AS1744, AS1745

High-Speed, Low-Voltage, Dual, Single-Supply, 4Ω, SPDT Analog Switches

Product Brief

1 General Description

The AS1744/AS1745 are high-speed, low-voltage, dual single-pole/double-throw (SPDT) analog switches.

Fast switching speeds, low ON-resistance, and low power-consumption make these devices ideal for single-cell battery powered applications.

These highly-reliable devices operate from a +1.8 to +5.5V supply, are differentiated by inverted logic, and support break-before-make switching.

With low ON-resistance (R_{ON}), R_{ON} matching, and R_{ON} flatness, the devices can accurately switch signals for sample and hold circuits, digital filters, and op-amp gain switching networks.

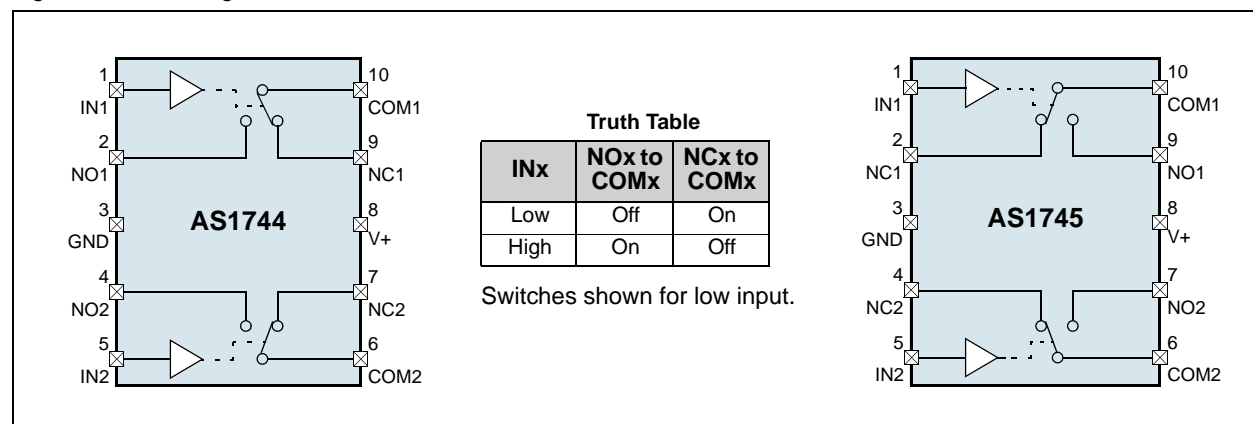The devices are available in a 10-pin MSOP package and a 10-pin TDFN package.

2 Key Features

- ON-Resistance:
  - 4Ω (+5V supply)
  - 5.5Ω (+3V supply)
- R_{ON} Matching: 0.2Ω (+5V supply)
- R_{ON} Flatness: 1Ω (+5V supply)
- Supply Voltage Range: +1.8 to +5.5V
- 1.8V Operation:
  - 9.5Ω ON-Resistance over Temperature
  - 38ns Turn On Time
  - 12ns Turn Off Time
- Current-Handling: 100mA Continuous
- Break-Before-Make Switching
- Rail-to-Rail Signal Handling
- Crosstalk: -90dB at 1MHz
- Off-Isolation: -85dB at 1MHz
- Total Harmonic Distortion: 0.1%
- Operating Temperature Range: -40 to +85ºC
- Package Types:
  - 10-pin MSOP
  - 10-pin TDFN

3 Applications

The devices are ideal for use in power routing systems, cordless and mobile phones, MP3 players, CD and DVD players, PDAs, handheld computers, digital cameras, and any other application where high-speed signal switching is required.

Figure 1. Block Diagrams

Truth Table

INx	NOx to COMx	NCx to COMx
Low	Off	On
High	On	Off

Switches shown for low input.

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