AS1746

Product Brief

0.5/0.6Ω, Low-Voltage, Dual SPDT Analog Switch

1 General Description

The AS1746 is a low on-resistance (R_{ON}), low-voltage, dual-single-pole/double-throw (SPDT) analog switch designed to operate from a single +1.8 to +5.5V supply.

The device features a 0.5Ω (max) R_{ON} for normally closed (NC) switches and a 0.6Ω (max) R_{ON} for normally open (NO) switches using a +2.7V supply.

The AS1746 features break-before-make switching (2ns) with t_{ON} = 50ns and t_{OFF} = 30ns (using a +2.7V supply).

The digital logic inputs are 1.8V logic-compatible with +2.7 to +3.3V supplies.

The AS1746 is available in a TDFN-10 (3x3mm) package and a WL-CSP-10 package.

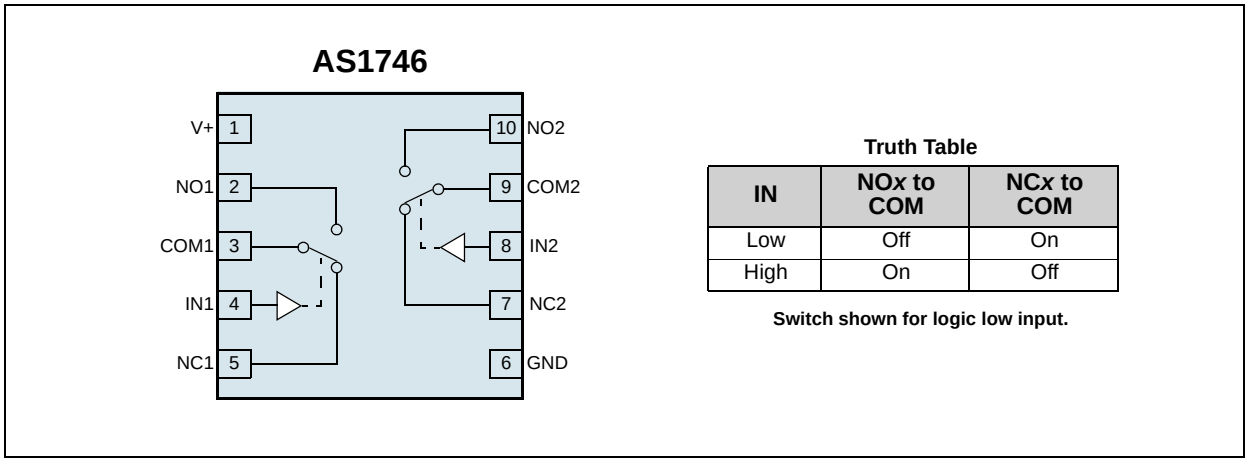
2 Key Features

- Single Supply Operation: +1.8 to +5.5V
- Normally Closed Switch R_{ON}: 0.45Ω (+2.7V Supply)
- Normally Open Switch R_{ON}: 0.55Ω (+2.7V Supply)
- R_{ON} Matching Between Channels: 0.06Ω
- R_{ON} Flatness Over Signal Range: 0.15Ω
- Supply Current: 50nA
- Rail-to-Rail Signal Handling
- 1.8V Logic Compatibility
- Low Crosstalk: -60dB (100kHz)
- High Off-Isolation: -64dB (100kHz)
- Total Harmonic Distortion: 0.025%
- Ultra-Low Leakage Currents: 1nA (@ T_{AMB} = +25ºC)
- Package Types:
  - TDFN-10 (3x3mm)
  - WL-CSP-10

3 Applications

The device is ideal for audio headsets, MP3 players, power routing switches, relay replacements, audio and video signal routing, communications circuits, PCMCIA cards, mobile phones, MODEMs, and any battery-operated equipment.

Figure 1. Block Diagram – TDFN-10 (3x3mm)



Truth Table

IN	NOx to COM	NCx to COM
Low	Off	On
High	On	Off

Switch shown for logic low input.

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