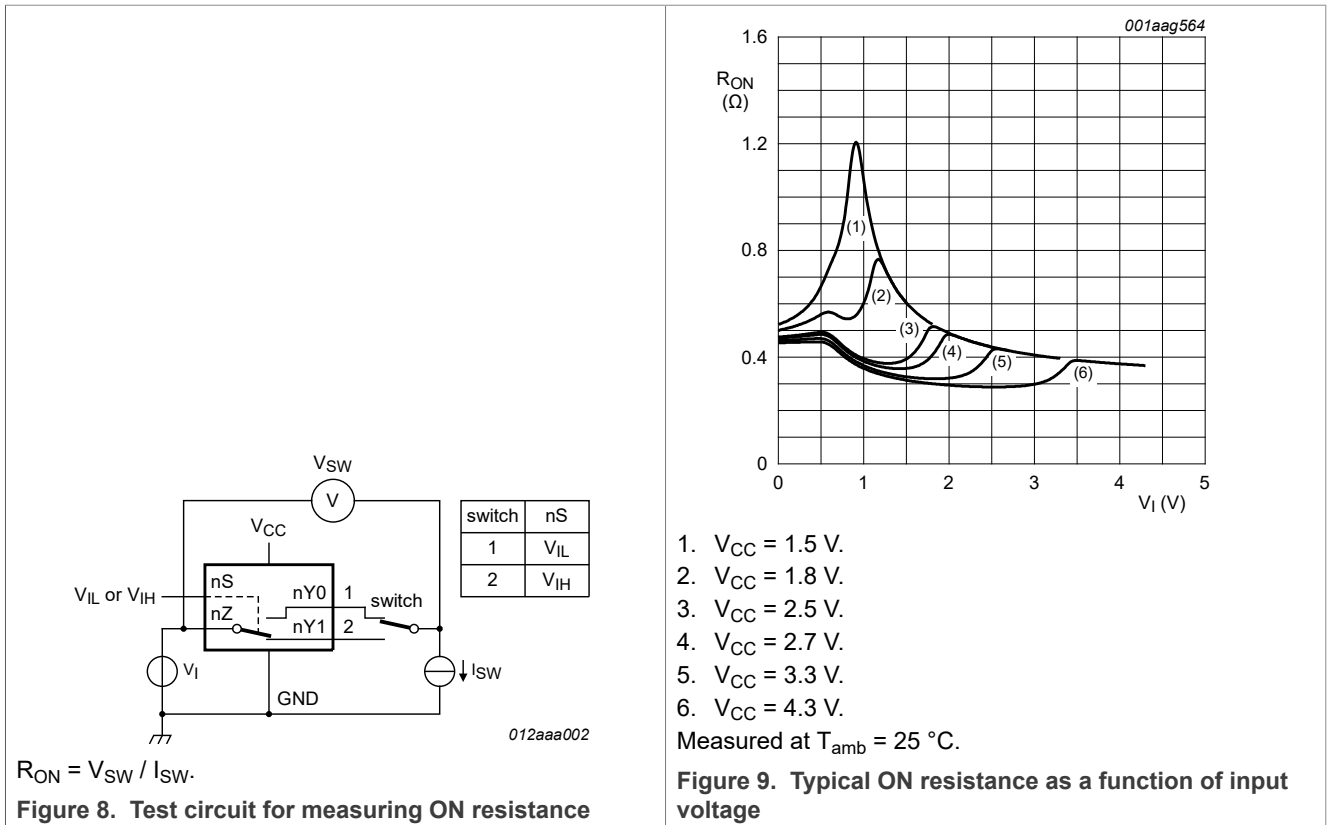
Table 8. ON resistance [1] ...continued

At recommended operating conditions; voltages are referenced to GND (ground = 0 V); for graphs see Figure 9 to Figure 15.

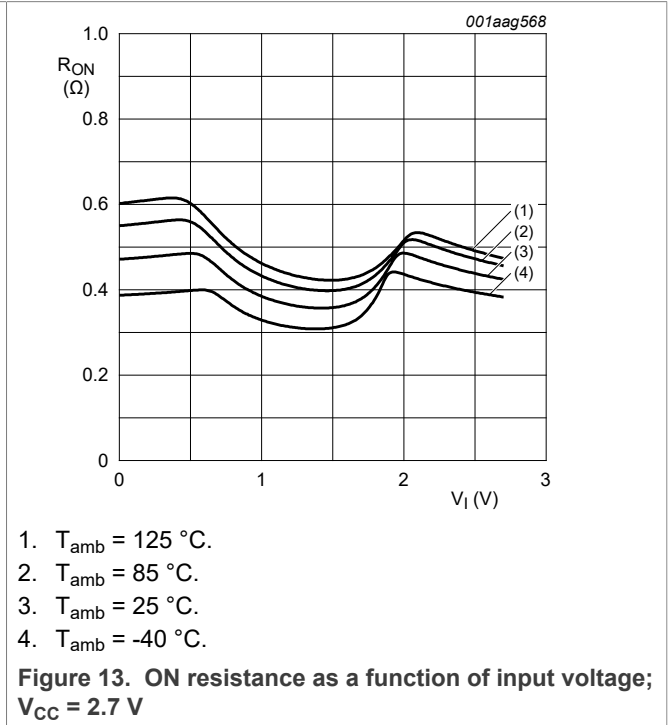
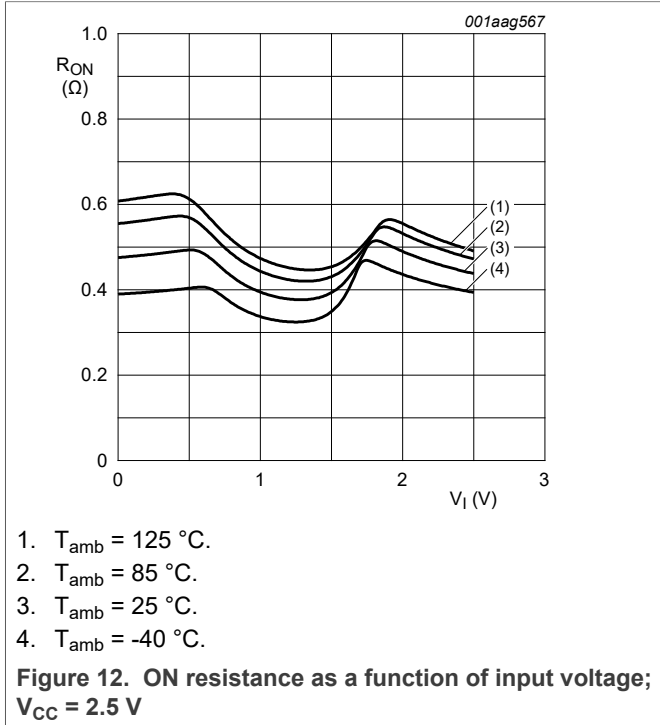
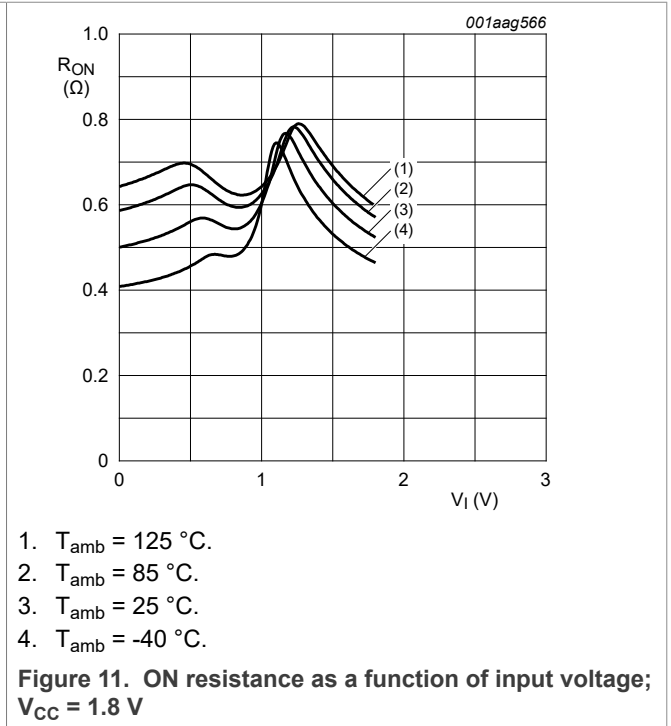
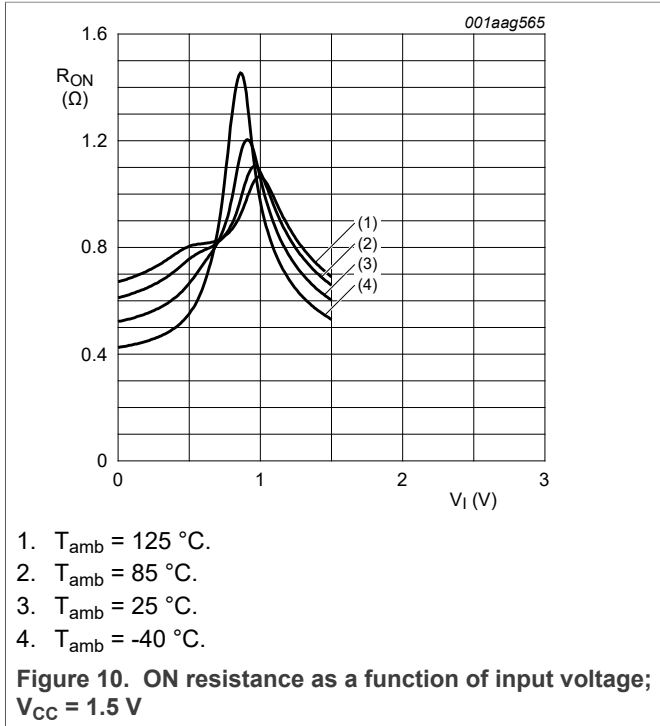
Symbol	Parameter	Conditions	T <sub>amb</sub> = -40 °C to +85 °C			T <sub>amb</sub> = -40 °C to +125 °C		Unit
			Min	Typ [2]	Max	Min	Max	
R <sub>ON(flat)</sub>	ON resistance (flatness)	V <sub>I</sub> = GND to V <sub>CC</sub> ; I <sub>SW</sub> = 100 mA [4]						
		V <sub>CC</sub> = 1.4 V	-	1.0	3.3	-	3.6	Ω
		V <sub>CC</sub> = 1.65 V	-	0.5	1.2	-	1.3	Ω
		V <sub>CC</sub> = 2.3 V	-	0.15	0.3	-	0.35	Ω
		V <sub>CC</sub> = 2.7 V	-	0.13	0.3	-	0.35	Ω
		V <sub>CC</sub> = 4.3 V	-	0.2	0.4	-	0.45	Ω

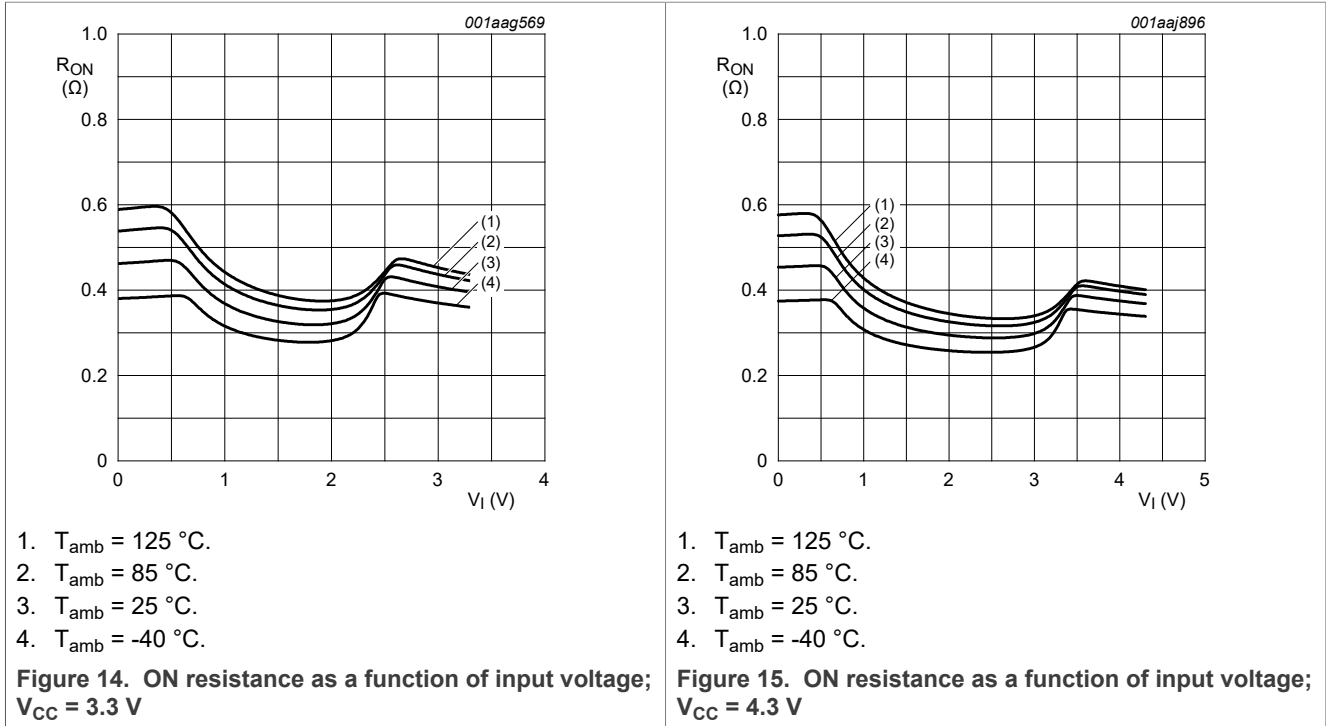
- [1] For NX3L2467PW (TSSOP16 package), all ON resistance values are up to 0.05 Ω higher.
- [2] Typical values are measured at T<sub>amb</sub> = 25 °C.
- [3] Measured at identical V<sub>CC</sub>, temperature and input voltage.
- [4] Flatness is defined as the difference between the maximum and minimum value of ON resistance measured at identical V<sub>CC</sub> and temperature.

### 10.3 ON resistance test circuit and graphs









## 11 Dynamic characteristics

**Table 9. Dynamic characteristics**

At recommended operating conditions; voltages are referenced to GND (ground = 0 V); for load circuit see [Figure 18](#).

Symbol	Parameter	Conditions	T <sub>amb</sub> = 25 °C			T <sub>amb</sub> = -40 °C to +125 °C			Unit
			Min	Typ <sup>[1]</sup>	Max	Min	Max (85 °C)	Max (125 °C)	
t <sub>en</sub>	enable time	nS to nZ or nYn; see <a href="#">Figure 16</a>							
		V <sub>CC</sub> = 1.4 V to 1.6 V	-	41	90	-	120	120	ns
		V <sub>CC</sub> = 1.65 V to 1.95 V	-	30	70	-	80	90	ns
		V <sub>CC</sub> = 2.3 V to 2.7 V	-	20	45	-	50	55	ns
		V <sub>CC</sub> = 2.7 V to 3.6 V	-	19	40	-	45	50	ns
		V <sub>CC</sub> = 3.6 V to 4.3 V	-	19	40	-	45	50	ns
t <sub>dis</sub>	disable time	nS to nZ or nYn; see <a href="#">Figure 16</a>							
		V <sub>CC</sub> = 1.4 V to 1.6 V	-	24	70	-	80	90	ns
		V <sub>CC</sub> = 1.65 V to 1.95 V	-	15	55	-	60	65	ns
		V <sub>CC</sub> = 2.3 V to 2.7 V	-	9	25	-	30	35	ns
		V <sub>CC</sub> = 2.7 V to 3.6 V	-	8	20	-	25	30	ns
		V <sub>CC</sub> = 3.6 V to 4.3 V	-	8	20	-	25	30	ns

**Table 9. Dynamic characteristics...continued**

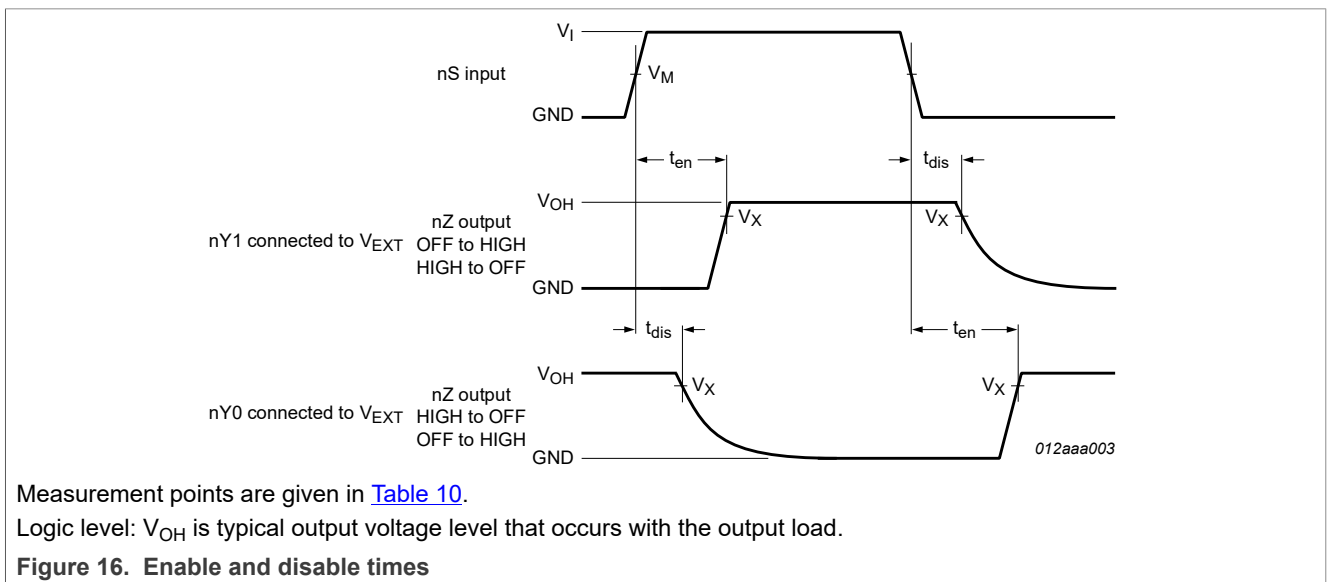
At recommended operating conditions; voltages are referenced to GND (ground = 0 V); for load circuit see [Figure 18](#).

Symbol	Parameter	Conditions	T <sub>amb</sub> = 25 °C			T <sub>amb</sub> = -40 °C to +125 °C			Unit
			Min	Typ <sup>[1]</sup>	Max	Min	Max (85 °C)	Max (125 °C)	
t <sub>b-m</sub>	break-before-make time	see <a href="#">Figure 17</a>	[2]						
		V <sub>CC</sub> = 1.4 V to 1.6 V	-	20	-	9	-	-	ns
		V <sub>CC</sub> = 1.65 V to 1.95 V	-	17	-	7	-	-	ns
		V <sub>CC</sub> = 2.3 V to 2.7 V	-	13	-	4	-	-	ns
		V <sub>CC</sub> = 2.7 V to 3.6 V	-	11	-	3	-	-	ns
		V <sub>CC</sub> = 3.6 V to 4.3 V	-	11	-	2	-	-	ns

[1] Typical values are measured at T<sub>amb</sub> = 25 °C and V<sub>CC</sub> = 1.5 V, 1.8 V, 2.5 V, 3.3 V and 4.3 V respectively.

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

### 11.1 Waveform and test circuits



**Table 10. Measurement points**

Supply voltage	Input	Output
V <sub>CC</sub>	V <sub>M</sub>	V <sub>X</sub>
1.4 V to 4.3 V	0.5V <sub>CC</sub>	0.9V <sub>OH</sub>

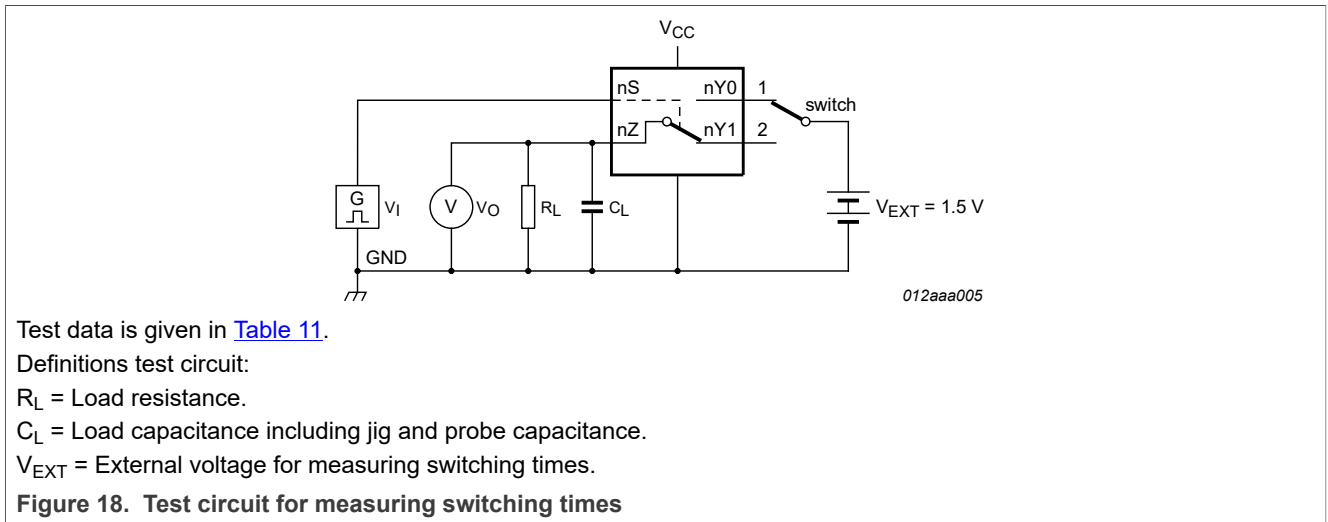
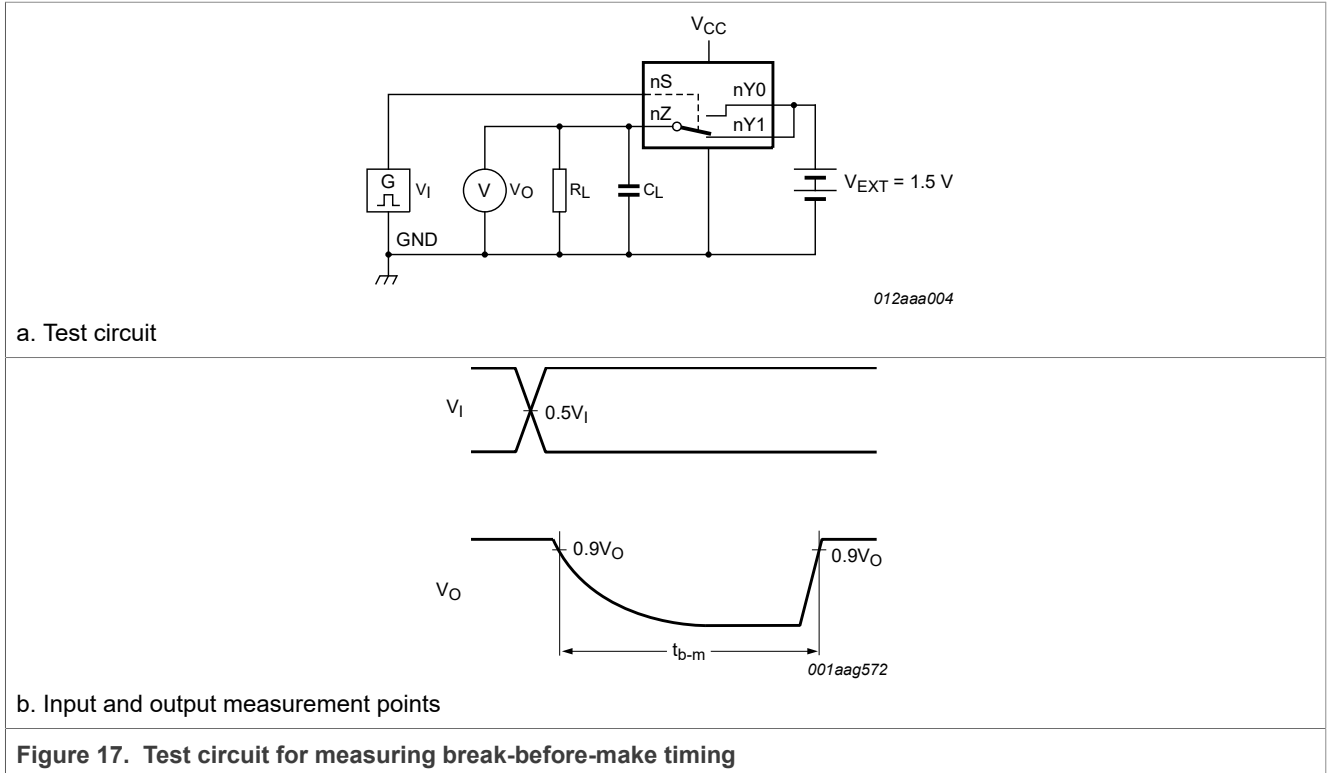


Table 11. Test data

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

**11.2 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;  $T_{amb} = 25$  °C.

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
THD	total harmonic distortion	$f_i = 20$ Hz to 20 kHz; $R_L = 32$ $\Omega$ ; see <a href="#">Figure 19</a>	[1]				
		$V_{CC} = 1.4$ V; $V_I = 1$ V (p-p)		-	0.15	-	%
		$V_{CC} = 1.65$ V; $V_I = 1.2$ V (p-p)		-	0.10	-	%
		$V_{CC} = 2.3$ V; $V_I = 1.5$ V (p-p)		-	0.02	-	%
		$V_{CC} = 2.7$ V; $V_I = 2$ V (p-p)		-	0.02	-	%
		$V_{CC} = 4.3$ V; $V_I = 2$ V (p-p)		-	0.02	-	%
$f_{(-3dB)}$	-3 dB frequency response	$R_L = 50$ $\Omega$ ; see <a href="#">Figure 20</a>	[1]				
		$V_{CC} = 1.4$ V to 4.3 V		-	60	-	MHz
$\alpha_{iso}$	isolation (OFF-state)	$f_i = 100$ kHz; $R_L = 50$ $\Omega$ ; see <a href="#">Figure 21</a>	[1]				
		$V_{CC} = 1.4$ V to 4.3 V		-	-90	-	dB
$V_{ct}$	crosstalk voltage	between digital inputs and switch; $f_i = 1$ MHz; $C_L = 50$ pF; $R_L = 50$ $\Omega$ ; see <a href="#">Figure 22</a>					
		$V_{CC} = 1.4$ V to 3.6 V		-	0.2	-	V
		$V_{CC} = 3.6$ V to 4.3 V		-	0.3	-	V
Xtalk	crosstalk	between switches; $f_i = 100$ kHz; $R_L = 50$ $\Omega$ ; see <a href="#">Figure 23</a>	[1]				
		$V_{CC} = 1.4$ V to 4.3 V		-	-90	-	dB
$Q_{inj}$	charge injection	$f_i = 1$ MHz; $C_L = 0.1$ nF; $R_L = 1$ M $\Omega$ ; $V_{gen} = 0$ V; $R_{gen} = 0$ $\Omega$ ; see <a href="#">Figure 24</a>					
		$V_{CC} = 1.5$ V		-	3	-	pC
		$V_{CC} = 1.8$ V		-	4	-	pC
		$V_{CC} = 2.5$ V		-	6	-	pC
		$V_{CC} = 3.3$ V		-	9	-	pC
		$V_{CC} = 4.3$ V		-	15	-	pC

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

11.3 Test circuits

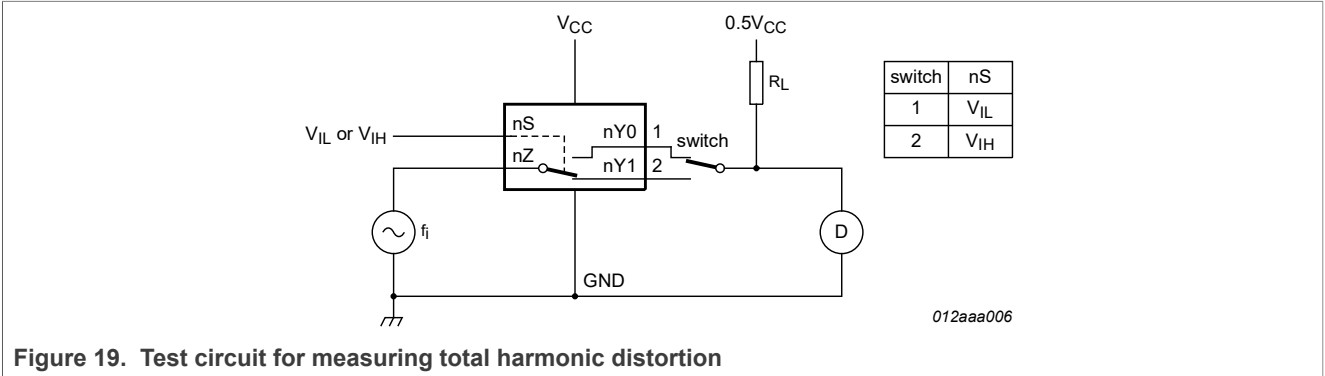


Figure 19. Test circuit for measuring total harmonic distortion

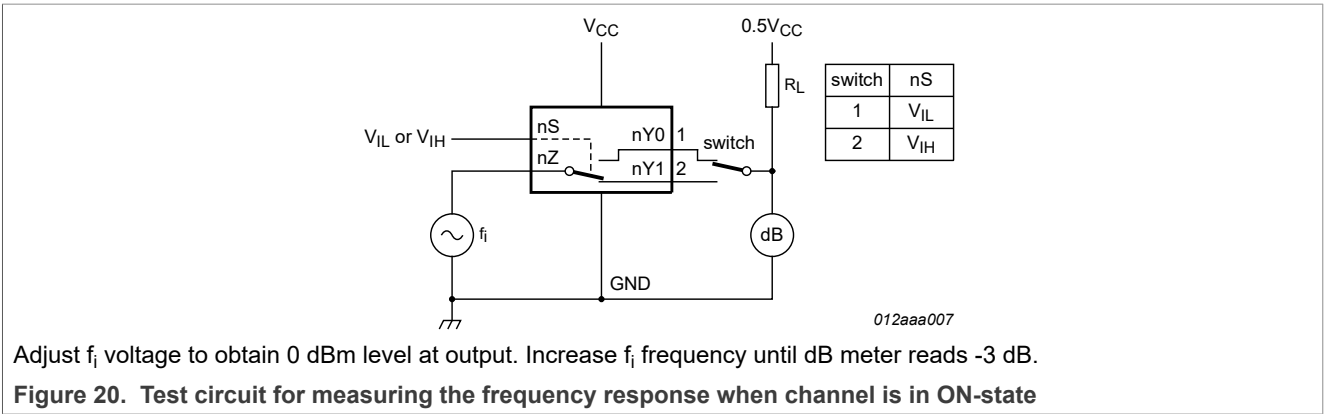


Figure 20. Test circuit for measuring the frequency response when channel is in ON-state

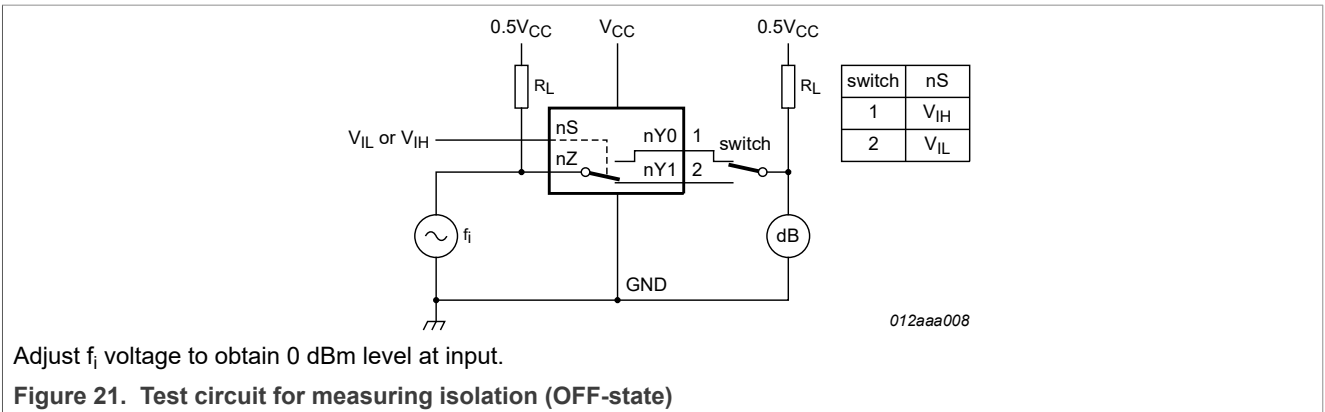
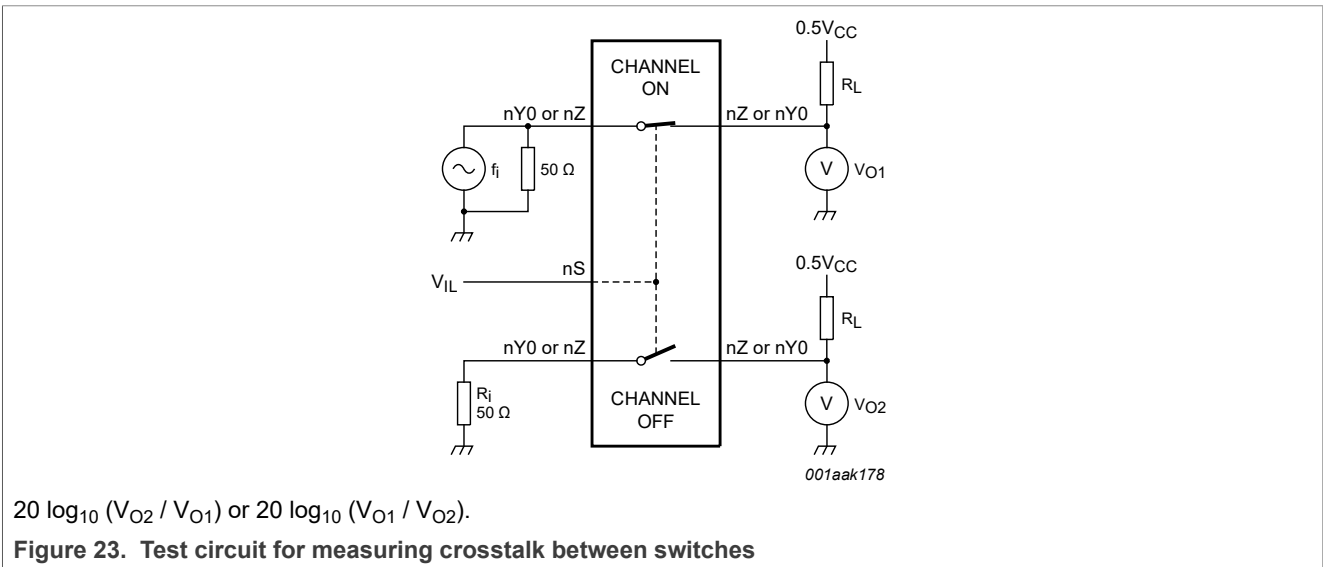
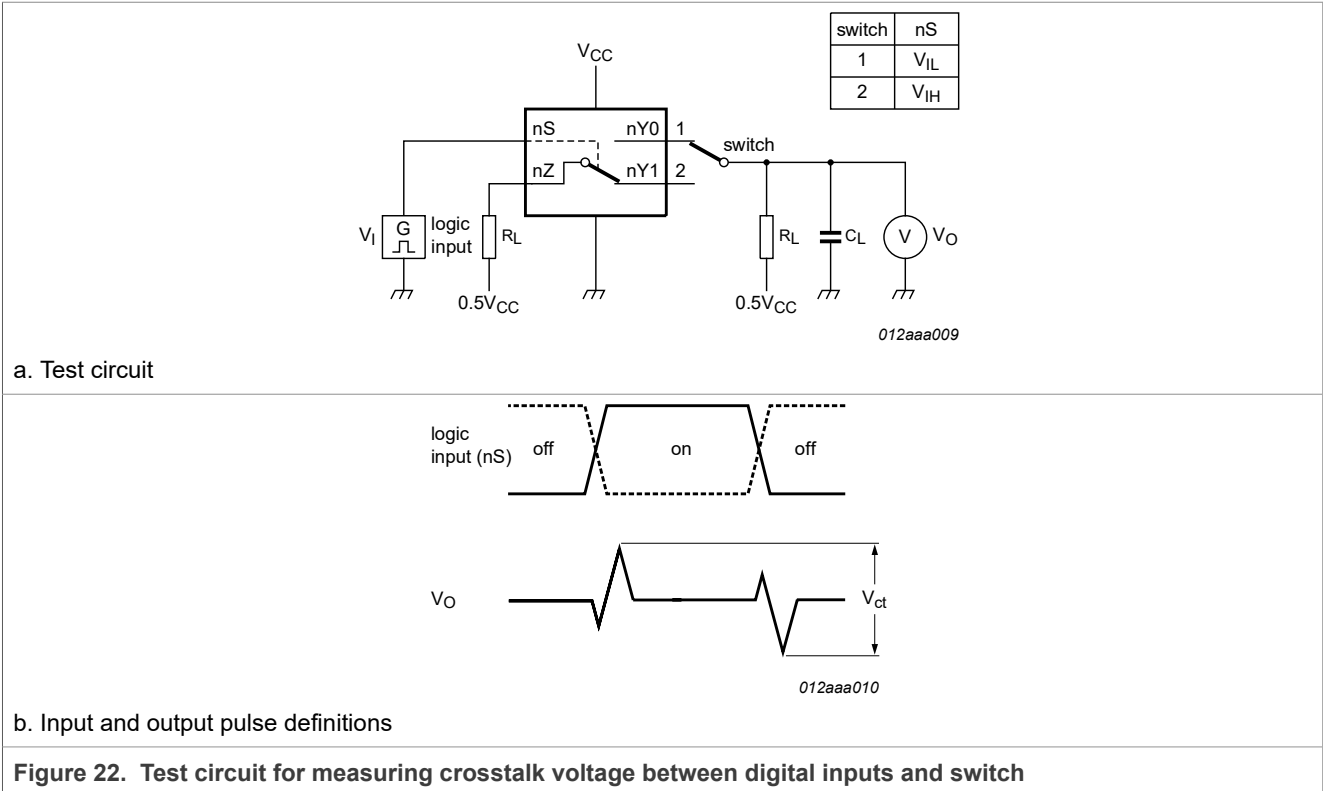
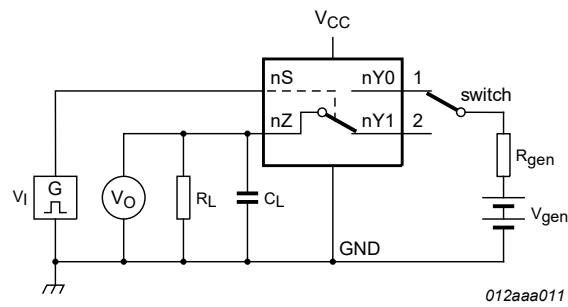
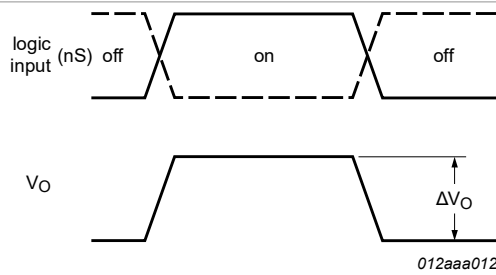


Figure 21. Test circuit for measuring isolation (OFF-state)





a. Test circuit



b. Input and output pulse definitions

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

$\Delta V_O$  = output voltage variation.

$R_{gen}$  = generator resistance.

$V_{gen}$  = generator voltage.

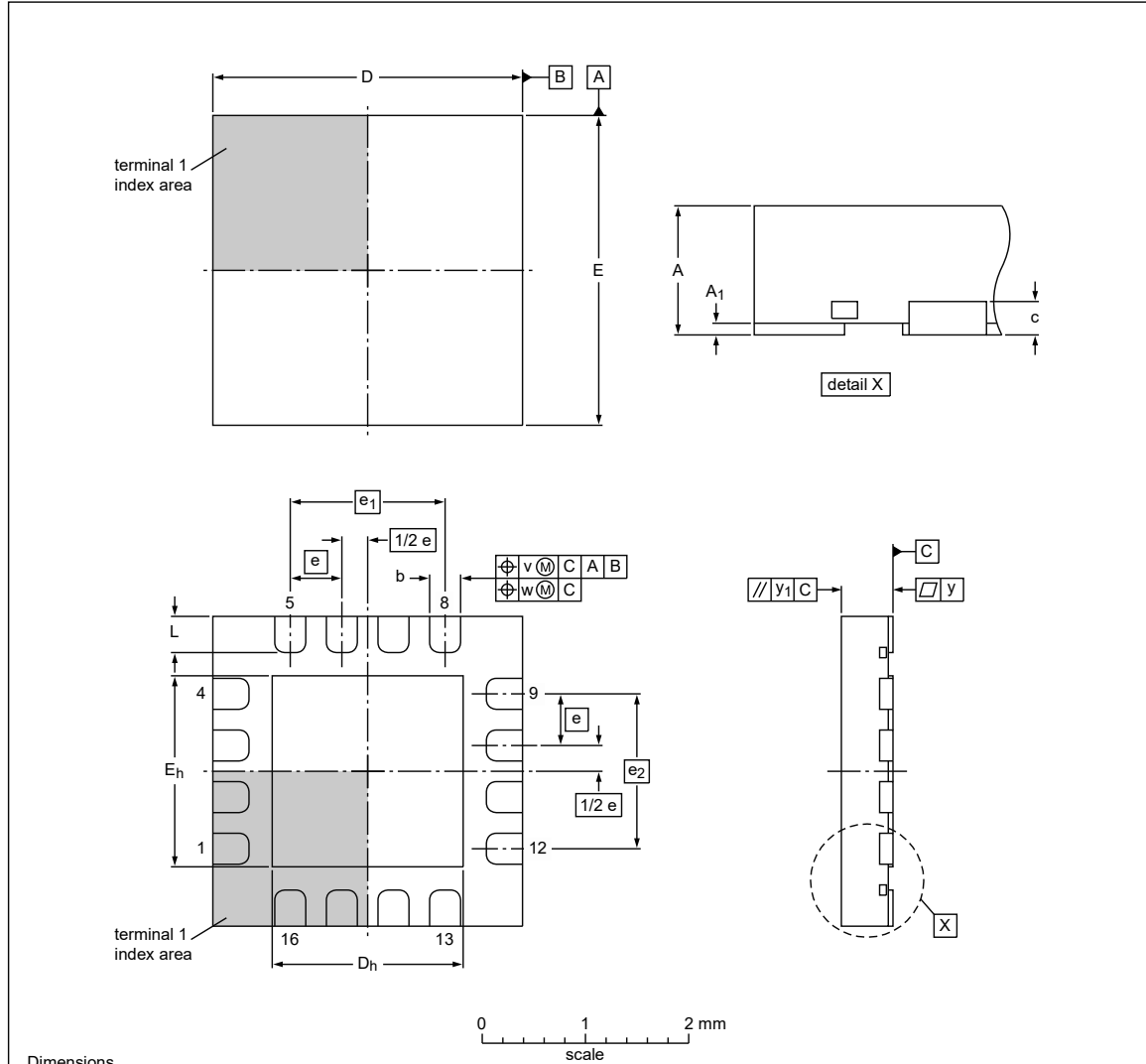
Figure 24. Test circuit for measuring charge injection



12 Package outline

HXQFN16 (U): plastic thermal enhanced extremely thin quad flat package; no leads; 16 terminals; body 3 x 3 x 0.5 mm

SOT1039-2



Dimensions

Unit	A	A <sub>1</sub>	b	c	D	D <sub>h</sub>	E	E <sub>h</sub>	e	e <sub>1</sub>	e <sub>2</sub>	L	v	w	y	y <sub>1</sub>
max	0.5	0.05	0.35		3.1	1.95	3.1	1.95				0.40				
mm nom			0.30	0.127	3.0	1.85	3.0	1.85	0.5	1.5	1.5	0.35	0.1	0.05	0.05	0.1
min		0.00	0.25		2.9	1.75	2.9	1.75				0.30				

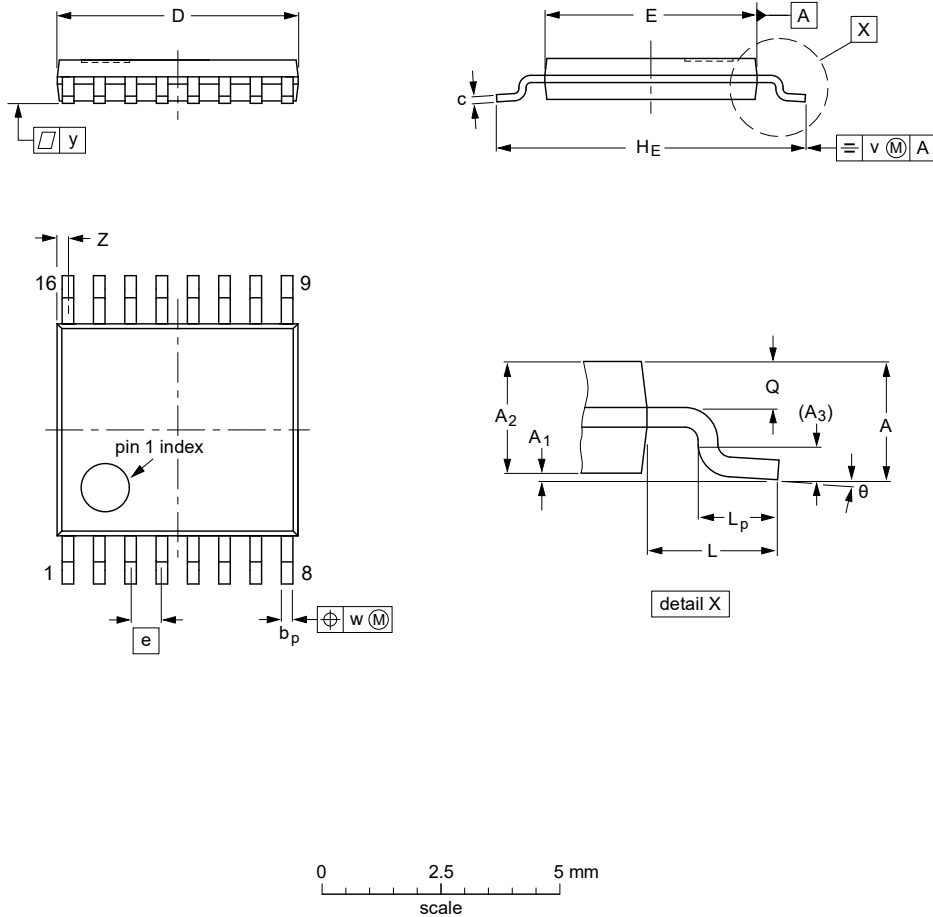
sot1039-2\_po

Outline version	References			European projection	Issue date
	IEC	JEDEC	JEITA		
SOT1039-2	---	---	---		<del>11-03-30</del> 17-10-31

Figure 25. Package outline SOT1039-2 (HXQFN16)

TSSOP16: plastic thin shrink small outline package; 16 leads; body width 4.4 mm

SOT403-1



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

UNIT	A max.	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	b <sub>p</sub>	c	D <sup>(1)</sup>	E <sup>(2)</sup>	e	H <sub>E</sub>	L	L <sub>p</sub>	Q	v	w	y	Z <sup>(1)</sup>	θ
mm	1.1	0.15 0.05	0.95 0.80	0.25	0.30 0.19	0.2 0.1	5.1 4.9	4.5 4.3	0.65	6.6 6.2	1	0.75 0.50	0.4 0.3	0.2	0.13	0.1	0.40 0.06	8° 0°

**Notes**

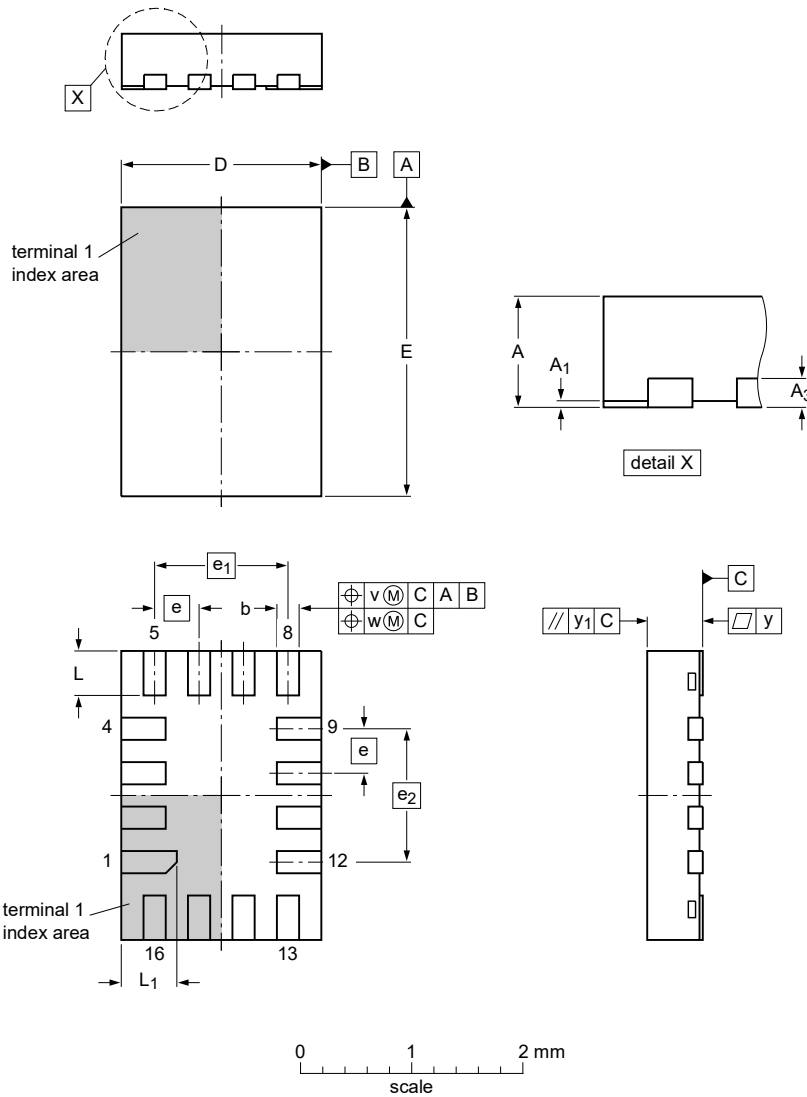
1. Plastic or metal protrusions of 0.15 mm maximum per side are not included.
2. Plastic interlead protrusions of 0.25 mm maximum per side are not included.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT403-1		MO-153				99-12-27 03-02-18

Figure 26. Package outline SOT403-1 (TSSOP16)

**XQFN16: plastic, extremely thin quad flat package; no leads;**  
**16 terminals; body 1.80 x 2.60 x 0.50 mm**

SOT1161-1



Dimensions

Unit <sup>(1)</sup>	A	A <sub>1</sub>	A <sub>3</sub>	b	D	E	e	e <sub>1</sub>	e <sub>2</sub>	L	L <sub>1</sub>	v	w	y	y <sub>1</sub>
max	0.5	0.05		0.25	1.9	2.7				0.45	0.55				
mm nom			0.127	0.20	1.8	2.6	0.4	1.2	1.2	0.40	0.50	0.1	0.05	0.05	0.05
min		0.00		0.15	1.7	2.5				0.35	0.45				

Note

1. Plastic or metal protrusions of 0.075 mm maximum per side are not included.

sot1161-1\_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT1161-1	---	---	---			09-12-28- 09-12-29

Figure 27. Package outline SOT1161-1 (XQFN16)

## 13 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

## 14 Revision history

Table 14. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
NX3L2467 v.5.1	20210518	Product data sheet	-	NX3L2467 v.5
Modifications:	• Updated <a href="#">Section 4 "Ordering information"</a>			
NX3L2467 v.5	20120702	Product data sheet	-	NX3L2467 v.4
NX3L2467 v.4	20111108	Product data sheet	-	NX3L2467 v.3
NX3L2467 v.3	20101229	Product data sheet	-	NX3L2467 v.2
NX3L2467 v.2	20100519	Product data sheet	-	NX3L2467 v.1
NX3L2467 v.1	20090623	Product data sheet	-	-

## 15 Legal information

### 15.1 Data sheet status

Document status <sup>[1][2]</sup>	Product status <sup>[3]</sup>	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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