# 74AHC1G66; 74AHCT1G66

## Single-pole single-throw analog switch

Rev. 04 — 18 December 2008 Product data sheet

## 1. General description

74AHC1G66 and 74AHCT1G66 are high-speed Si-gate CMOS devices. They are single-pole single-throw analog switches. The switch has two input/output pins (Y and Z) and an active HIGH enable input pin (E). When pin E is LOW, the analog switch is turned off.

## 2. Features

- Very low ON resistance:
  - 26 Ω (typ.) at $V_{CC}$ = 3.0 V
  - 16 Ω (typ.) at $V_{CC}$ = 4.5 V
  - 14 Ω (typ.) at $V_{CC}$ = 5.5 V
- High noise immunity
- Low power dissipation
- Balanced propagation delays
- Multiple package options
- ESD protection:
  - HMB JESD22-A114E exceeds 2000 V
  - MM JESD22-A115-A exceeds 200 V
  - CDM JESD22-C101C exceeds 1000 V
- Specified from –40 °C to +85 °C and –40 °C to +125 °C

## 3. Ordering information

**Table 1. Ordering information**

| Type number | Package | | | |
|---|---|---|---|---|
| | Temperature range | Name | Description | Version |
| 74AHC1G66GW | –40 °C to +125 °C | TSSOP5 | plastic thin shrink small outline package; 5 leads; body width 1.25 mm | SOT353-1 |
| 74AHCT1G66GW | | | | |
| 74AHC1G66GV | –40 °C to +125 °C | SC-74A | plastic surface-mounted package; 5 leads | SOT753 |
| 74AHCT1G66GV | | | | |

## 4. Marking

**Table 2. Marking codes**

| Type number | Marking |
|---|---|
| 74AHC1G66GW | AL |
| 74AHCT1G66GW | CL |
| 74AHC1G66GV | A66 |
| 74AHCT1G66GV | C66 |

## 5. Functional diagram

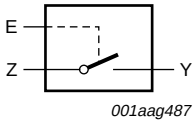



**Fig 1. Logic symbol**

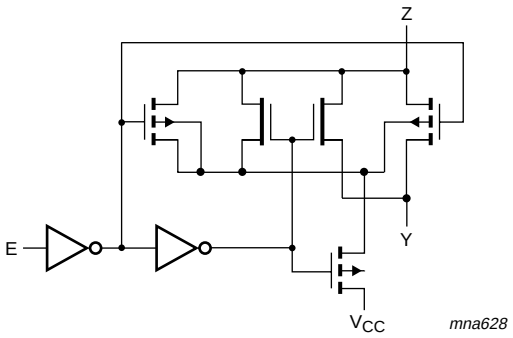



**Fig 2. Logic diagram**

## 6. Pinning information

### 6.1 Pinning

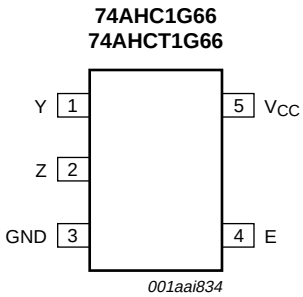



**Fig 3. Pin configuration SOT353-1 and SOT753**

### 6.2 Pin description

**Table 3. Pin description**

| Symbol | Pin | Description |
|---|---|---|
| Y | 1 | independent input or output |
| Z | 2 | independent input or output |
| GND | 3 | ground (0 V) |
| E | 4 | enable input (active HIGH) |
| $V_{CC}$ | 5 | supply voltage |

## 7. Functional description

**Table 4. Function table[1]**

| Input E | Switch |
|---|---|
| L | OFF |
| H | ON |

[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 | +7.0 | V |
| $I_{IK}$ | input clamping current | $V_I < –0.5$ V | [1] | –20 | - | mA |
| $I_{SK}$ | switch clamping current | $V_I < –0.5$ V or $V_I > V_{CC} + 0.5$ V | [1] | - | ±20 | mA |
| $I_{SW}$ | switch current | $–0.5 \text{ V} < V_O < V_{CC} + 0.5$ V | | - | ±25 | mA |
| $I_{CC}$ | supply current | | | - | 75 | mA |
| $I_{GND}$ | ground current | | | –75 | - | mA |
| $T_{stg}$ | storage temperature | | | –65 | +150 | °C |
| $P_{tot}$ | total power dissipation | $T_{amb}$ = –40 °C to +125 °C | [2] | - | 250 | mW |

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

[2] For TSSOP5 and SC-74A packages: above 87.5 °C the value of $P_{tot}$ derates linearly with 4.0 mW/K.

## 9. Recommended operating conditions

**Table 6. Recommended operating conditions**

*Voltages are referenced to GND (ground = 0 V).[1]*

| Symbol | Parameter | Conditions | 74AHC1G66 | | | 74AHCT1G66 | | | Unit |
|---|---|---|---|---|---|---|---|---|---|
| | | | Min | Typ | Max | Min | Typ | Max | |
| $V_{CC}$ | supply voltage | | 2.0 | 5.0 | 5.5 | 4.5 | 5.0 | 5.5 | V |
| $V_I$ | input voltage | | 0 | - | 5.5 | 0 | - | 5.5 | V |
| $V_{SW}$ | switch voltage | | 0 | - | $V_{CC}$ | 0 | - | $V_{CC}$ | V |

**Table 6. Recommended operating conditions** *…continued*

*Voltages are referenced to GND (ground = 0 V).*[1]

| Symbol | Parameter | Conditions | | 74AHC1G66 | | | 74AHCT1G66 | | | Unit |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Min | Typ | Max | Min | Typ | Max | |
| $T_{amb}$ | ambient temperature | | | –40 | +25 | +125 | –40 | +25 | +125 | °C |
| Δt/ΔV | input transition rise and fall rate | $V_{CC}$ = 3.3 ± 0.3 V | [2] | - | - | 100 | - | - | - | ns/V |
| | | $V_{CC}$ = 5.0 ± 0.5 V | [2] | - | - | 20 | - | - | 20 | ns/V |

[1] To avoid drawing $V_{CC}$ current out of pin Z, when switch current flows in pin Y, the voltage drop across the bidirectional switch must not exceed 0.4 V. If the switch current flows into pin Z, no $V_{CC}$ current will flow out of terminal Y. In this case there is no limit for the voltage drop across the switch, but the voltage at pins Y and Z may not exceed $V_{CC}$ or GND.

[2] Applies to control signal levels.

## 10. Static characteristics

**Table 7. Static characteristics**

*Voltages are referenced to GND (ground = 0 V).*

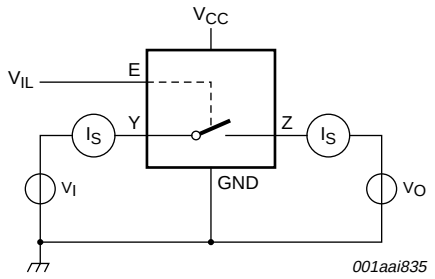
| Symbol | Parameter | Conditions | 25 °C | | | –40 °C to +85 °C | | –40 °C to +125 °C | | Unit |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Min | Typ | Max | Min | Max | Min | Max | |
| **74AHC1G66** | | | | | | | | | | |
| $V_{IH}$ | HIGH-level input voltage | $V_{CC}$ = 2.0 V | 1.5 | - | - | 1.5 | - | 1.5 | - | V |
| | | $V_{CC}$ = 3.0 V | 2.1 | - | - | 2.1 | - | 2.1 | - | V |
| | | $V_{CC}$ = 5.5 V | 3.85 | - | - | 3.85 | - | 3.85 | - | V |
| $V_{IL}$ | LOW-level input voltage | $V_{CC}$ = 2.0 V | - | - | 0.5 | - | 0.5 | - | 0.5 | V |
| | | $V_{CC}$ = 3.0 V | - | - | 0.9 | - | 0.9 | - | 0.9 | V |
| | | $V_{CC}$ = 5.5 V | - | - | 1.65 | - | 1.65 | - | 1.65 | V |
| $I_I$ | input leakage current | $V_I$ = 5.5 V or GND; $V_{CC}$ = 5.5 V | - | - | 0.1 | - | 1.0 | - | 2.0 | μA |
| $I_{S(OFF)}$ | OFF-state leakage current | Y or Z; $V_{CC}$ = 5.5 V; see Figure 4 | - | - | 0.1 | - | 1.0 | - | 4.0 | μA |
| $I_{S(ON)}$ | ON-state leakage current | Y or Z; $V_{CC}$ = 5.5 V; see Figure 5 | - | - | 0.1 | - | 1.0 | - | 4.0 | μA |
| $I_{CC}$ | supply current | E, Y or Z = $V_{CC}$ or GND; $V_{CC}$ = 5.5 V | - | - | 1.0 | - | 10 | - | 40 | μA |
| $C_I$ | input capacitance | E input | - | 2.0 | 10 | - | 10 | - | 10 | pF |
| $C_{S(ON)}$ | ON-state capacitance | Y or Z input or output | - | 4.0 | 10 | - | 10 | - | 10 | pF |
| **74AHCT1G66** | | | | | | | | | | |
| $V_{IH}$ | HIGH-level input voltage | $V_{CC}$ = 4.5 V to 5.5 V | 2.0 | - | - | 2.0 | - | 2.0 | - | V |
| $V_{IL}$ | LOW-level input voltage | $V_{CC}$ = 4.5 V to 5.5 V | - | - | 0.8 | - | 0.8 | - | 0.8 | V |
| $I_I$ | input leakage current | $V_I$ = 5.5 V or GND; $V_{CC}$ = 5.5 V | - | - | 0.1 | - | 1.0 | - | 2.0 | μA |

**Table 7. Static characteristics** *…continued*

*Voltages are referenced to GND (ground = 0 V).*

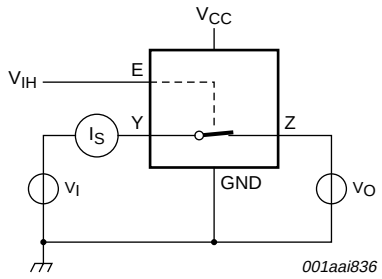
| Symbol | Parameter | Conditions | 25 °C | | | –40 °C to +85 °C | | –40 °C to +125 °C | | Unit |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Min | Typ | Max | Min | Max | Min | Max | |
| $I_{S(OFF)}$ | OFF-state leakage current | Y or Z; $V_{CC}$ = 5.5 V; see Figure 4 | - | - | 0.1 | - | 1.0 | - | 4.0 | µA |
| $I_{S(ON)}$ | ON-state leakage current | Y or Z; $V_{CC}$ = 5.5 V; see Figure 5 | - | - | 0.1 | - | 1.0 | - | 4.0 | µA |
| $I_{CC}$ | supply current | E, Y or Z = $V_{CC}$ or GND; $V_{CC}$ = 5.5 V | - | - | 1.0 | - | 10 | - | 40 | µA |
| $\Delta I_{CC}$ | additional supply current | per input pin; $V_I$ = 3.4 V; other inputs at $V_{CC}$ or GND; $I_O$ = 0 A; $V_{CC}$ = 5.5 V | - | - | 1.35 | - | 1.5 | - | 1.5 | mA |
| $C_I$ | input capacitance | E input | - | 2.0 | 10 | - | 10 | - | 10 | pF |
| $C_{S(ON)}$ | ON-state capacitance | Y or Z input or output | - | 4.0 | 10 | - | 10 | - | 10 | pF |

## 10.1 Test circuits




$V_I$ = $V_{CC}$ or GND and $V_O$ = GND or $V_{CC}$.

**Fig 4. Test circuit for measuring OFF-state leakage current**




$V_I$ = $V_{CC}$ or GND and $V_O$ = open circuit.

**Fig 5. Test circuit for measuring ON-state leakage current**

## 10.2 ON resistance

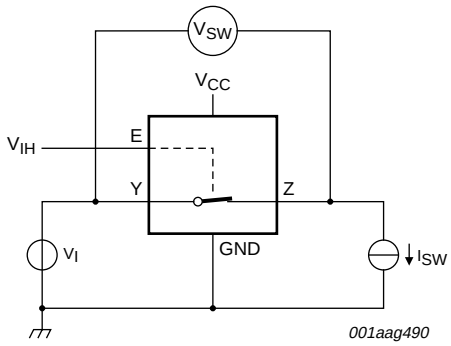
**Table 8. ON resistance**

*At recommended operating conditions; voltages are referenced to GND (ground 0 V); for graph see Figure 7 [1].*

| Symbol | Parameter | Conditions | 25 °C | | −40 °C to +85 °C | −40 °C to +125 °C | Unit |
|---|---|---|---|---|---|---|---|
| | | | Typ | max | Max | Max | |
| **74AHC1G66 and 74AHCT1G66** | | | | | | | |
| $R_{ON(peak)}$ | ON resistance (peak) | $V_I$ = $V_{CC}$ to GND; see Figure 6 | | | | | |
| | | $I_{SW}$ = 1.0 mA; $V_{CC}$ = 2.0 V | 148[1] | - | - | - | Ω |
| | | $I_{SW}$ = 10 mA; $V_{CC}$ = 3.0 V to 3.6 V | 28 | 50 | 70 | 110 | Ω |
| | | $I_{SW}$ = 10 mA; $V_{CC}$ = 4.5 V to 5.5 V | 15 | 30 | 40 | 60 | Ω |
| $R_{ON(rail)}$ | ON resistance (rail) | $V_I$ = GND; see Figure 6 | | | | | |
| | | $I_{SW}$ = 1.0 mA; $V_{CC}$ = 2.0 V | 30 | - | - | - | Ω |
| | | $I_{SW}$ = 10 mA; $V_{CC}$ = 3.0 V to 3.6 V | 20 | 50 | 65 | 90 | Ω |
| | | $I_{SW}$ = 10 mA; $V_{CC}$ = 4.5 V to 5.5 V | 15 | 22 | 26 | 40 | Ω |
| | | $V_I$ = $V_{CC}$; see Figure 6 | | | | | |
| | | $I_{SW}$ = 1.0 mA; $V_{CC}$ = 2.0 V | 28 | - | - | - | Ω |
| | | $I_{SW}$ = 10 mA; $V_{CC}$ = 3.0 V to 3.6 V | 18 | 50 | 65 | 90 | Ω |
| | | $I_{SW}$ = 10 mA; $V_{CC}$ = 4.5 V to 5.5 V | 13 | 22 | 26 | 40 | Ω |

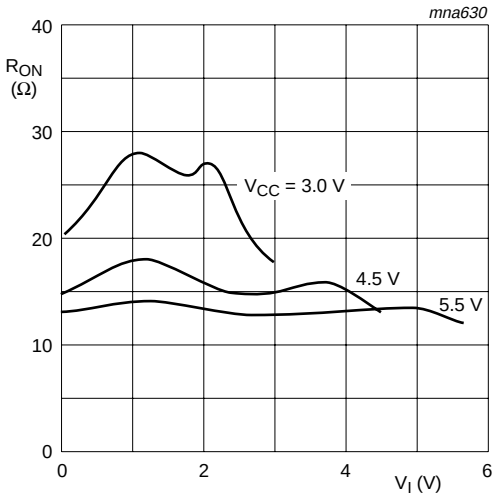
[1] At supply voltages approaching 2 V, the analog switch ON resistance becomes extremely non-linear. Therefore it is recommended that these devices be used to transmit digital signals only, when using this supply voltage.

## 10.3 ON resistance test circuit and graphs




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

**Fig 6. Test circuit for measuring ON resistance**




$T_{amb}$ = 25 °C.

**Fig 7. Typical ON resistance as a function of input voltage**

## 11. Dynamic characteristics

**Table 9. Dynamic characteristics**

*Voltages are referenced to GND (ground = 0 V);* $C_L$ = 50 pF; unless otherwise specified; *For test circuit see Figure 10.*

| Symbol | Parameter | Conditions | | 25 °C | | –40 °C to +85 °C | –40 °C to +125 °C | Unit |
|---|---|---|---|---|---|---|---|---|
| | | | | Typ[1] | max | Max | Max | |
| **74AHC1G66** | | | | | | | | |
| $t_{pd}$ | propagation delay | Y to Z or Z to Y; see Figure 8 | [2] | | | | | |
| | | $V_{CC}$ = 2.0 V | | 2.2 | 5.0 | 6.0 | 7.0 | ns |
| | | $V_{CC}$ = 3.0 V to 3.6 V | | 1.0 | 2.0 | 3.0 | 4.0 | ns |
| | | $V_{CC}$ = 4.5 V to 5.5 V | | 0.6 | 1.0 | 2.0 | 3.0 | ns |
| $t_{en}$ | enable time | E to Y or Z; see Figure 9 | [2] | | | | | |
| | | $V_{CC}$ = 2.0 V; $C_L$ = 15 pF | | 7.0 | 25.0 | 33.0 | 40.0 | ns |
| | | $V_{CC}$ = 2.0 V | | 11.0 | 35.0 | 46.0 | 57.0 | ns |
| | | $V_{CC}$ = 3.0 V to 3.6 V; $C_L$ = 15 pF | | 4.0 | 11.0 | 14.0 | 18.0 | ns |
| | | $V_{CC}$ = 3.0 V to 3.6 V | | 5.8 | 15.0 | 20.0 | 25.0 | ns |
| | | $V_{CC}$ = 4.5 V to 5.5 V; $C_L$ = 15 pF | | 3.0 | 8.0 | 10.0 | 13.0 | ns |
| | | $V_{CC}$ = 4.5 V to 5.5 V | | 4.0 | 11.0 | 13.0 | 17.0 | ns |
| $t_{dis}$ | disable time | E to Y or Z; see Figure 9 | [2] | | | | | |
| | | $V_{CC}$ = 2.0 V; $C_L$ = 15 pF | | 9.0 | 25.0 | 33.0 | 40.0 | ns |
| | | $V_{CC}$ = 2.0 V | | 13.0 | 35.0 | 46.0 | 57.0 | ns |
| | | $V_{CC}$ = 3.0 V to 3.6 V; $C_L$ = 15 pF | | 6.0 | 11.0 | 14.0 | 18.0 | ns |
| | | $V_{CC}$ = 3.0 V to 3.6 V | | 8.4 | 15.0 | 20.0 | 25.0 | ns |
| | | $V_{CC}$ = 4.5 V to 5.5 V; $C_L$ = 15 pF | | 5.0 | 8.0 | 10.0 | 13.0 | ns |
| | | $V_{CC}$ = 4.5 V to 5.5 V | | 6.1 | 11.0 | 13.0 | 17.0 | ns |
| $C_{PD}$ | power dissipation capacitance | $V_I$ = GND to $V_{CC}$ | [3] | 13 | - | - | - | pF |
| **74AHCT1G66** | | | | | | | | |
| $t_{pd}$ | propagation delay | Y to Z or Z to Y; see Figure 8 | [2] | | | | | |
| | | $V_{CC}$ = 4.5 V to 5.5 V | | 0.7 | 1.0 | 2.0 | 3.0 | ns |
| $t_{en}$ | enable time | E to Y or Z; see Figure 9 | [2] | | | | | |
| | | $V_{CC}$ = 4.5 V to 5.5 V; $C_L$ = 15 pF | | 3.0 | 7.0 | 10.0 | 13.0 | ns |
| | | $V_{CC}$ = 4.5 V to 5.5 V | | 4.7 | 10.0 | 13.0 | 17.0 | ns |
| $t_{dis}$ | disable time | E to Y or Z; see Figure 9 | [2] | | | | | |
| | | $V_{CC}$ = 4.5 V to 5.5 V; $C_L$ = 15 pF | | 5.0 | 8.0 | 10.0 | 13.0 | ns |
| | | $V_{CC}$ = 4.5 V to 5.5 V | | 6.5 | 11.0 | 13.0 | 17.0 | ns |

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

*Voltages are referenced to GND (ground = 0 V);* $C_L$ = 50 pF; unless otherwise specified; *For test circuit see Figure 10.*

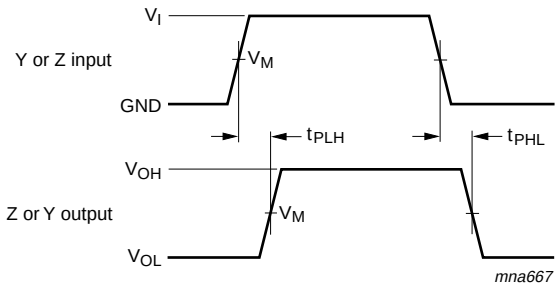
| Symbol | Parameter | Conditions | | 25 °C | | –40 °C to +85 °C | –40 °C to +125 °C | Unit |
|---|---|---|---|---|---|---|---|---|
| | | | | Typ[1] | max | Max | Max | |
| $C_{PD}$ | power dissipation capacitance | $V_I$ = GND to $V_{CC}$ | [3] | 15 | - | - | - | pF |

[1] All typical values are measured at $V_{CC}$ = 2.0 V, $V_{CC}$ = 3.3 V, $V_{CC}$ = 5.0 V and $T_{amb}$ = 25 °C.

[2] $t_{pd}$ is the same as $t_{PLH}$ and $t_{PHL}$.
$t_{en}$ is the same as $t_{PZL}$ and $t_{PZH}$.
$t_{dis}$ is the same as $t_{PLZ}$ and $t_{PHZ}$.

[3] $C_{PD}$ is used to determine the dynamic power dissipation $P_D$ (µW).
$P_D = C_{PD} \times V_{CC}^2 \times f_i + \Sigma ((C_L \times C_{SW}) \times V_{CC}^2 \times f_o)$ where:
$f_i$ = input frequency in MHz;
$f_o$ = output frequency in MHz;
$C_L$ = output load capacitance in pF;
$C_{SW}$ = maximum switch capacitance in pF (see Table 7);
$V_{CC}$ = supply voltage in Volt;
$\Sigma ((C_L \times C_{SW}) \times V_{CC}^2 \times f_o)$ = sum of outputs.

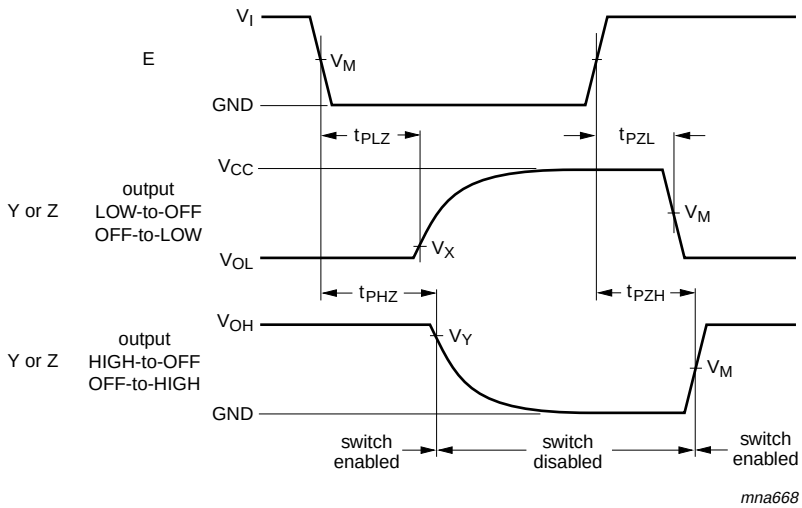
## 11.1 Waveforms and test circuit




Measurement points are given in Table 10.

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

**Fig 8. Input (Y or Z) to output (Z or Y) propagation delays**



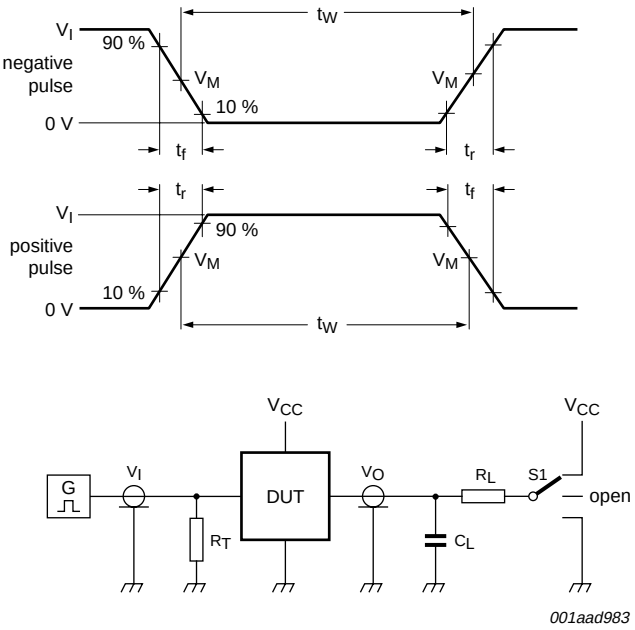

Measurement points are given in Table 10.

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

**Fig 9. Enable and disable times**

**Table 10. Measurement points**

| Type | Input | Output | | |
|---|---|---|---|---|
| | $V_M$ | $V_M$ | $V_X$ | $V_Y$ |
| 74AHC1G66 | $0.5V_{CC}$ | $0.5V_{CC}$ | $V_{OL}$ + 0.3 V | $V_{OH}$ − 0.3 V |
| 74AHCT1G66 | 1.5 V | 1.5 V | $V_{OL}$ + 0.3 V | $V_{OH}$ − 0.3 V |




Test data is given in Table 11.

Definitions for 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.

S1 = Test selection switch.

**Fig 10. Test circuit for measuring switching times**

**Table 11. Test data**

| Type | Input | | Load | | S1 position | | |
|---|---|---|---|---|---|---|---|
| | $V_I$ | $t_r$, $t_f$ | $C_L$ | $R_L$ | $t_{PHL}$, $t_{PLH}$ | $t_{PZH}$, $t_{PHZ}$ | $t_{PZL}$, $t_{PLZ}$ |
| 74AHC1G66 | GND to $V_{CC}$ | 3 ns | 15 pF, 50 pF | 1 kΩ | open | GND | $V_{CC}$ |
| 74AHCT1G66 | GND to 3 V | 3 ns | 15 pF, 50 pF | 1 kΩ | open | GND | $V_{CC}$ |

## 11.2 Additional dynamic characteristics

**Table 12. Additional dynamic characteristics for 74AHC1G66 and 74AHCT1G66**

*GND = 0 V; $t_r = t_f$ = 3.0 ns; $C_L$ = 50 pF; unless otherwise specified. All typical values are measured at $T_{amb}$ = 25 °C.*

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| THD | total harmonic distortion | $f_i$ = 1 kHz; $R_L$ = 10 kΩ; see Figure 11 | | | | |
| | | $V_{CC}$ = 3.0 V to 3.6 V | - | 0.025 | - | % |
| | | $V_{CC}$ = 4.5 V to 5.5 V | - | 0.015 | - | % |
| | | $f_i$ = 10 kHz; $R_L$ = 10 kΩ; see Figure 11 | | | | |
| | | $V_{CC}$ = 3.0 V to 3.6 V; $V_I$ = 2.5 V | - | 0.025 | - | % |
| | | $V_{CC}$ = 4.5 V to 5.5 V; $V_I$ = 4.0 V | - | 0.015 | - | % |

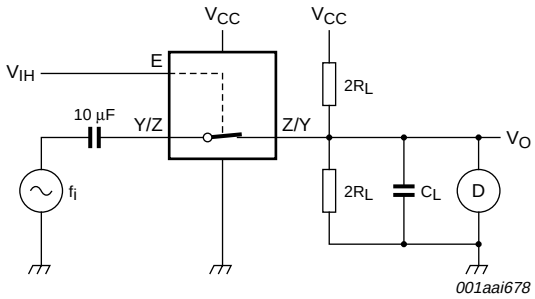
**Table 12. Additional dynamic characteristics for 74AHC1G66 and 74AHCT1G66** *…continued*

*GND = 0 V; $t_r = t_f$ = 3.0 ns; $C_L$ = 50 pF; unless otherwise specified. All typical values are measured at $T_{amb}$ = 25 °C.*

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| $f_{(-3dB)}$ | −3 dB frequency response | $R_L$ = 50 Ω; $C_L$ = 10 pF; see Figure 12 and 13 | | | | |
| | | $V_{CC}$ = 3.0 V to 3.6 V | - | 230 | - | MHz |
| | | $V_{CC}$ = 4.5 V to 5.5 V | - | 280 | - | MHz |
| $\alpha_{iso}$ | isolation (OFF-state) | $R_L$ = 600 Ω; $f_i$ = 1 MHz; see Figure 14 [1] | | | | |
| | | $V_{CC}$ = 3.0 V to 3.6 V; $V_I$ = 2.5 V | - | −50 | - | dB |
| | | $V_{CC}$ = 4.5 V to 5.5 V; $V_I$ = 4.0 V | - | −50 | - | dB |

[1] Adjust input voltage $V_I$ to 0 dBm level (0 dBm =1 mW into 50 Ω).

## 11.3 Test circuits and graphs

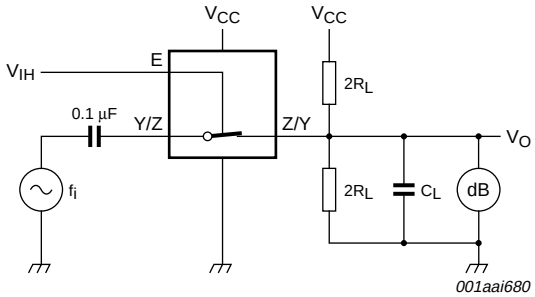



**Test conditions:**

$V_{CC}$ = 3.0 V to 3.6 V; $V_I$ = 2.5 V (p-p).

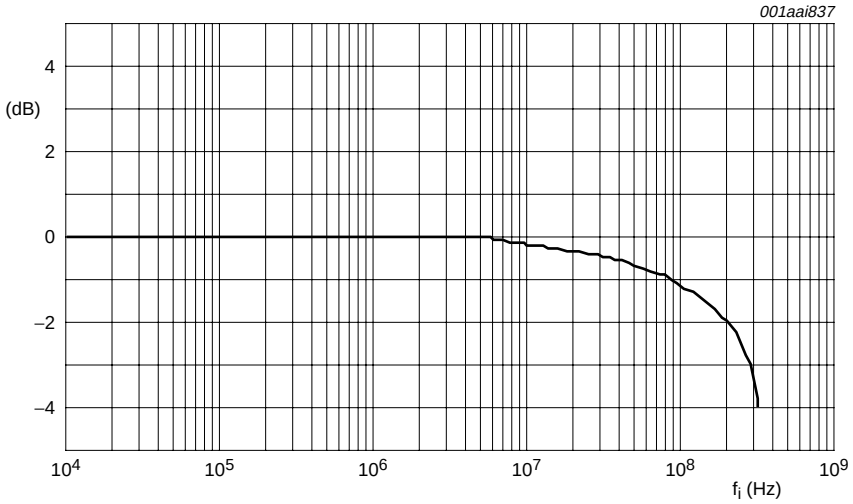
$V_{CC}$ = 4.5 V to 5.5 V; $V_I$ = 4.0 V (p-p).

**Fig 11. Test circuit for measuring total harmonic distortion**



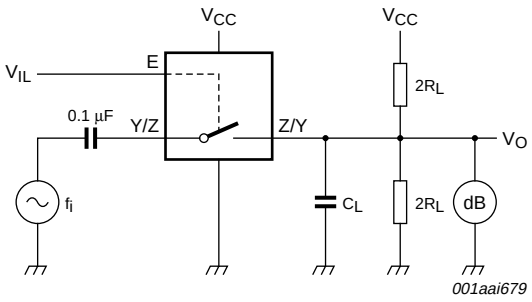

With $f_i$ = 1 MHz adjust the switch input voltage for a 0 dBm level at the switch output, (0 dBm = 1 mW into 50 Ω). Then increase the input $f_i$ frequency until the dB meter reads −3 dB.

**Fig 12. Test circuit for measuring the −3 dB frequency response**




Test conditions: $V_{CC}$ = 4.5 V; GND = 0 V; $R_L$ = 50 Ω; $R_{SOURCE}$ = 1 kΩ.

**Fig 13. Typical −3 dB frequency response**

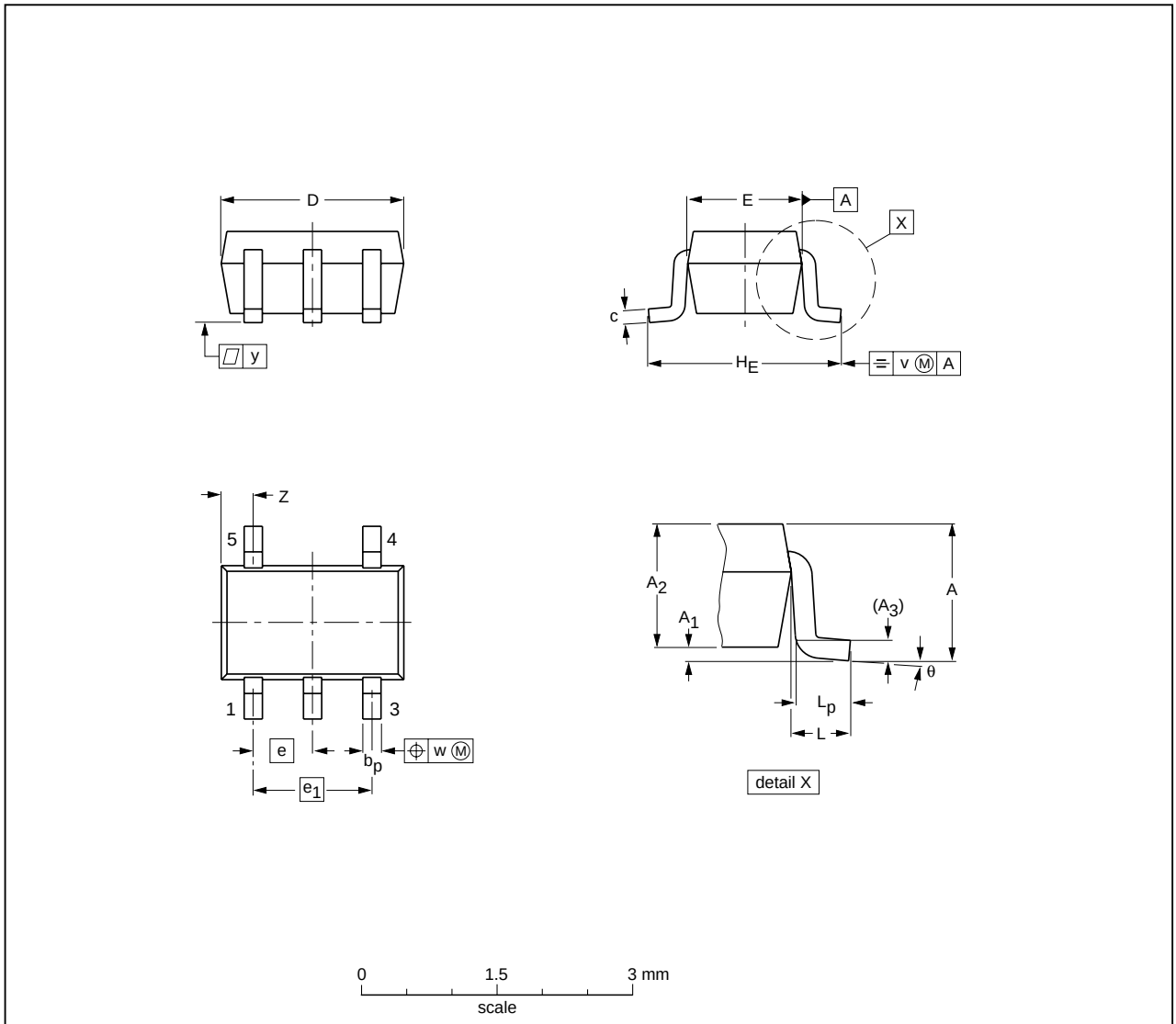



Adjust the switch input voltage for a 0 dBm level (0 dBm = 1 mW into 600 Ω).

**Fig 14. Test circuit for measuring isolation (OFF-state)**

## 12. Package outline

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




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

| UNIT | A max. | $A_1$ | $A_2$ | $A_3$ | $b_p$ | c | $D^{(1)}$ | $E^{(1)}$ | e | $e_1$ | $H_E$ | L | $L_p$ | v | w | y | $Z^{(1)}$ | θ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | 1.1 | 0.1<br>0 | 1.0<br>0.8 | 0.15 | 0.30<br>0.15 | 0.25<br>0.08 | 2.25<br>1.85 | 1.35<br>1.15 | 0.65 | 1.3 | 2.25<br>2.0 | 0.425 | 0.46<br>0.21 | 0.3 | 0.1 | 0.1 | 0.60<br>0.15 | 7°<br>0° |

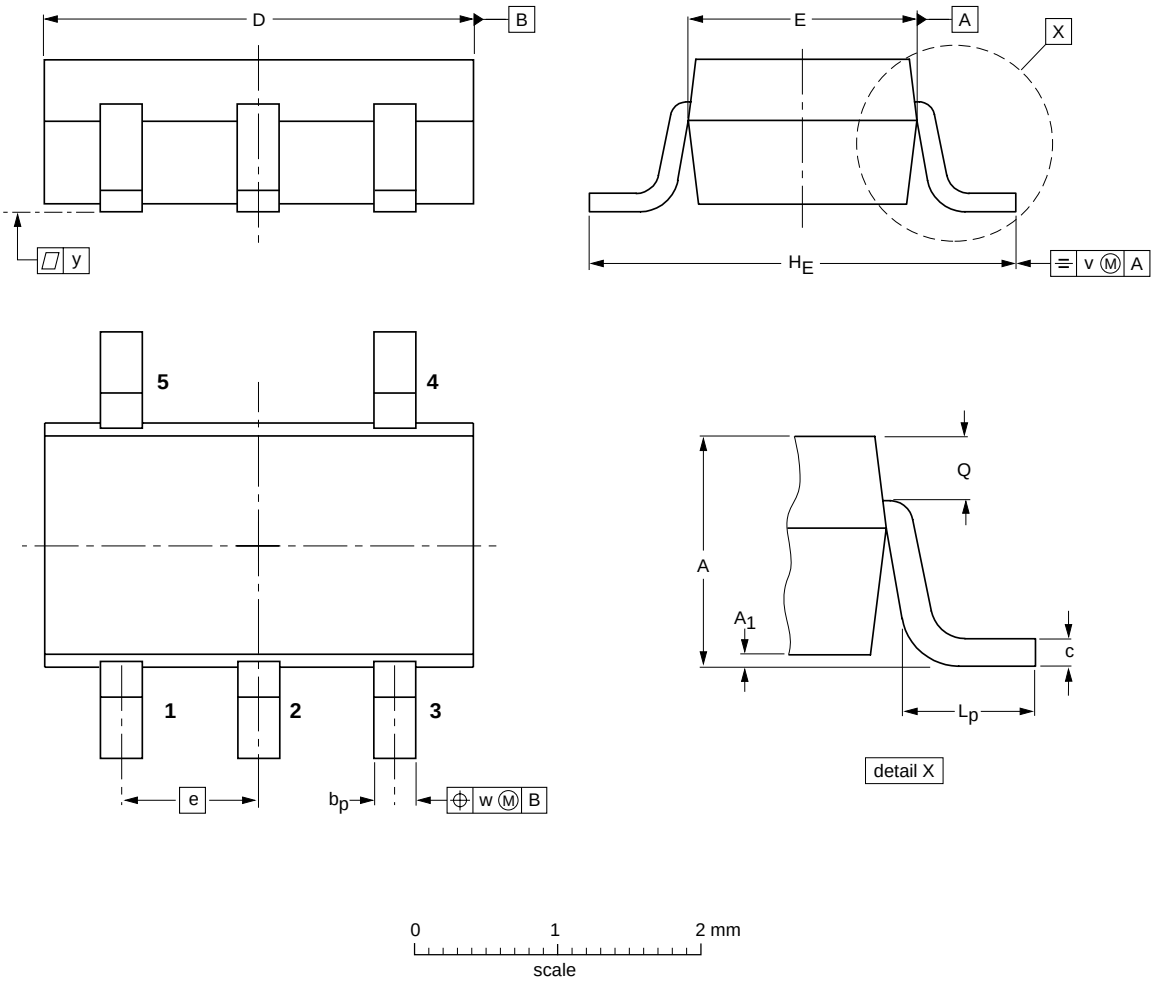
**Note**

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

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|---|---|---|---|---|---|---|
| | IEC | JEDEC | JEITA | | | |
| SOT353-1 | | MO-203 | SC-88A | | | ~~00-09-01~~<br>03-02-19 |

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

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




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

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

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

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

## 13. Abbreviations

**Table 13. Abbreviations**

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

## 14. Revision history

**Table 14. Revision history**

| Document ID | Release date | Data sheet status | Change notice | Supersedes |
|---|---|---|---|---|
| 74AHC_AHCT1G66_4 | 20081218 | Product data sheet | - | 74AHC_AHCT1G66_3 |
| Modifications: | • The format of this data sheet has been redesigned to comply with the new identity guidelines of NXP Semiconductors.<br>• Legal texts have been adapted to the new company name where appropriate.<br>• Package SOT353 changed to SOT353-1 in Table 1 and Figure 15.<br>• Quick Reference Data and Soldering sections removed.<br>• Section 2 “Features” updated. | | | |
| 74AHC_AHCT1G66_3 | 20020606 | Product specification | - | 74AHC_AHCT1G66_2 |
| 74AHC_AHCT1G66_2 | 20020215 | Product specification | - | 74AHC_AHCT1G66_1 |
| 74AHC_AHCT1G66_1 | 20010129 | Product specification | - | - |

# 15. Legal information

## 15.1 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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**Document identifier: 74AHC_AHCT1G66_4**