

# 74LVC1G3157

## 2-channel analog multiplexer/demultiplexer

Rev. 5 — 6 December 2012

Product data sheet

### 1. General description

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The 74LVC1G3157 provides one analog multiplexer/demultiplexer with one digital select input (S), two independent inputs/outputs (Y0, Y1) and a common input/output (Z).

Schmitt trigger action at the select input makes the circuit tolerant of slower input rise and fall times across the entire  $V_{CC}$  range from 1.65 V to 5.5 V.

### 2. Features and benefits

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- Wide supply voltage range from 1.65 V to 5.5 V
- Very low ON resistance:
  - ◆ 7.5  $\Omega$  (typical) at  $V_{CC} = 2.7$  V
  - ◆ 6.5  $\Omega$  (typical) at  $V_{CC} = 3.3$  V
  - ◆ 6  $\Omega$  (typical) at  $V_{CC} = 5$  V
- Switch current capability of 32 mA
- Break-before-make switching
- High noise immunity
- CMOS low power consumption
- TTL interface compatibility at 3.3 V
- Latch-up performance meets requirements of JESD 78 Class I
- ESD protection:
  - ◆ HBM JESD22-A114F exceeds 2000 V
  - ◆ MM JESD22-A115-A exceeds 200 V
- Control input accepts voltages up to 5.5 V
- Multiple package options
- Specified from  $-40$  °C to  $+85$  °C and from  $-40$  °C to  $+125$  °C



### 3. Ordering information

Table 1. Ordering information

Type number	Package			Version
	Temperature range	Name	Description	
74LVC1G3157GW	-40 °C to +125 °C	SC-88	plastic surface-mounted package; 6 leads	SOT363
74LVC1G3157GV	-40 °C to +125 °C	SC-74	plastic surface-mounted package (TSOP6); 6 leads	SOT457
74LVC1G3157GM	-40 °C to +125 °C	XSON6	plastic extremely thin small outline package; no leads; 6 terminals; body 1 × 1.45 × 0.5 mm	SOT886
74LVC1G3157GF	-40 °C to +125 °C	XSON6	plastic extremely thin small outline package; no leads; 6 terminals; body 1 × 1 × 0.5 mm	SOT891
74LVC1G3157GN	-40 °C to +125 °C	XSON6	extremely thin small outline package; no leads; 6 terminals; body 0.9 × 1.0 × 0.35 mm	SOT1115
74LVC1G3157GS	-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 <sup>[1]</sup>
74LVC1G3157GW	YJ
74LVC1G3157GV	YJ
74LVC1G3157GM	YJ
74LVC1G3157GF	YJ
74LVC1G3157GN	YJ
74LVC1G3157GS	YJ

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

### 5. Functional diagram

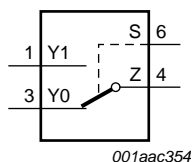


Fig 1. Logic symbol

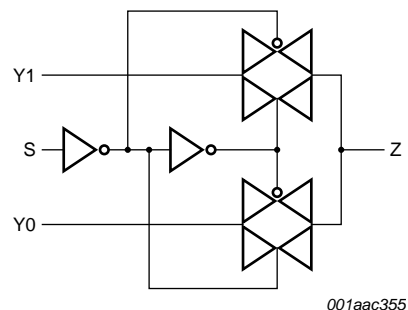
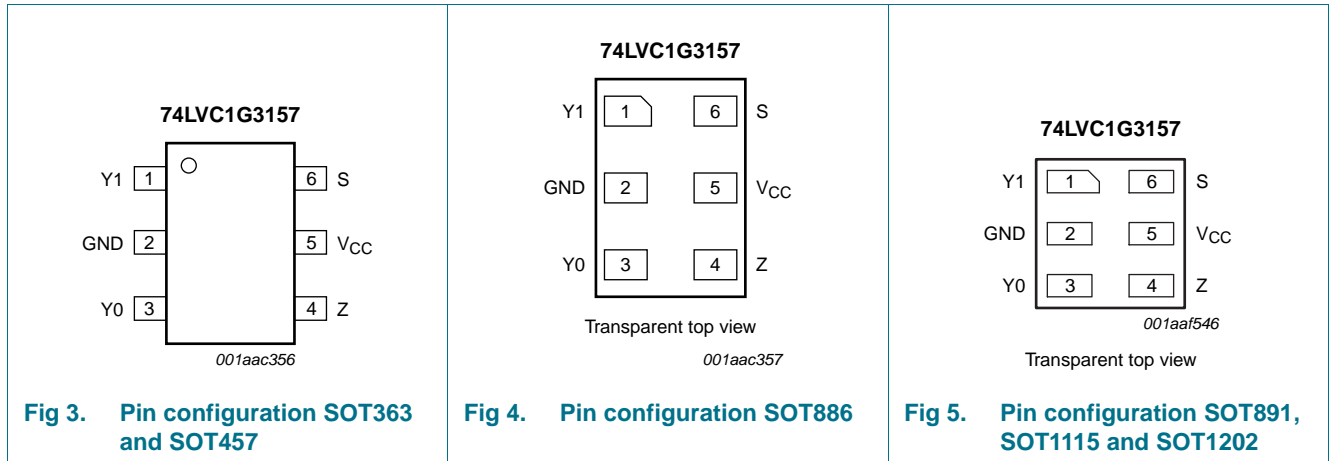


Fig 2. Logic diagram

## 6. Pinning information

### 6.1 Pinning



### 6.2 Pin description

Table 3. Pin description

Symbol	Pin	Description
Y1	1	independent input or output
GND	2	ground (0 V)
Y0	3	independent input or output
Z	4	common output or input
V <sub>CC</sub>	5	supply voltage
S	6	select input

## 7. Functional description

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

Input S	Channel on
L	Y0
H	Y1

[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
$V_{CC}$	supply voltage		-0.5	+6.5	V
$V_I$	input voltage		[1] -0.5	+6.5	V
$I_{IK}$	input clamping current	$V_I < -0.5\text{ V}$ or $V_I > V_{CC} + 0.5\text{ V}$	-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
$V_{SW}$	switch voltage	enable and disable mode	[2] -0.5	$V_{CC} + 0.5$	V
$I_{SW}$	switch current	$V_{SW} > -0.5\text{ V}$ or $V_{SW} < V_{CC} + 0.5\text{ V}$	-	$\pm 50$	mA
$I_{CC}$	supply current		-	100	mA
$I_{GND}$	ground current		-100	-	mA
$T_{stg}$	storage temperature		-65	+150	°C
$P_{tot}$	total power dissipation	$T_{amb} = -40\text{ °C}$ to $+125\text{ °C}$	[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.

[3] For SC-88 and SC-74 packages: above 87.5 °C the value of  $P_{tot}$  derates linearly with 4.0 mW/K.  
For XSON6 package: above 118 °C the value of  $P_{tot}$  derates linearly with 7.8 mW/K.

## 9. Recommended operating conditions

**Table 6. Recommended operating conditions**

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_{CC}$	supply voltage		1.65	-	5.5	V
$V_I$	input voltage		0	-	5.5	V
$V_{SW}$	switch voltage	enable and disable mode	[1] 0	-	$V_{CC}$	V
$T_{amb}$	ambient temperature		-40	-	+125	°C
$\Delta t/\Delta V$	input transition rise and fall rate	$V_{CC} = 1.65\text{ V}$ to $2.7\text{ V}$	[2] -	-	20	ns/V
		$V_{CC} = 2.7\text{ V}$ to $5.5\text{ V}$	[2] -	-	10	ns/V

[1] To avoid sinking GND current from terminal Z when switch current flows in terminal Yn, the voltage drop across the bidirectional switch must not exceed 0.4 V. If the switch current flows into terminal Z, no GND current will flow from terminal Yn. 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**

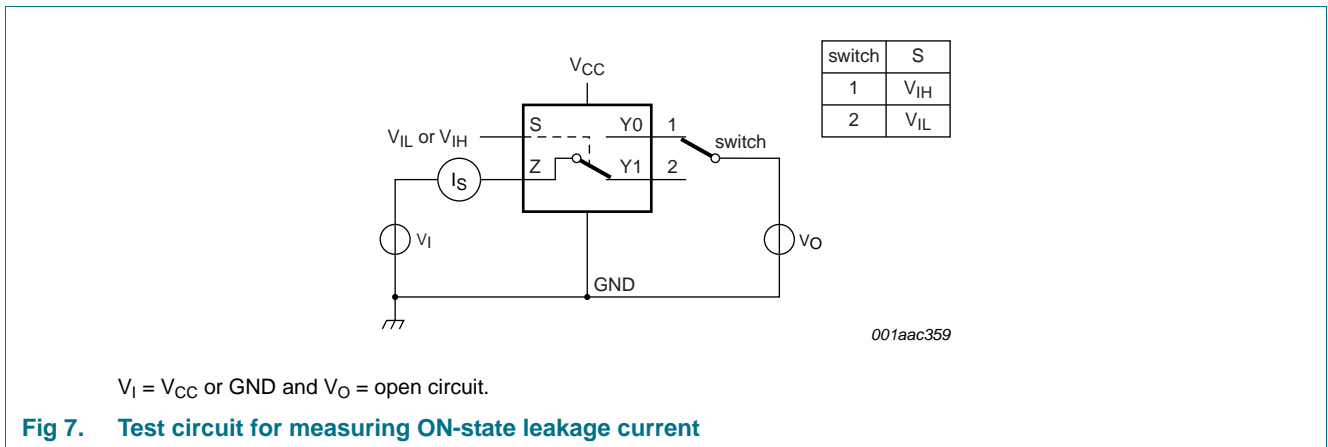
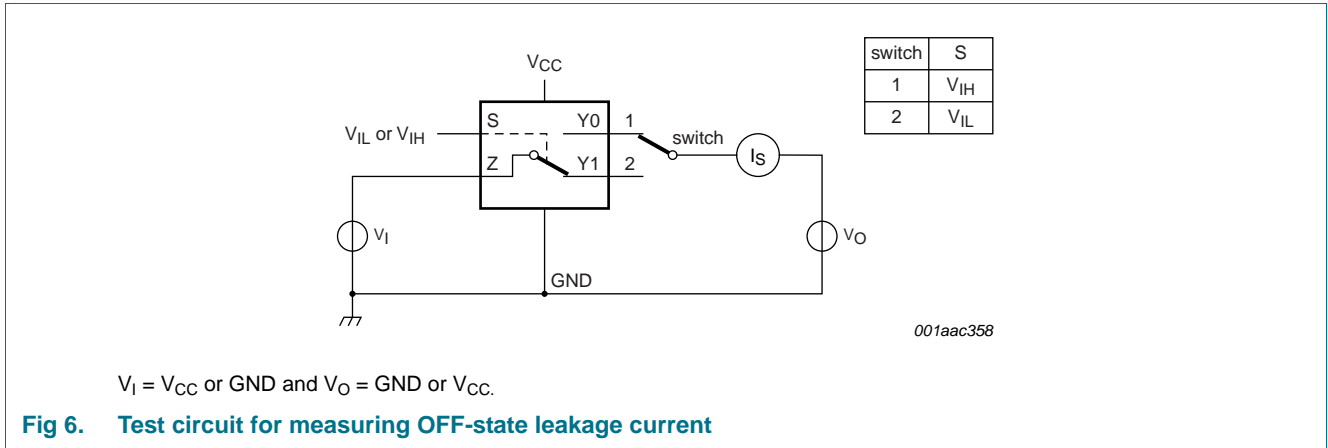
At recommended operating conditions; voltages are referenced to GND (ground 0 V).

Symbol	Parameter	Conditions	-40 °C to +85 °C			-40 °C to +125 °C		Unit	
			Min	Typ <sup>[1]</sup>	Max	Min	Max		
V <sub>IH</sub>	HIGH-level input voltage	V <sub>CC</sub> = 1.65 V to 1.95 V	0.65V <sub>CC</sub>	-	-	0.65V <sub>CC</sub>	-	V	
		V <sub>CC</sub> = 2.3 V to 2.7 V	1.7	-	-	1.7	-	V	
		V <sub>CC</sub> = 3 V to 3.6 V	2.0	-	-	2.0	-	V	
		V <sub>CC</sub> = 4.5 V to 5.5 V	0.7V <sub>CC</sub>	-	-	0.7V <sub>CC</sub>	-	V	
V <sub>IL</sub>	LOW-level input voltage	V <sub>CC</sub> = 1.65 V to 1.95 V	-	-	0.35V <sub>CC</sub>	-	0.35V <sub>CC</sub>	V	
		V <sub>CC</sub> = 2.3 V to 2.7 V	-	-	0.7	-	0.7	V	
		V <sub>CC</sub> = 3 V to 3.6 V	-	-	0.8	-	0.8	V	
		V <sub>CC</sub> = 4.5 V to 5.5 V	-	-	0.3V <sub>CC</sub>	-	0.3V <sub>CC</sub>	V	
I <sub>I</sub>	input leakage current	pin S; V <sub>I</sub> = 5.5 V or GND; V <sub>CC</sub> = 0 V to 5.5 V	[2]	-	±0.1	±2	-	±10	μA
I <sub>S(OFF)</sub>	OFF-state leakage current	V <sub>CC</sub> = 5.5 V; see <a href="#">Figure 6</a>	[2]	-	±0.1	±5	-	±20	μA
I <sub>S(ON)</sub>	ON-state leakage current	V <sub>CC</sub> = 5.5 V; see <a href="#">Figure 7</a>	[2]	-	±0.1	±5	-	±20	μA
I <sub>CC</sub>	supply current	V <sub>I</sub> = 5.5 V or GND; V <sub>SW</sub> = GND or V <sub>CC</sub> ; V <sub>CC</sub> = 1.65 V to 5.5 V	[2]	-	0.1	10	-	40	μA
ΔI <sub>CC</sub>	additional supply current	pin S; V <sub>I</sub> = V <sub>CC</sub> - 0.6 V; V <sub>CC</sub> = 5.5 V; V <sub>SW</sub> = GND or V <sub>CC</sub>	[2]	-	5	500	-	5000	μA
C <sub>I</sub>	input capacitance		-	2.5	-	-	-	-	pF
C <sub>S(OFF)</sub>	OFF-state capacitance		-	6.0	-	-	-	-	pF
C <sub>S(ON)</sub>	ON-state capacitance		-	18	-	-	-	-	pF

[1] Typical values are measured at T<sub>amb</sub> = 25 °C.

[2] These typical values are measured at V<sub>CC</sub> = 3.3 V

10.1 Test circuits



10.2 ON resistance

**Table 8. ON resistance**

At recommended operating conditions; voltages are referenced to GND (ground 0 V); for graphs see [Figure 9](#) to [Figure 14](#).

Symbol	Parameter	Conditions	-40 °C to +85 °C		-40 °C to +125 °C		Unit		
			Min	Typ <sup>[1]</sup>	Max	Min		Max	
R <sub>ON(peak)</sub>	ON resistance (peak)	V <sub>I</sub> = GND to V <sub>CC</sub> ; see <a href="#">Figure 8</a> I <sub>SW</sub> = 4 mA; V <sub>CC</sub> = 1.65 V to 1.95 V	-	34.0	130	-	195	Ω	
			I <sub>SW</sub> = 8 mA; V <sub>CC</sub> = 2.3 V to 2.7 V	-	12.0	30	-	45	Ω
			I <sub>SW</sub> = 12 mA; V <sub>CC</sub> = 2.7 V	-	10.4	25	-	38	Ω
			I <sub>SW</sub> = 24 mA; V <sub>CC</sub> = 3 V to 3.6 V	-	7.8	20	-	30	Ω
			I <sub>SW</sub> = 32 mA; V <sub>CC</sub> = 4.5 V to 5.5 V	-	6.2	15	-	23	Ω

**Table 8. ON resistance ...continued**

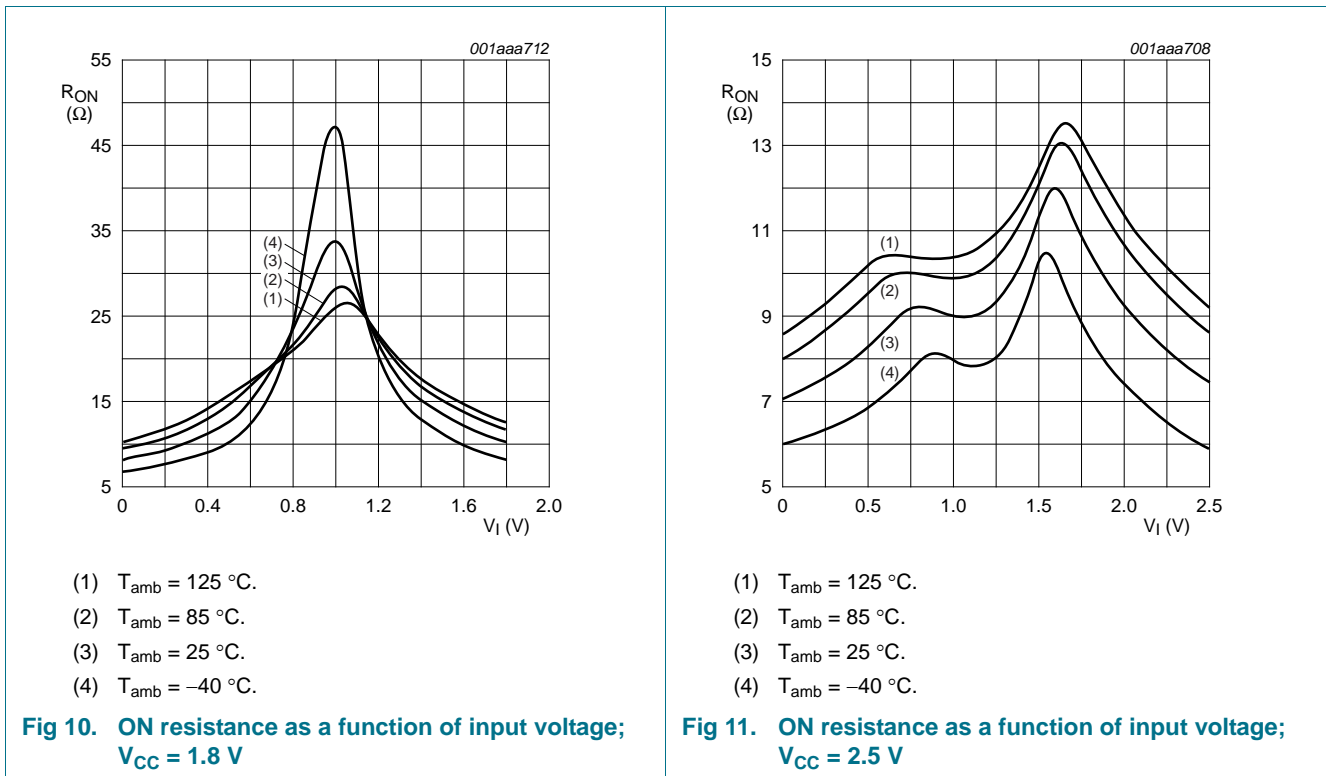
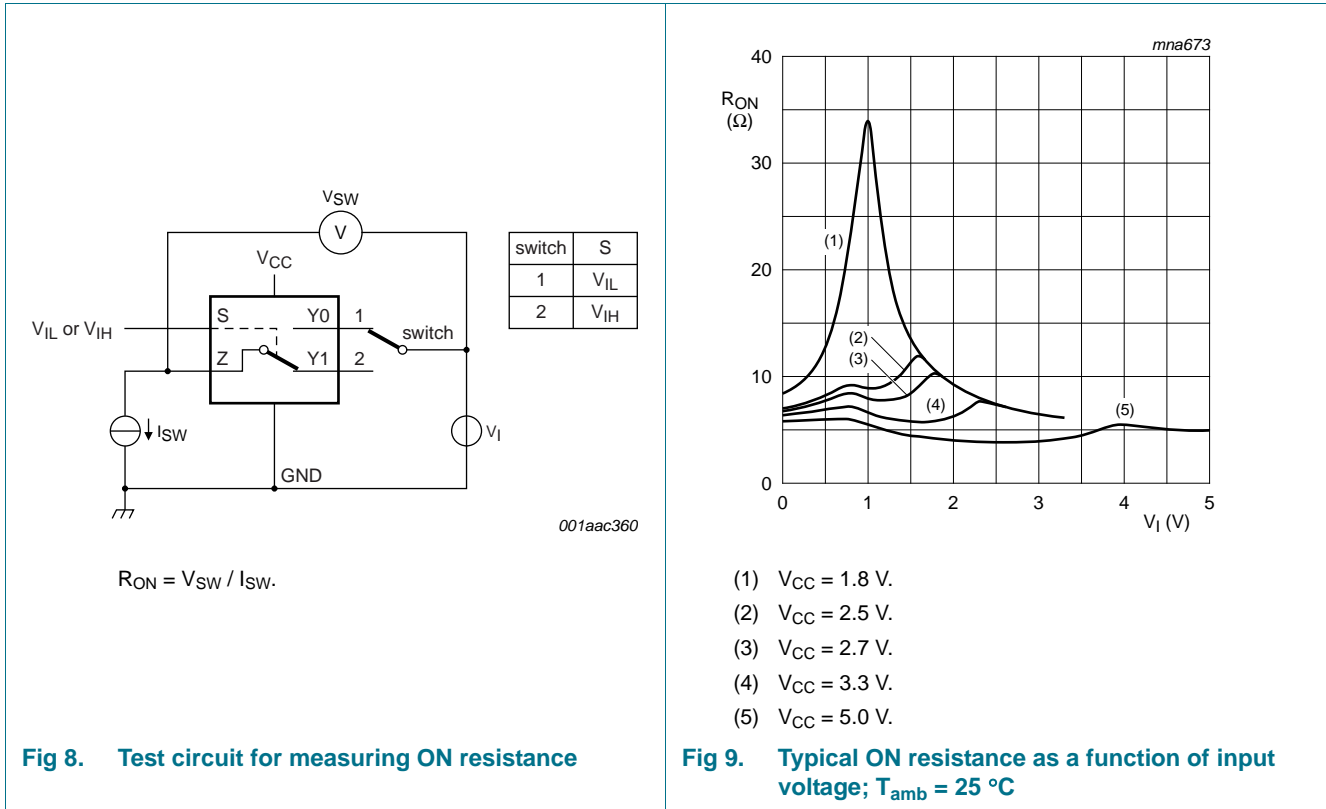
At recommended operating conditions; voltages are referenced to GND (ground 0 V); for graphs see [Figure 9](#) to [Figure 14](#).

Symbol	Parameter	Conditions	-40 °C to +85 °C			-40 °C to +125 °C		Unit
			Min	Typ <sup>[1]</sup>	Max	Min	Max	
R <sub>ON(rail)</sub>	ON resistance (rail)	V <sub>I</sub> = GND; see <a href="#">Figure 8</a>						
		I <sub>SW</sub> = 4 mA; V <sub>CC</sub> = 1.65 V to 1.95 V	-	8.2	18	-	27	Ω
		I <sub>SW</sub> = 8 mA; V <sub>CC</sub> = 2.3 V to 2.7 V	-	7.1	16	-	24	Ω
		I <sub>SW</sub> = 12 mA; V <sub>CC</sub> = 2.7 V	-	6.9	14	-	21	Ω
		I <sub>SW</sub> = 24 mA; V <sub>CC</sub> = 3 V to 3.6 V	-	6.5	12	-	18	Ω
		I <sub>SW</sub> = 32 mA; V <sub>CC</sub> = 4.5 V to 5.5 V	-	5.8	10	-	15	Ω
		V <sub>I</sub> = V <sub>CC</sub> ; see <a href="#">Figure 8</a>						
		I <sub>SW</sub> = 4 mA; V <sub>CC</sub> = 1.65 V to 1.95 V	-	10.4	30	-	45	Ω
		I <sub>SW</sub> = 8 mA; V <sub>CC</sub> = 2.3 V to 2.7 V	-	7.6	20	-	30	Ω
		I <sub>SW</sub> = 12 mA; V <sub>CC</sub> = 2.7 V	-	7.0	18	-	27	Ω
		I <sub>SW</sub> = 24 mA; V <sub>CC</sub> = 3 V to 3.6 V	-	6.1	15	-	23	Ω
		I <sub>SW</sub> = 32 mA; V <sub>CC</sub> = 4.5 V to 5.5 V	-	4.9	10	-	15	Ω
R <sub>ON(flat)</sub>	ON resistance (flatness)	V <sub>I</sub> = GND to V <sub>CC</sub> <a href="#">[2]</a>						
		I <sub>SW</sub> = 4 mA; V <sub>CC</sub> = 1.65 V to 1.95 V	-	26.0	-	-	-	Ω
		I <sub>SW</sub> = 8 mA; V <sub>CC</sub> = 2.3 V to 2.7 V	-	5.0	-	-	-	Ω
		I <sub>SW</sub> = 12 mA; V <sub>CC</sub> = 2.7 V	-	3.5	-	-	-	Ω
		I <sub>SW</sub> = 24 mA; V <sub>CC</sub> = 3 V to 3.6 V	-	2.0	-	-	-	Ω
		I <sub>SW</sub> = 32 mA; V <sub>CC</sub> = 4.5 V to 5.5 V	-	1.5	-	-	-	Ω

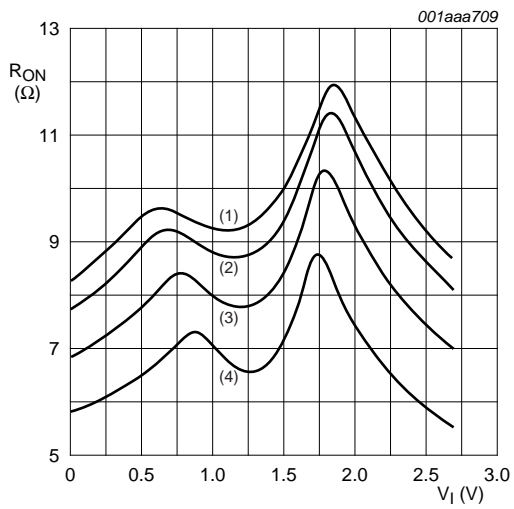
[1] Typical values are measured at T<sub>amb</sub> = 25 °C and nominal V<sub>CC</sub>.

[2] 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

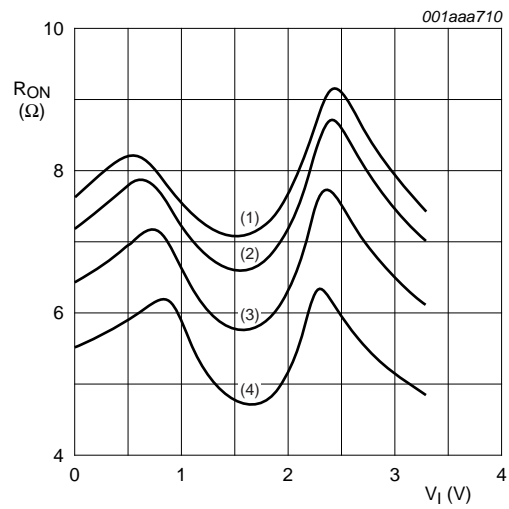






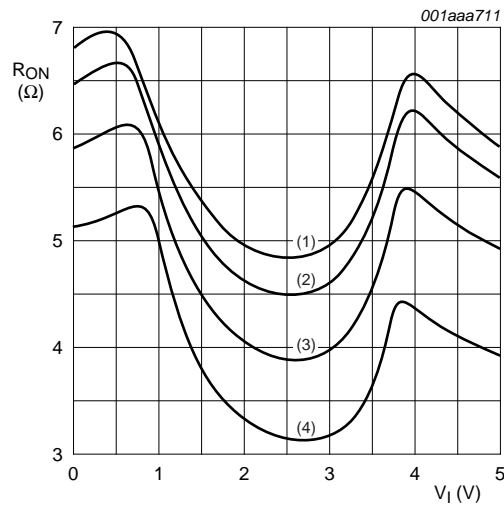
- (1)  $T_{amb} = 125\text{ }^{\circ}\text{C}.$
- (2)  $T_{amb} = 85\text{ }^{\circ}\text{C}.$
- (3)  $T_{amb} = 25\text{ }^{\circ}\text{C}.$
- (4)  $T_{amb} = -40\text{ }^{\circ}\text{C}.$

**Fig 12. ON resistance as a function of input voltage;  $V_{CC} = 2.7\text{ V}$**



- (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 13. ON resistance as a function of input voltage;  $V_{CC} = 3.3\text{ V}$**



- (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 14. ON resistance as a function of input voltage;  $V_{CC} = 5.0\text{ V}$**

## 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	-40 °C to +85 °C			-40 °C to +125 °C		Unit
			Min	Typ <sup>[1]</sup>	Max	Min	Max	
t <sub>pd</sub>	propagation delay	Z to Y <sub>n</sub> or Y <sub>n</sub> to Z; see <a href="#">Figure 15</a> <sup>[2][3]</sup>						
		V <sub>CC</sub> = 1.65 V to 1.95 V	-	-	2	-	3.0	ns
		V <sub>CC</sub> = 2.3 V to 2.7 V	-	-	1.2	-	2.0	ns
		V <sub>CC</sub> = 2.7 V	-	-	1.0	-	1.5	ns
		V <sub>CC</sub> = 3 V to 3.6 V	-	-	0.8	-	1.5	ns
		V <sub>CC</sub> = 4.5 V to 5.5 V	-	-	0.6	-	1.0	ns
t <sub>en</sub>	enable time	S to Y <sub>n</sub> ; see <a href="#">Figure 16</a> <sup>[4]</sup>						
		V <sub>CC</sub> = 1.65 V to 1.95 V	1.0	8.7	14	1.0	14.0	ns
		V <sub>CC</sub> = 2.3 V to 2.7 V	1.0	5.3	7.5	1.0	7.5	ns
		V <sub>CC</sub> = 2.7 V	1.0	4.9	6.0	1.0	6.0	ns
		V <sub>CC</sub> = 3 V to 3.6 V	0.5	4.0	5.5	0.5	5.5	ns
		V <sub>CC</sub> = 4.5 V to 5.5 V	0.5	3.0	4.0	0.5	4.0	ns
t <sub>dis</sub>	disable time	S to Y <sub>n</sub> ; see <a href="#">Figure 16</a> <sup>[5]</sup>						
		V <sub>CC</sub> = 1.65 V to 1.95 V	2.5	6.0	8.5	2.5	8.5	ns
		V <sub>CC</sub> = 2.3 V to 2.7 V	2.0	4.4	6.0	2.0	6.0	ns
		V <sub>CC</sub> = 2.7 V	1.5	4.2	5.0	1.5	5.0	ns
		V <sub>CC</sub> = 3 V to 3.6 V	1.5	3.6	4.5	1.5	4.5	ns
		V <sub>CC</sub> = 4.5 V to 5.5 V	0.8	2.9	3.5	0.8	3.5	ns
t <sub>b-m</sub>	break-before-make time	see <a href="#">Figure 17</a> <sup>[6]</sup>						
		V <sub>CC</sub> = 1.65 V to 1.95 V	0.5	-	-	0.5	-	ns
		V <sub>CC</sub> = 2.3 V to 2.7 V	0.5	-	-	0.5	-	ns
		V <sub>CC</sub> = 2.7 V	0.5	-	-	0.5	-	ns
		V <sub>CC</sub> = 3 V to 3.6 V	0.5	-	-	0.5	-	ns
		V <sub>CC</sub> = 4.5 V to 5.5 V	0.5	-	-	0.5	-	ns

[1] Typical values are measured at T<sub>amb</sub> = 25 °C and nominal V<sub>CC</sub>.

[2] t<sub>pd</sub> is the same as t<sub>PLH</sub> and t<sub>PHL</sub>.

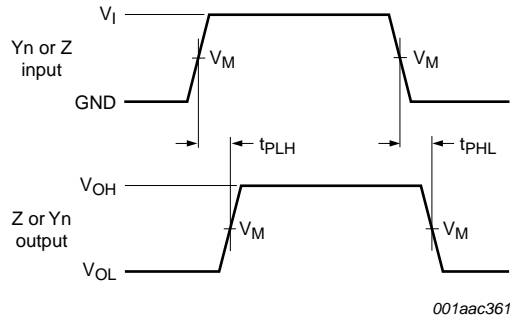
[3] Propagation delay is the calculated RC time constant of the typical ON resistance of the switch and the specified capacitance when driven by an ideal voltage source (zero output impedance).

[4] t<sub>en</sub> is the same as t<sub>PZH</sub> and t<sub>PZL</sub>.

[5] t<sub>dis</sub> is the same as t<sub>PLZ</sub> and t<sub>PHZ</sub>.

[6] Break-before-make specified by design.

11.1 Waveforms and test circuits

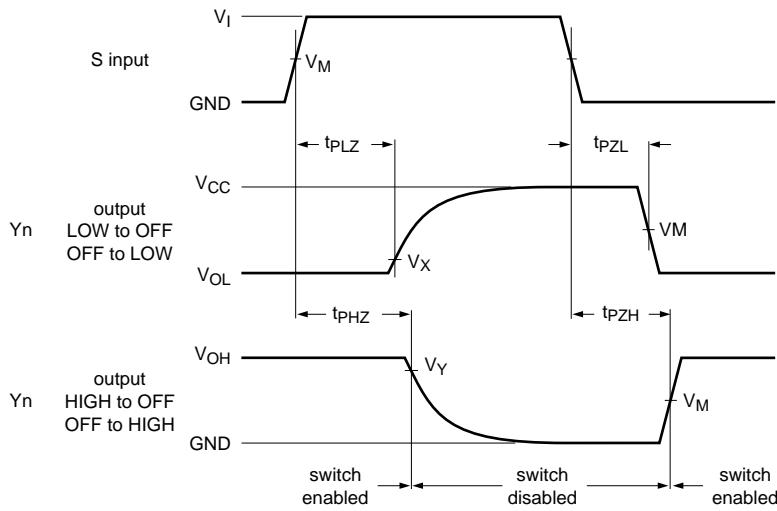


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Measurement points are given in [Table 10](#).

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

Fig 15. Input (Yn or Z) to output (Z or Yn) propagation delays



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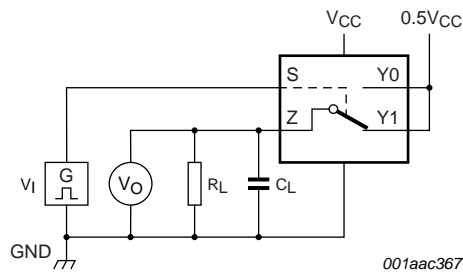
Measurement points are given in [Table 10](#).

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

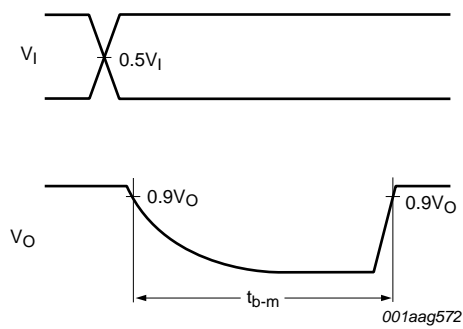
Fig 16. Enable and disable times

Table 10. Measurement points

Supply voltage	Input	Output		
$V_{CC}$	$V_M$	$V_M$	$V_X$	$V_Y$
1.65 V to 5.5 V	$0.5V_{CC}$	$0.5V_{CC}$	$V_{OL} + 0.3 V$	$V_{OH} - 0.3 V$

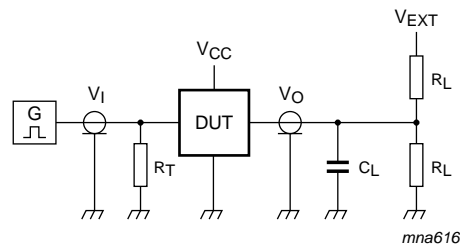


a. Test circuit



b. Input and output measurement points

**Fig 17. Test circuit for measuring break-before-make timing**



Test data is given in [Table 11](#).

Definitions test circuit:

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

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

$R_L$  = Load resistance.

$V_{EXT}$  = External voltage for measuring switching times.

**Fig 18. Test circuit for measuring switching times**

Table 11. Test data

Supply voltage	Input		Load		V <sub>EXT</sub>		
V <sub>CC</sub>	V <sub>I</sub>	t <sub>r</sub> , t <sub>f</sub>	C <sub>L</sub>	R <sub>L</sub>	t <sub>PLH</sub> , t <sub>PHL</sub>	t <sub>PZH</sub> , t <sub>PHZ</sub>	t <sub>PZL</sub> , t <sub>PLZ</sub>
1.65 V to 1.95 V	V <sub>CC</sub>	≤ 2.0 ns	50 pF	500 Ω	open	GND	2V <sub>CC</sub>
2.3 V to 2.7 V	V <sub>CC</sub>	≤ 2.0 ns	50 pF	500 Ω	open	GND	2V <sub>CC</sub>
2.7 V	V <sub>CC</sub>	≤ 2.5 ns	50 pF	500 Ω	open	GND	2V <sub>CC</sub>
3 V to 3.6 V	V <sub>CC</sub>	≤ 2.5 ns	50 pF	500 Ω	open	GND	2V <sub>CC</sub>
4.5 V to 5.5 V	V <sub>CC</sub>	≤ 2.5 ns	50 pF	500 Ω	open	GND	2V <sub>CC</sub>

## 11.2 Additional dynamic characteristics

Table 12. Additional dynamic characteristics

At recommended operating conditions; voltages are referenced to GND (ground = 0 V); T<sub>amb</sub> = 25 °C.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
THD	total harmonic distortion	f <sub>i</sub> = 600 Hz to 20 kHz; R <sub>L</sub> = 600 Ω; C <sub>L</sub> = 50 pF; V <sub>I</sub> = 0.5 V (p-p); see <a href="#">Figure 19</a>				
		V <sub>CC</sub> = 1.65 V	-	0.260	-	%
		V <sub>CC</sub> = 2.3 V	-	0.078	-	%
		V <sub>CC</sub> = 3.0 V	-	0.078	-	%
		V <sub>CC</sub> = 4.5 V	-	0.078	-	%
f <sub>(-3dB)</sub>	-3 dB frequency response	R <sub>L</sub> = 50 Ω; C <sub>L</sub> = 5 pF; see <a href="#">Figure 20</a>				
		V <sub>CC</sub> = 1.65 V	-	200	-	MHz
		V <sub>CC</sub> = 2.3 V	-	300	-	MHz
		V <sub>CC</sub> = 3.0 V	-	300	-	MHz
		V <sub>CC</sub> = 4.5 V	-	300	-	MHz
α <sub>iso</sub>	isolation (OFF-state)	R <sub>L</sub> = 50 Ω; C <sub>L</sub> = 5 pF; f <sub>i</sub> = 10 MHz; see <a href="#">Figure 21</a>				
		V <sub>CC</sub> = 1.65 V	-	-42	-	dB
		V <sub>CC</sub> = 2.3 V	-	-42	-	dB
		V <sub>CC</sub> = 3.0 V	-	-40	-	dB
		V <sub>CC</sub> = 4.5 V	-	-40	-	dB
Q <sub>inj</sub>	charge injection	C <sub>L</sub> = 0.1 nF; V <sub>gen</sub> = 0 V; R <sub>gen</sub> = 0 Ω; f <sub>i</sub> = 1 MHz; R <sub>L</sub> = 1 MΩ; see <a href="#">Figure 22</a>				
		V <sub>CC</sub> = 1.8 V	-	3.3	-	pC
		V <sub>CC</sub> = 2.5 V	-	4.1	-	pC
		V <sub>CC</sub> = 3.3 V	-	5.0	-	pC
		V <sub>CC</sub> = 4.5 V	-	6.4	-	pC
		V <sub>CC</sub> = 5.5 V	-	7.5	-	pC

11.3 Test circuits

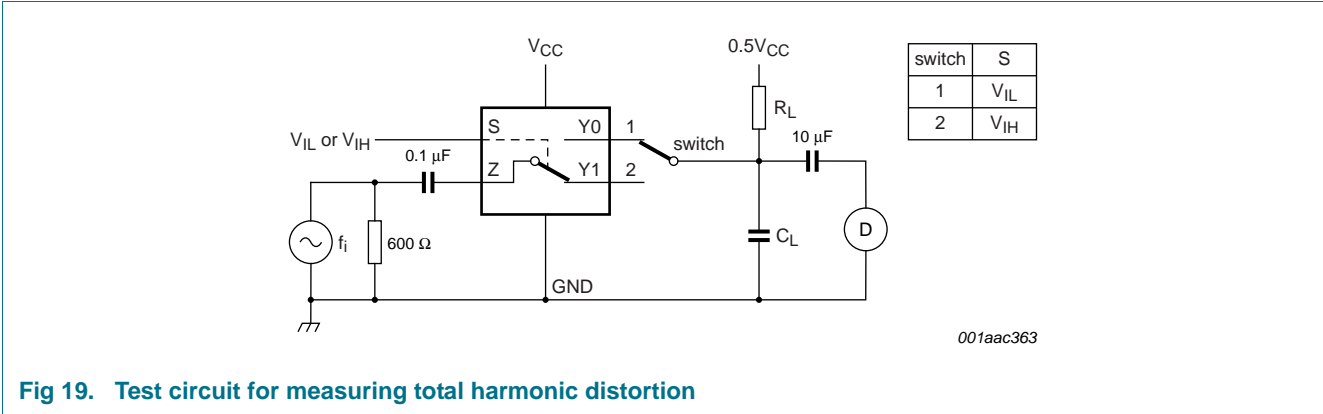


Fig 19. Test circuit for measuring total harmonic distortion

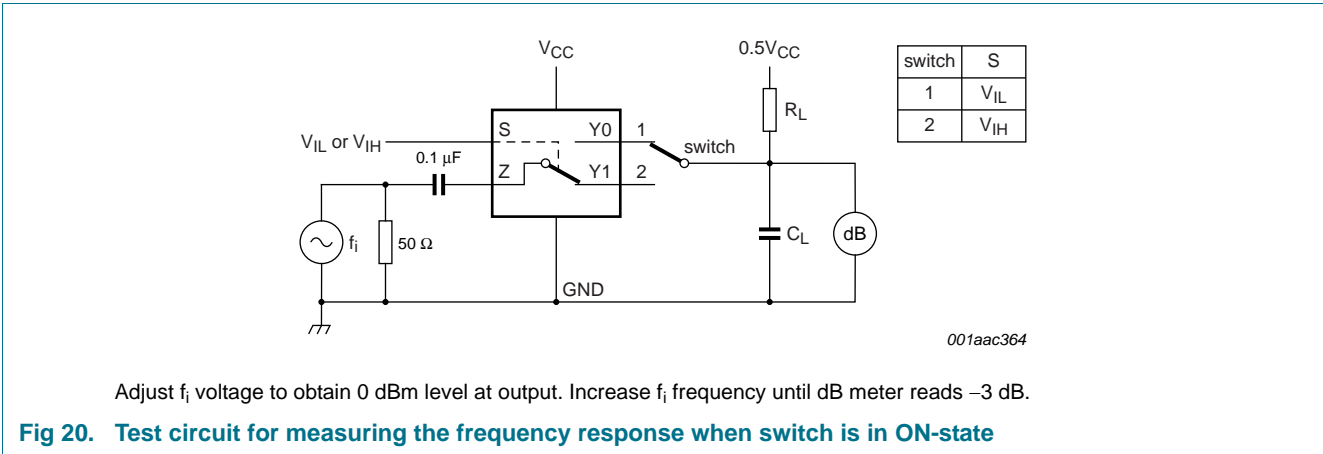


Fig 20. Test circuit for measuring the frequency response when switch is in ON-state

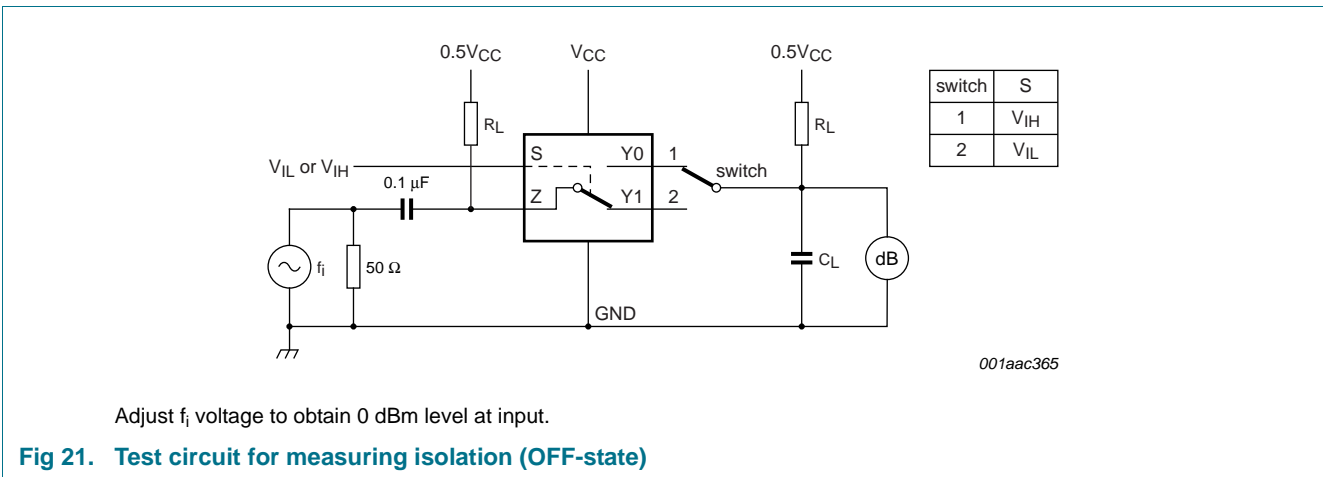
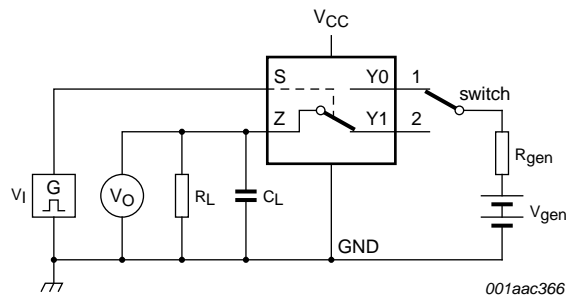
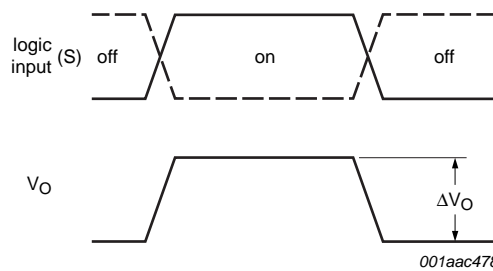


Fig 21. Test circuit for measuring isolation (OFF-state)



a. Test circuit



b. Input and output pulse definitions

$$Q_{inj} = \Delta V_O \times C_L$$

$\Delta V_O$  = output voltage variation.

$R_{gen}$  = generator resistance.

$V_{gen}$  = generator voltage.

**Fig 22. Test circuit for measuring charge injection**

12. Package outline

Plastic surface-mounted package; 6 leads

SOT363

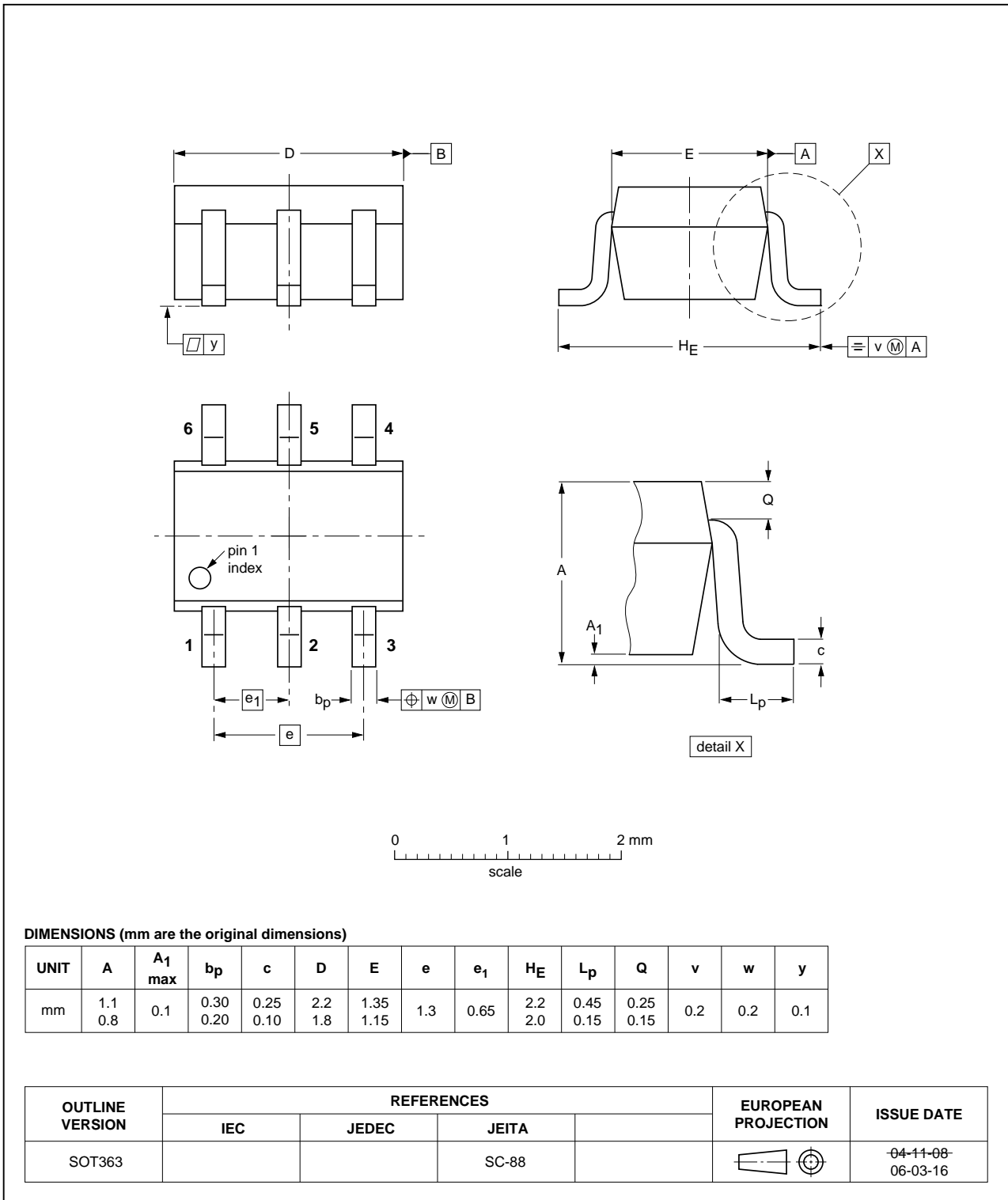


Fig 23. Package outline SOT363 (SC-88)



Plastic surface-mounted package (TSOP6); 6 leads

SOT457

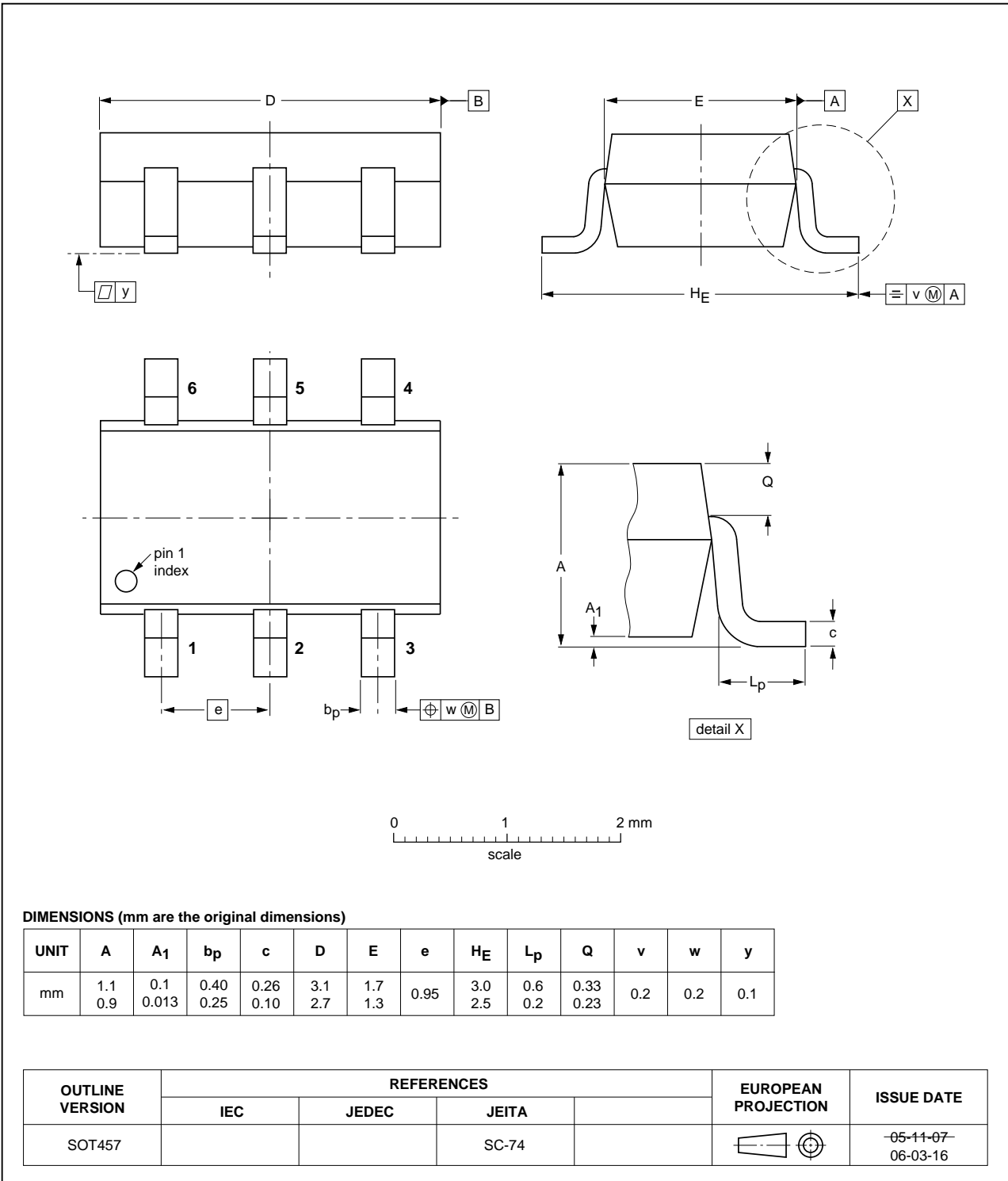


Fig 24. Package outline SOT457 (SC-74)

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

SOT886



Fig 25. Package outline SOT886 (XSON6)

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

SOT891



Fig 26. Package outline SOT891 (XSON6)

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

SOT1115



Fig 27. 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

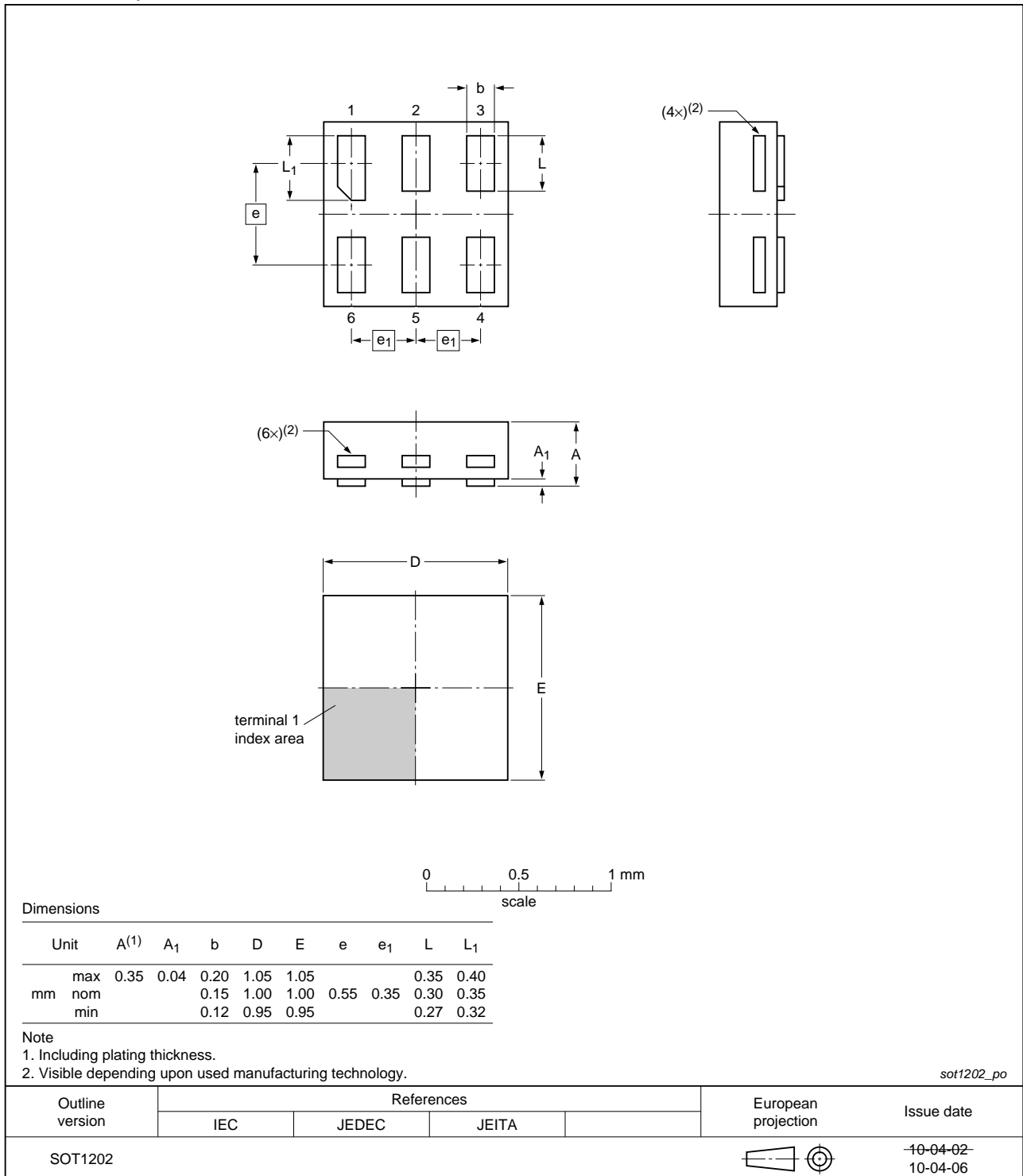


Fig 28. Package outline SOT1202 (XSON6)

## 13. Abbreviations

Table 13. Abbreviations

Acronym	Description
CMOS	Complementary Metal Oxide Semiconductor
TTL	Transistor-Transistor Logic
HBM	Human Body Model
ESD	ElectroStatic Discharge
MM	Machine Model
DUT	Device Under Test

## 14. Revision history

Table 14. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
74LVC1G3157 v.5	20121206	Product data sheet	-	74LVC1G3157 v.4
Modifications:	<ul style="list-style-type: none"> <li>Package outline drawing of SOT886 (<a href="#">Figure 25</a>) modified.</li> </ul>			
74LVC1G3157 v.4	20111206	Product data sheet	-	74LVC1G3157 v.3
74LVC1G3157 v.3	20100916	Product data sheet	-	74LVC1G3157 v.2
74LVC1G3157 v.2	20070918	Product data sheet	-	74LVC1G3157 v.1
74LVC1G3157 v.1	20050207	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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