SURFACE MOUNT 10BASE-T INTERFACE MODULES

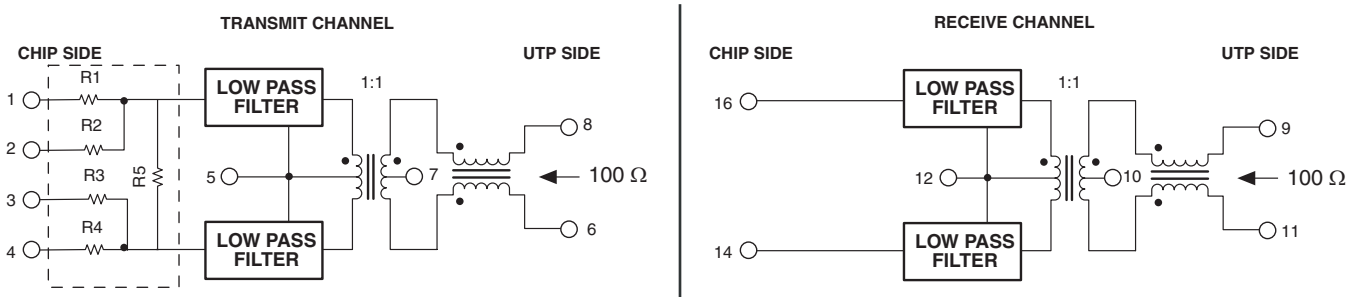
Fully Integrated for Adapter, Hub, and Motherboard Applications

Pulse
A TECHNITROL COMPANY

Resistor Values (Ω)								
Part Number	IC Manufacturer	R1	R2	R3	R4	R5	R6	R7
PE-68025QNL	AMD	TXD (+) = 61.9	TXP (+) = 422	TXD (-) = 61.9	TXP (-) = 422	1.2k	RX (+) = 49.9	RX (-) = 49.9
PE-68026NL	Various	—	—	—	—	—	—	—
PE-68027QNL	National	TXOD (-) = 274	TXO (+) = 66.5	TXO (-) = 66.5	TXOD (+) = 274	806	RX (+) = 49.9	RX (-) = 49.9

Schematic

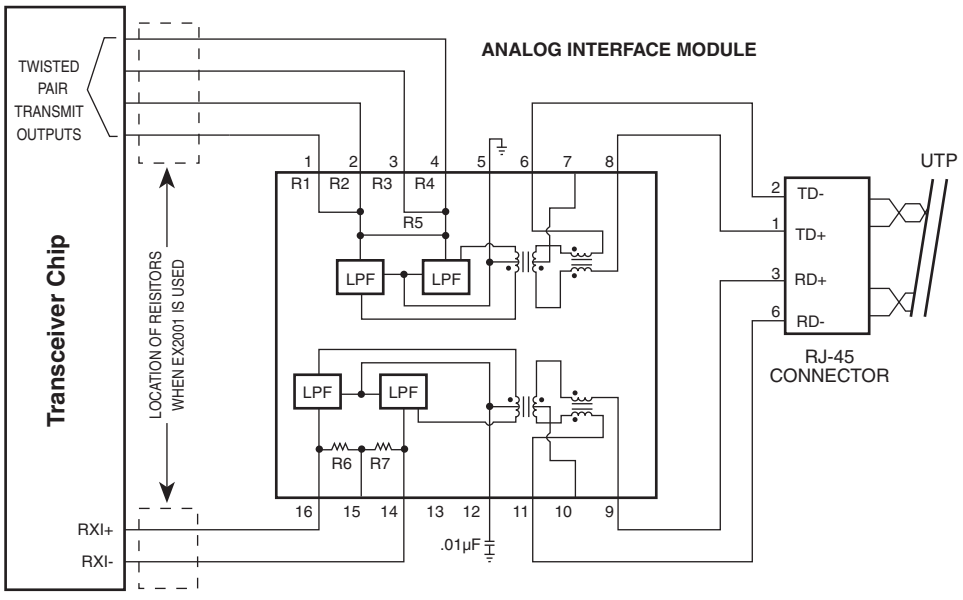
PE-68025QNL, PE-68026NL, PE-68027QNL



NOTE: PE-68026NL does not contain resistors. They are an external configuration.

Typical Application Circuit

PE-68025QNL, PE-68026NL, PE-68027QNL



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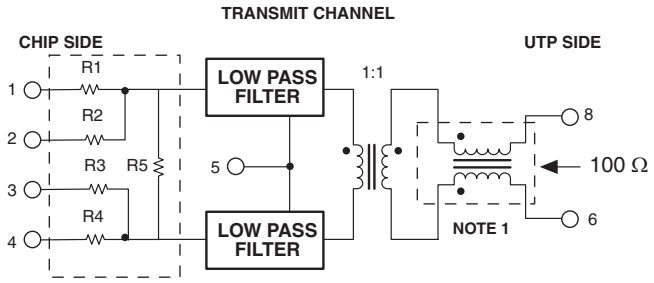
Resistor Values (Ω)

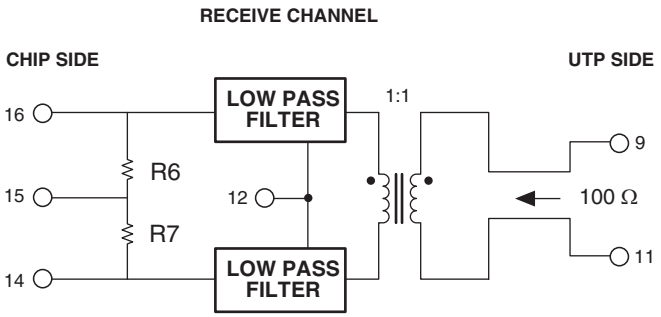
Part Number	IC Manufacturer	R1	R2	R3	R4	R5	R6	R7
E2001QNL	National	348.0	53.6	53.6	348.0	806	49.9	49.9
E2003QNL	AMD	61.9	422.0	61.9	422.0	1,210	49.9	49.9
E2007QNL	Motorola	39.0	—	39	—	—	49.9	49.9

Schematic

E2001QNL, E2003QNL, E2007QNL

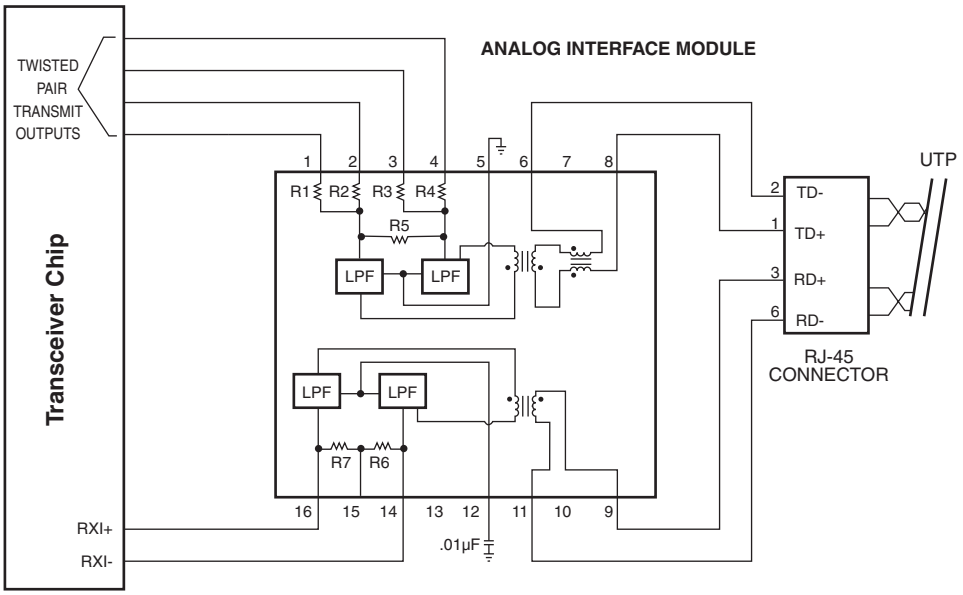


NOTE: Common Mode Choke on transmit channel for E2001QNL and E2003QNL.



Typical Application Circuit

E2001QNL, E2003QNL, E2007QNL

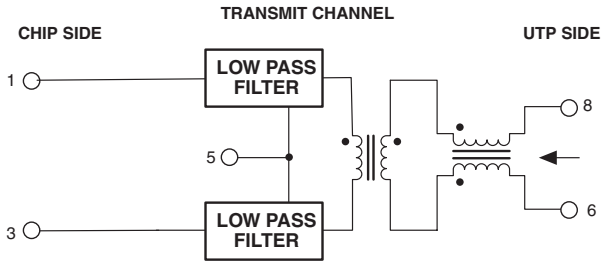


SURFACE MOUNT 10BASE-T INTERFACE MODULES

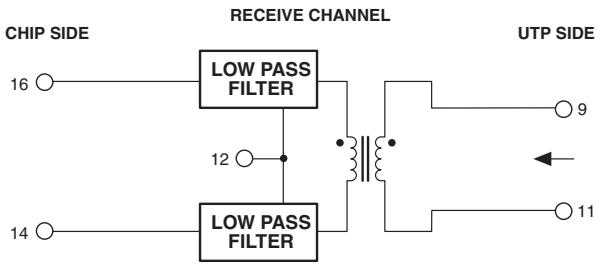
Fully Integrated for Adapter, Hub, and Motherboard Applications

Schematic

E2009QNL, PE-68056NL



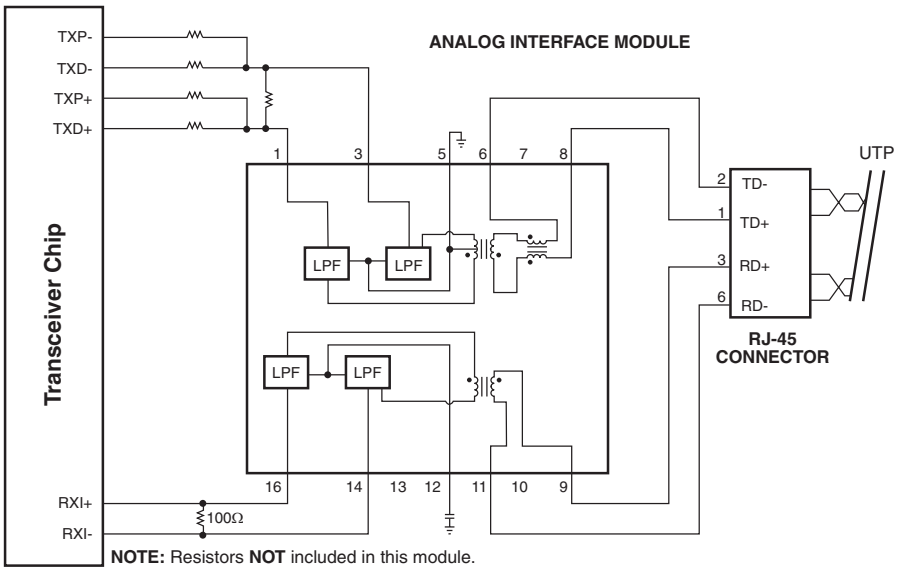
Turns Ratio for Transmit: PE-68056NL is 1:1; E2009QNL is 1:1.414.



NOTE: The PE-68056NL is designed for use with most transceivers requiring a turns ratio of 1:1 on transmit. The E2009QNL is designed for use with DEC and most other transceivers requiring a turns ratio of 1:1.414 on transmit.

Typical Applications Circuit

E2009QNL, PE-68056NL



NOTE: Resistors **NOT** included in this module.

Application Notes

Each module in this application contains low pass filers, isolation transformers, and common mode chokes. These components provide impedance matching, equipment isolation, and EMI suppression to comply with IEEE 802.3 requirements. The E2001QNL, E2003QNL, E2007QNL, PE-68025QNL and PE-68027QNL also provide the necessary data and pre-emphasis resistors recommended by most transceiver manufacturers.

User compliance with FCC/CSPR Class B requirements can be achieved by applying rigorous design guidelines to suppress noise mechanisms. Attention to high frequency signal paths, proper PCB grounding techniques, and component placement are critical. Pins 5 and 12, when grounded, provide noise return paths. For PE-68025QNL, PE-68026NL, and PE-68027QNL, one of these pins (typically pin 12) must be decoupled with a bypass capacitor. The E2001QNL, E2003QNL, E2007QNL, E2009QNL, and PE-68056NL do not require the bypass capacitor, and pins 5 and 12 may be connected directly to ground.

Recommended module orientation with respect to the RJ-45 connector is illustrated in each application circuit. Output pins 6 through 11 should be routed with short, matched traces to the connector for optimum EMI performance.

Surface mount devices manufactured by Pulse are designed to meet all published specifications after exposure to surface mount soldering temperatures. The products in this data sheet are transfer molded or open header in IC-style packaging, making them robust enough to withstand convection and infrared reflow solder temperatures up to 245°C. In addition, compliant leads provide excellent solder-joint reliability with a coplanarity of ±.002" (0,05mm).

For Tape and Reel orders, please add the suffix "T" to the end of the part number (i.e.PE-68025QNL**T**).

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