

H11L1 – Schmitt-trigger optocoupler (MIDI in)

onsemi · DIP-6 · opto-isolator · ~\$0.5

WHAT IT IS

An LED and a light-sensor in one sealed package – signal crosses as LIGHT, so the two sides are electrically isolated. The "Schmitt" output gives clean digital edges. This is the standard MIDI-IN front end: the cable current drives the LED, the MCU reads the clean output.

KEY SPECS (what matters to us)

Built-in Schmitt trigger (clean edges, fast) · ~1 Mbit
Galvanic isolation across the LED↔sensor gap

SIGNALS / PINS WE USE

Pin1/2 = input LED (from DIN-5 via 220 Ω) · Pin4 = V0 (→MCU RX)
Pin5/6 = GND/VCC (logic side)

ELECTRICAL · GOTCHAS

The opto IS the isolation barrier – don't bridge the LED side to logic ground. V0 needs a pull-up. Preferred over the 6N138 (faster + the Schmitt cleans the edges for free).

WHY IT'S IN OUR SYSTEM

The MIDI spec REQUIRES opto-isolation on the input (so connected gear doesn't share grounds). H11L1 is the modern standard choice – its built-in Schmitt means no extra logic to clean up the MIDI bitstream.