

# SURFACE MOUNT 10BASE-T INTERFACE MODULES



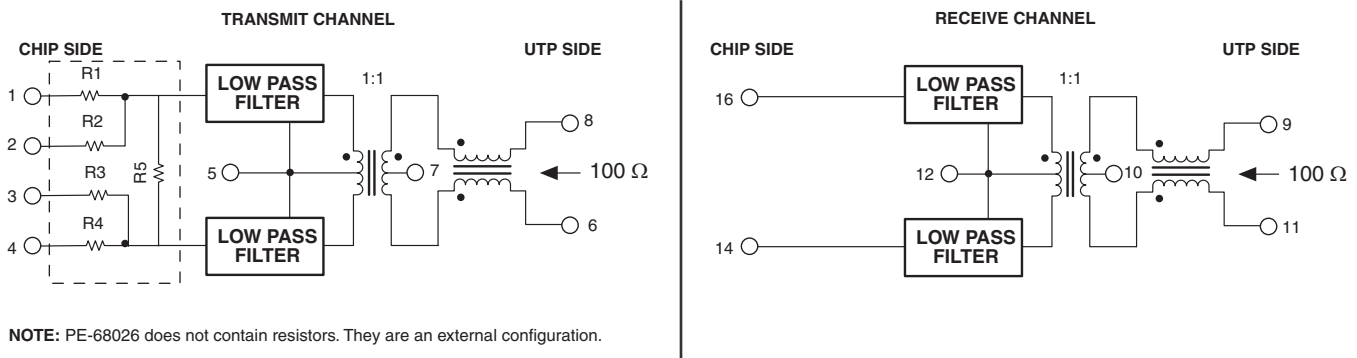
Fully Integrated for Adapter, Hub, and  
Motherboard Applications

## Resistor Values ( $\Omega$ )

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

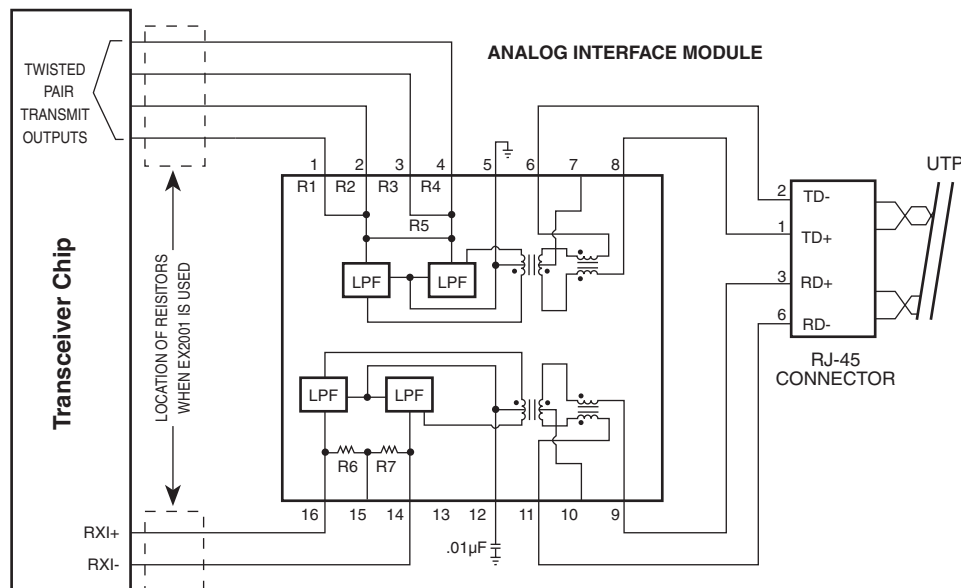
## Schematic

### PE-68025, PE-68026, PE-68027



## Typical Application Circuit

### PE-68025, PE-68026, PE-68027



# SURFACE MOUNT 10BASE-T INTERFACE MODULES



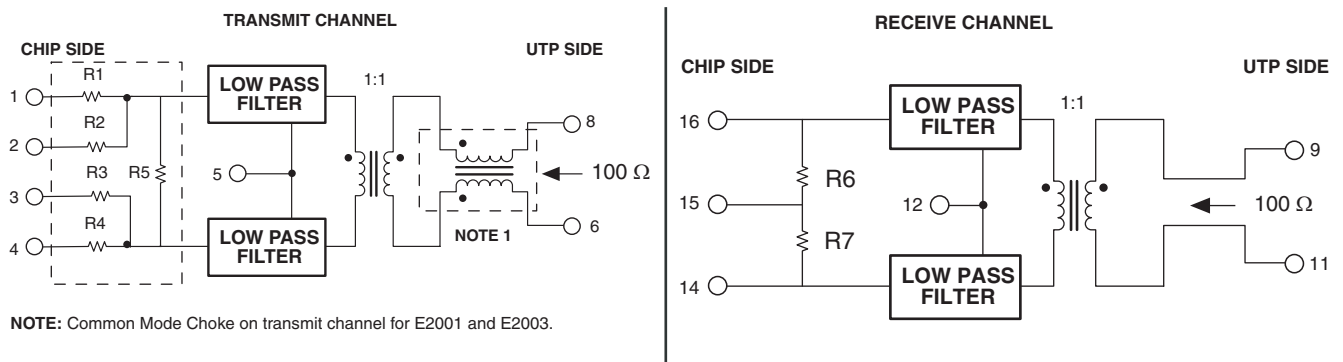
Fully Integrated for Adapter, Hub, and  
Motherboard Applications

## Resistor Values ( $\Omega$ )

Part Number	IC Manufacturer	R1	R2	R3	R4	R5	R6	R7
E2001	National	348.0	53.6	53.6	348.0	806	49.9	49.9
E2003	AMD	61.9	422.0	61.9	422.0	1,210	49.9	49.9
E2007	Motorola	39.0	—	39	—	—	49.9	49.9

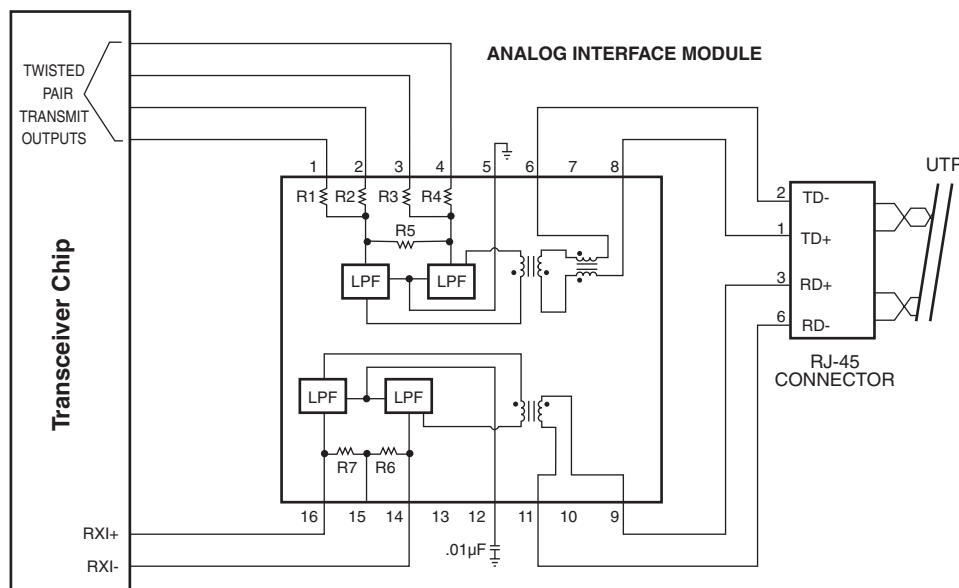
## Schematic

### E2001, E2003, E2007



## Typical Application Circuit

### E2001, E2003, E2007



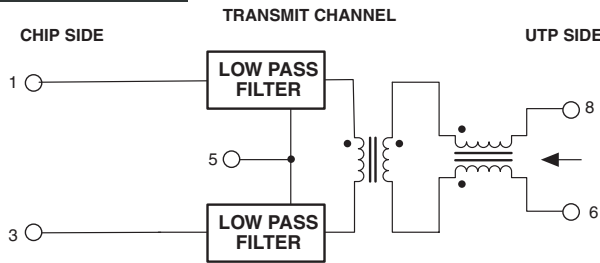
# SURFACE MOUNT 10BASE-T INTERFACE MODULES



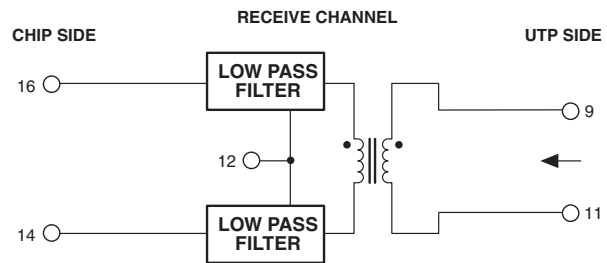
Fully Integrated for Adapter, Hub, and  
Motherboard Applications

## Schematic

E2009, PE-68056



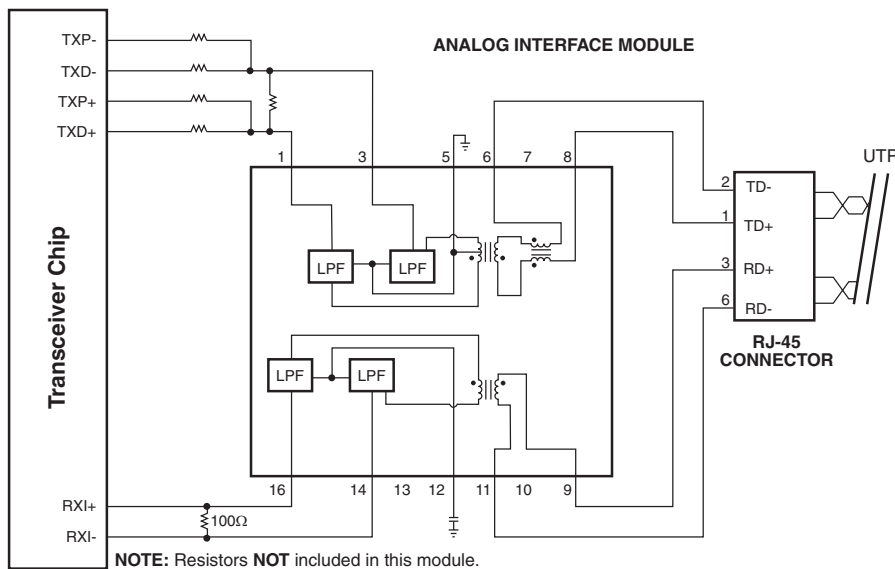
Turns Ratio for Transmit: PE-68056 is 1:1; E2009 is 1:1.414.



**NOTE:** The PE-68056 is designed for use with most transceivers requiring a turns ratio of 1:1 on transmit. The E2009 is designed for use with DEC and most other transceivers requiring a turns ratio of 1:1.414 on transmit.

## Typical Applications Circuit

E2009, PE-68056



## Application Notes

Each module in this application contains low pass filters, isolation transformers, and common mode chokes. These components provide impedance matching, equipment isolation, and EMI suppression to comply with IEEE 802.3 requirements. The E2001, E2003, E2007, PE-68025, and PE-68027 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-68025, PE-68026, and PE-68027, one of these pins (typically pin 12) must be decoupled with a bypass capacitor. The E2001, E2003, E2007, E2009, and PE-68056 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 in IC-style packaging, making them robust enough to withstand convection and infrared reflow solder temperatures up to 235°C. In addition, compliant leads provide excellent solder-joint reliability with a coplanarity of  $\pm 0.002"$  (0,05mm).

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

## For More Information:

**Pulse Worldwide Headquarters**  
12220 World Trade Dr.  
San Diego, CA 92128  
U.S.A.  
[www.pulseeng.com](http://www.pulseeng.com)

**Pulse European Headquarters**  
Einsteinstrasse 1  
71083 Herrenberg  
Germany

**Pulse China Headquarters**  
B402 Shenzhen  
Tech Innovation Internat'l  
10th Kejinan Rd.  
High-Tech Industrial Park  
Nanshan District, Shenzhen  
China  
TEL: 86 755 33966678  
FAX: 86 755 33966700

**Pulse North China**  
Room 1503  
XinYin Building  
No. 888 YiShan Rd.  
Shanghai 200233  
China  
TEL: 86 21 54643211/2  
FAX: 86 21 54643210

**Pulse South Asia**  
150 Kampong Ampat  
#07-01/02  
KA Centre  
Singapore 368324

**Pulse North Asia**  
No. 26  
Kao Ching Rd.  
Yang Mei Chen  
Taoyuan Hsien  
Taiwan, R. O. C.

TEL: 858 674 8100  
FAX: 858 674 8262

TEL: 49 7032 7806 0  
FAX: 49 7032 7806 12

TEL: 86 21 54643211/2  
FAX: 86 21 54643210

TEL: 65 6287 8998  
FAX: 65 6280 0080

TEL: 886 3 4641811  
FAX: 886 3 4641911

Performance warranty of products offered on this data sheet is limited to the parameters specified. Data is subject to change without notice. Other brand and product names mentioned herein may be trademarks or registered trademarks of their respective owners. © Copyright, 2007. Pulse Engineering, Inc. All rights reserved.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Pulse:

[PE-68025T](#) [PE-68027](#) [E2003T](#) [E2007T](#) [E2009T](#) [E2003](#) [E2007](#) [PE-68026T](#) [PE-68056](#) [PE-68026](#) [PE-68025](#) [PE-68027T](#) [PE-68056T](#)