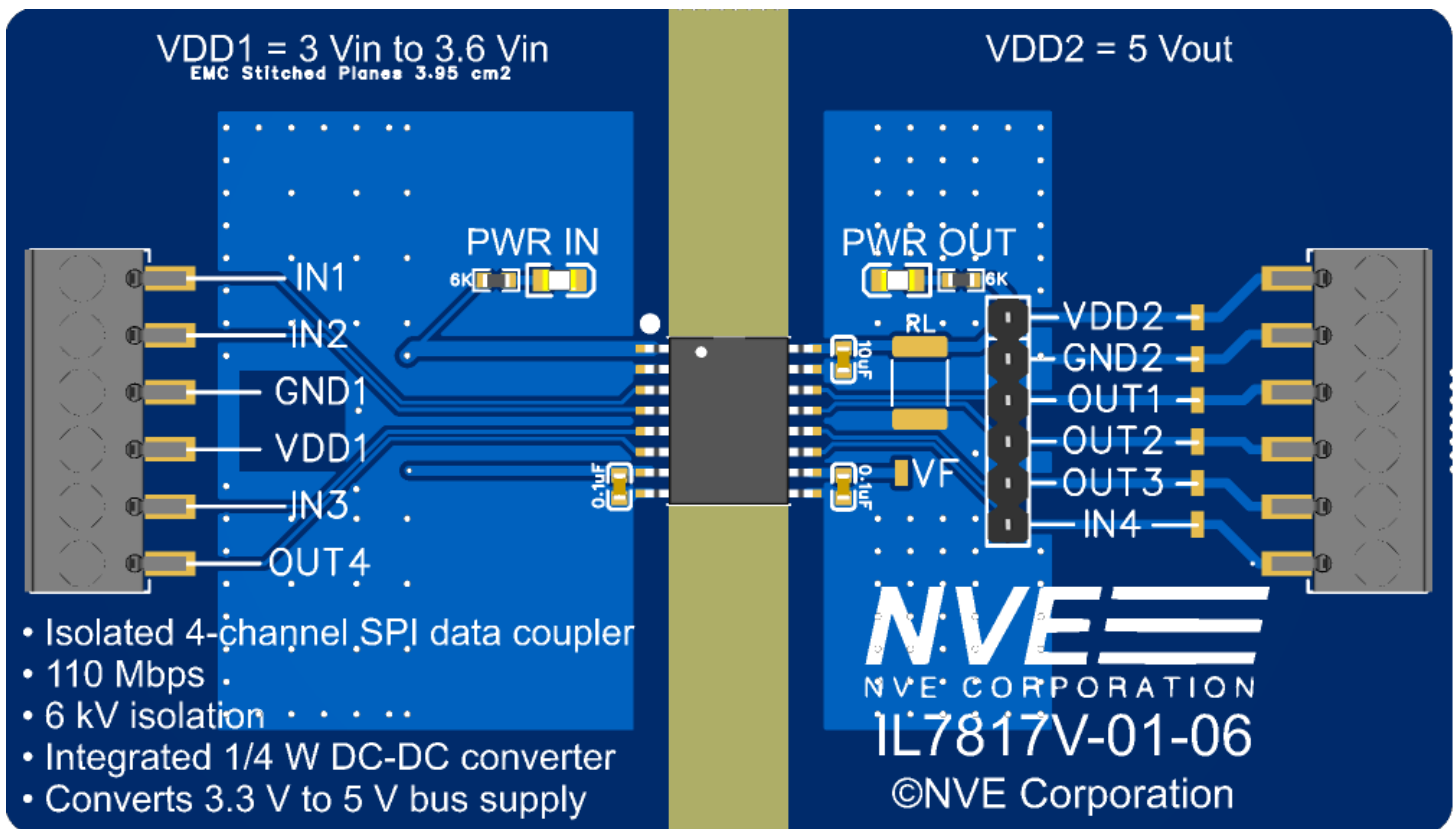


IL761xV / IL781xV High-Speed Data Couplers with Integrated DC-to-DC Converter Evaluation Boards



- Isolated 4-channel SPI data coupler
- 110 Mbps
- 6 kV isolation
- Integrated 1/4 W DC-DC converter
- Converts 3.3 V to 5 V bus supply



About These Evaluation Boards

These 2 x 3.5-inch (50 x 90 mm) boards contain your choice of an isolated data coupler with an integrated DC-to-DC convertor, bypass capacitors as recommended, screw terminals, provisions for header pins, and LEDs that show the DC-to-DC convertor is operating. The boards follow best practices including 2s2p with vias for optimal thermal performance, and stitched ground planes to provide CISPR 32-compliant EMC mitigation with no external components.

If additional EMC mitigation is required, there are footprints for additional components on the bottom of the board. Cuttable traces normally bypass this circuitry. Additional bypass capacitors on the top of the board can be populated to further mitigate any high-frequency emissions. There are pads for an optional external stitching capacitor on the top of the board. These pads can be removed if board creepage is critical.

IL761xV / IL781xV isolated data couplers include integrated one-quarter watt DC-to-DC convertors that generate fully-isolated, independent bus supplies from a 3.3-volt controller-side supply. 3.3-volt (IL761xV) and 5-volt (IL781xV) bus supply versions are available. Six different coupler channel configurations are available.

The integrated DC-to-DC convertors require no external regulation. Frequency hopping and shielding reduce EMI, and ferrite beads or other external components are generally not necessary for EMI mitigation.

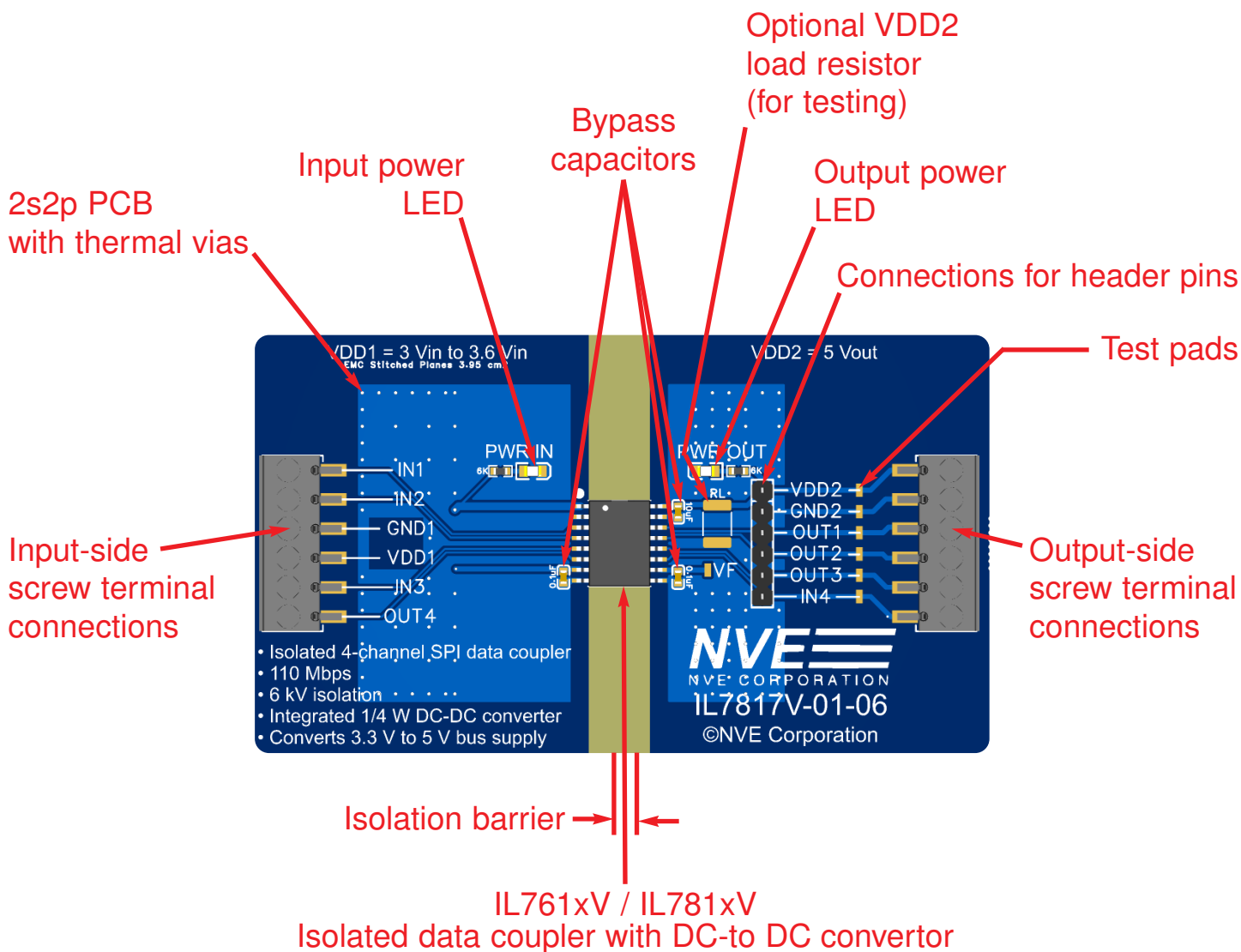
IL46xx / IL48xx Specification Highlights

- 110 Mbps
- Integrated 3.3-to-3.3 V or 3.3-to-5 V DC-DC convertors
- Ultralow output ripple
- 6 kV_{RMS} isolation voltage
- -40 °C to 125 °C temperature range
- IEC 60747-17 (VDE 0884-17) certified; UL1577 registered; CE Mark
- EN 55032 CISPR 32 Class B compliant
- 0.3" True 8TM mm 16-pin SOIC package

Quick Start

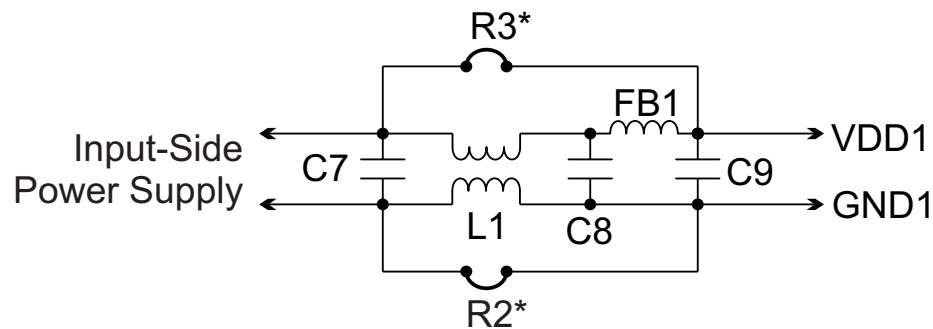
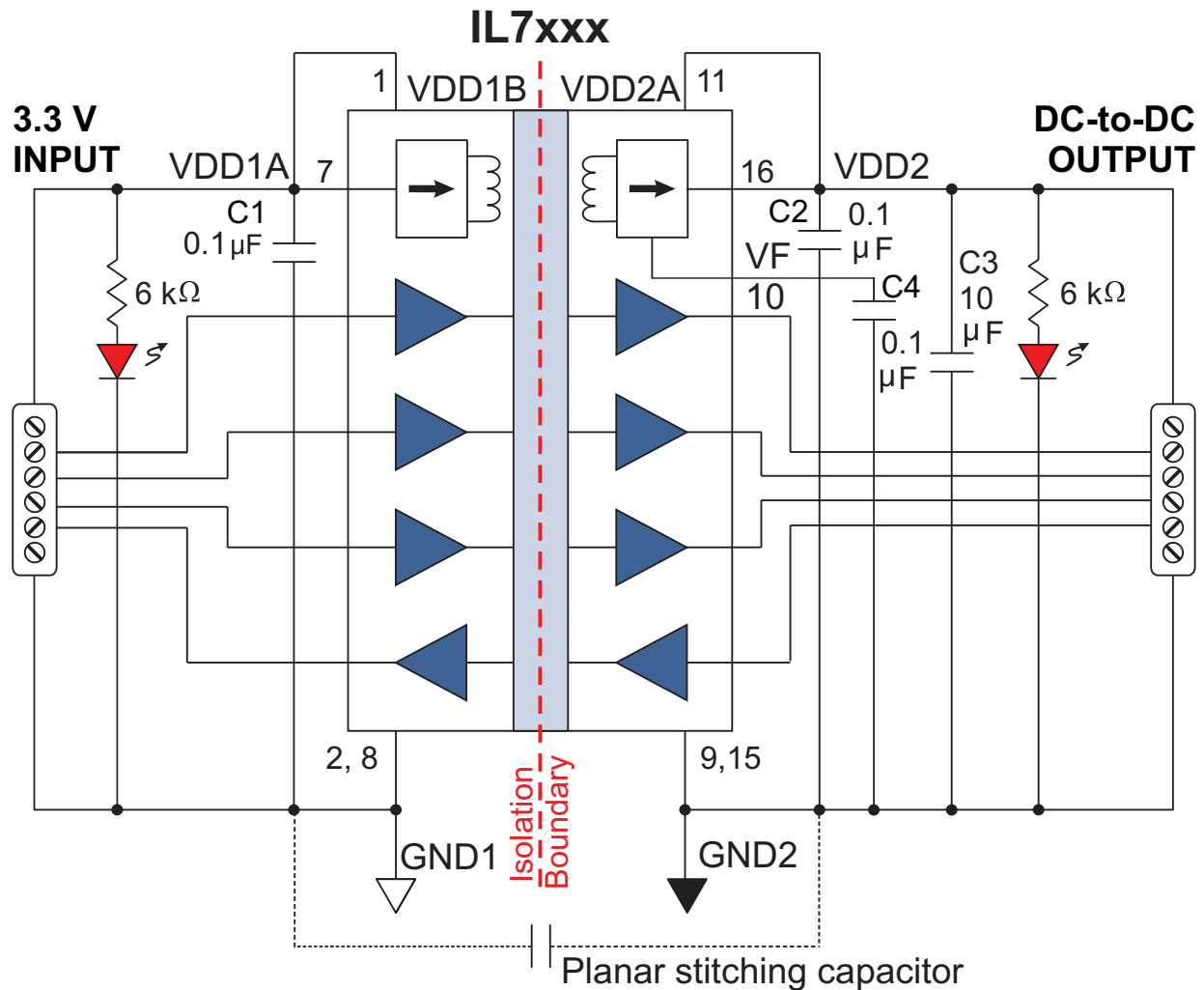
- Connect V_{DD1} to a 3.3 V power supply.
- The two LEDs should indicate input and output power.
- The DC-to-DC convertor output can be checked for voltage, ripple, etc.
- Connect a square-wave signal to the inputs with an amplitude of 2.4 to 3.3 V.
- Verify the outputs.

Evaluation Board Layout and Key Components



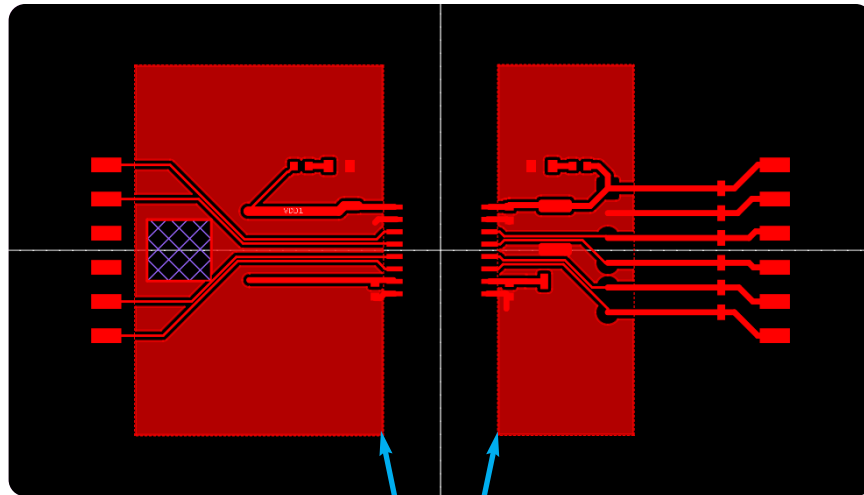
Desig.	Part Number	Mfr.	Description
U1	IL7xxxVE	NVE	Isolator w/3.3V DC-DC Converter, SOIC-WB
C1, C4	CL10B104KB8NNWC	Samsung	0.1 µF 0603 -55 to 125 deg C Capacitor
C3	GRT188D70J106ME13D	Murata	10µF 0603 -55 to 125 deg C Capacitor

Circuit Diagram



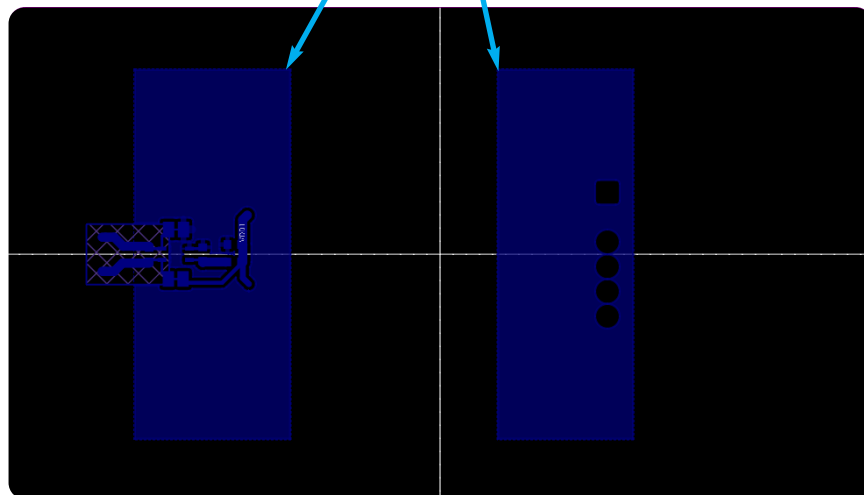
*Cut to use auxiliary EMC circuitry

Evaluation Board Outer Layers



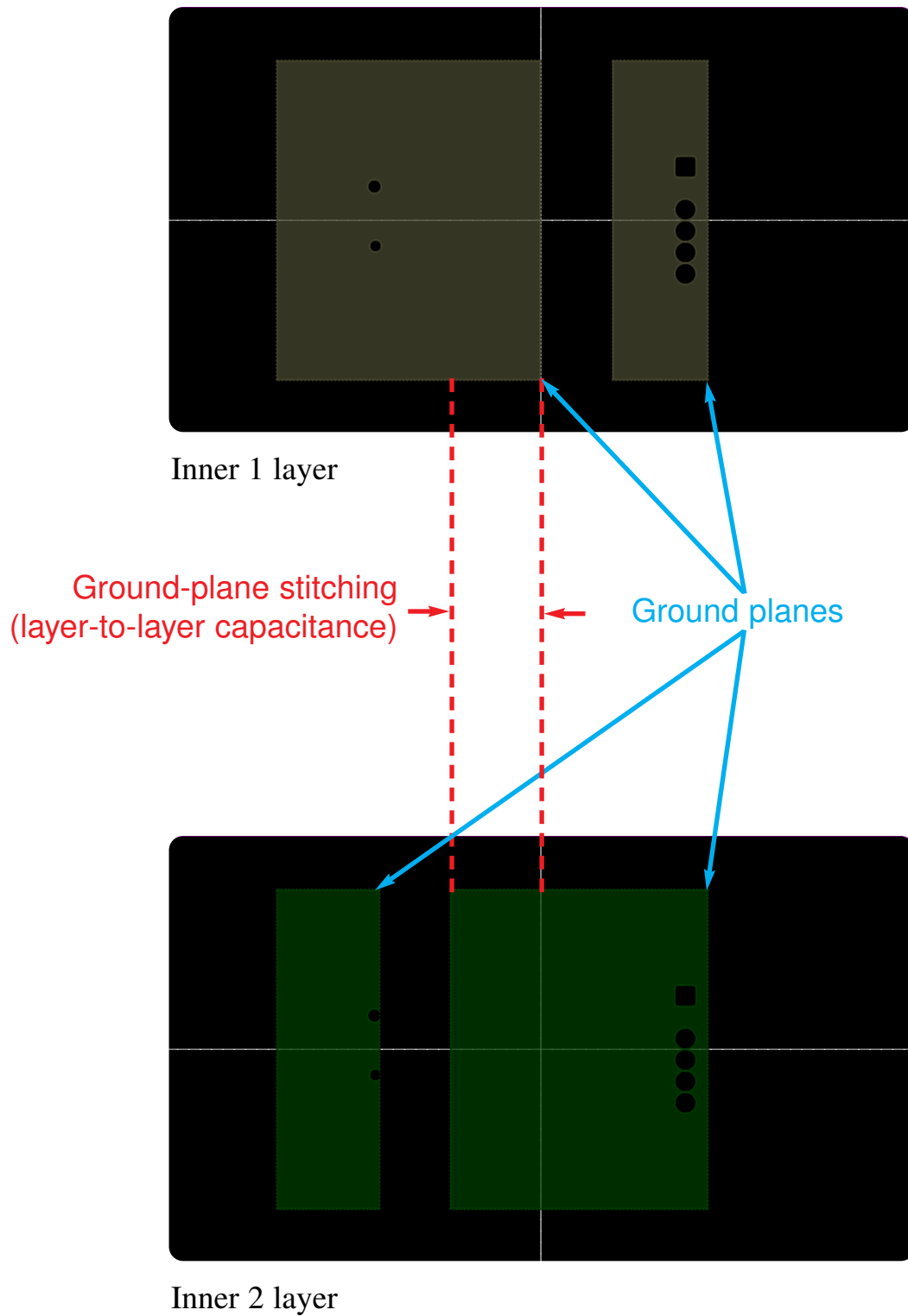
Top layer

Ground planes

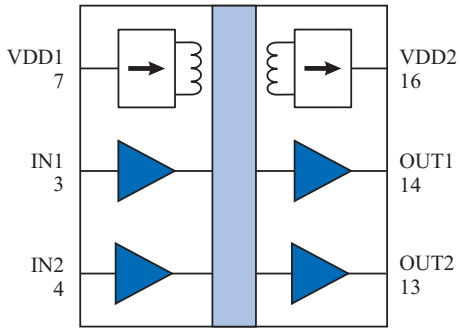


Bottom layer

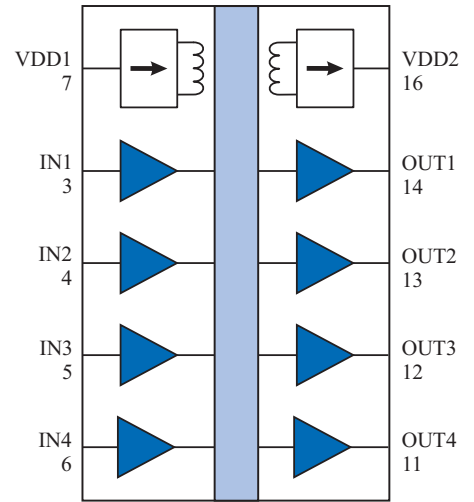
Evaluation Board Inner Layers



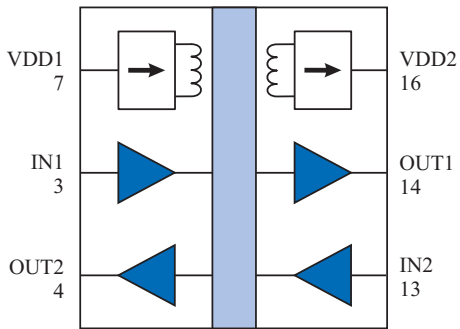
Isolator Channel Configurations and Pinouts



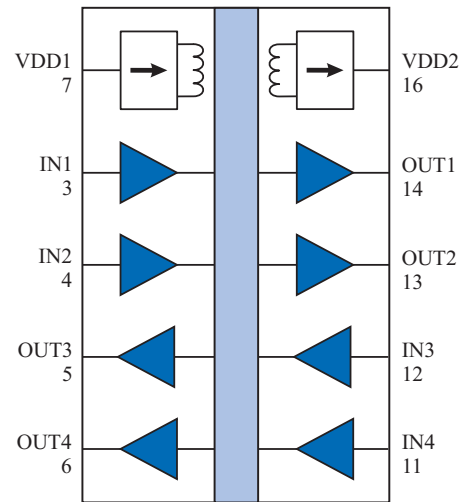
IL7611V / IL7811V



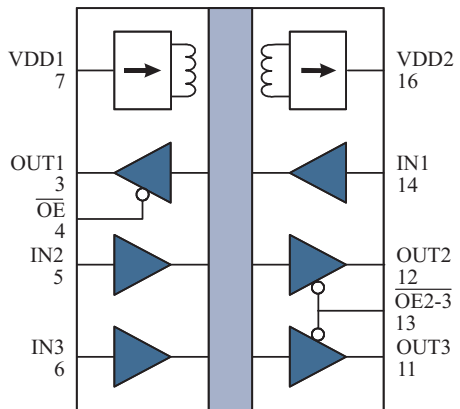
IL7615V / IL7815V



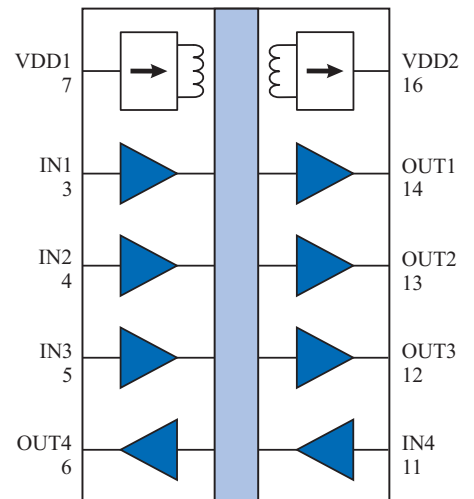
IL7612V / IL7812V



IL7616V / IL7816V



IL7614V / IL7814V



IL7x17

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