MILITARY GRADE 10BASE-T INTERFACE MODULE

Ruggedized

PulseR Ruggedized Solutions

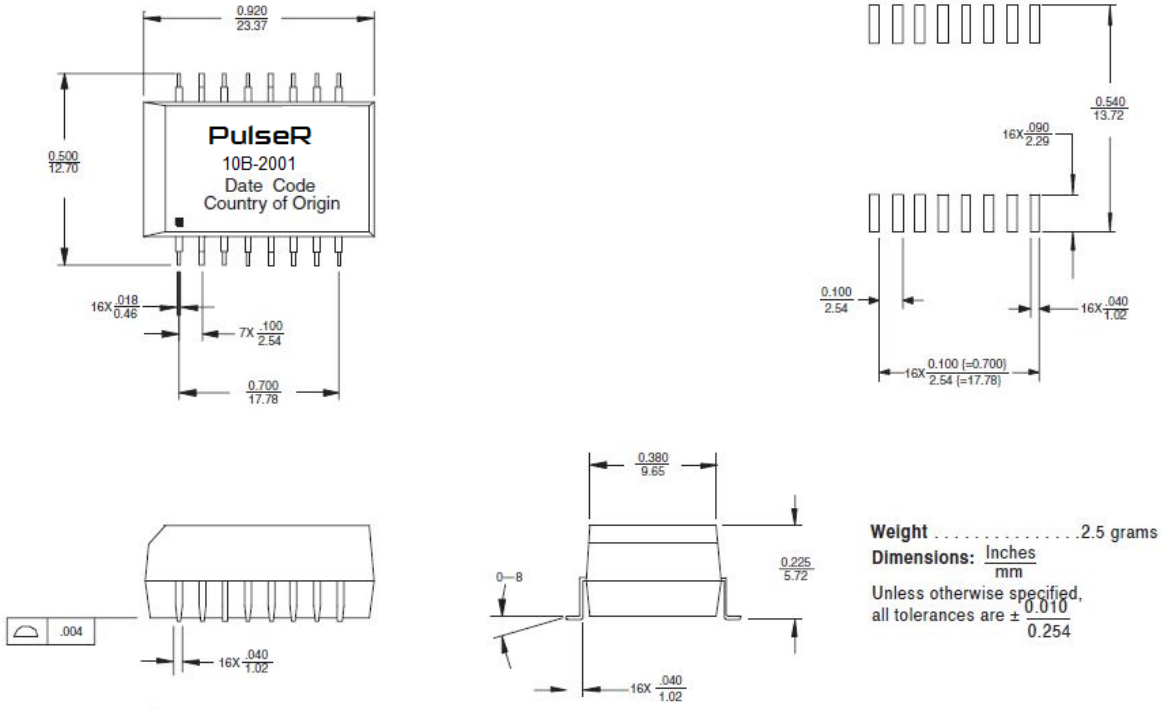
- Fully integrated 10BASE-T module for adapter, hub, and motherboard applications.
- Designed to meet IEEE802.3i-1993 10BASE-T specifications.
- Low profile surface mount package
- 235°C peak infrared reflow temperature rating
  Moisture Sensitivity Level: 3
- Storage Temperature: -55°C to +125°C.
- Parts can be screened to MIL-T-21038 and other military specific requirements

Electrical Specifications @ 25°C — Operating Temperature -40°C to +85°C												
Part Number	Insertion Loss 1-10MHz (dB max)[1]	Attenuation XMIT (dB min)[1]			Return Loss 5 to 10 MHZ (dB min)		Crosstalk (dB min)	Common Mode Rejection (dB min)				Pri-Sec Isolation (Vrms min)
		30 MHz	50 MHz	50 MHz	100 ohms	98 ±13 ohms	5-10 MHz	5-10 MHz	50 MHz	100 MHz	200 MHz	
10B-2001	-10	-30	-35	-35	-18	-15	-35	-60	-55	-50	-45	1500

NOTES:
1. Receive and transmit sides meet IEEE 8023i-1993 specification, transmit side is enhanced for FCC/VDE class B system emissions requirement.
2. Specifications reflect filter sections, additional attenuation is due to pre-distortion resistors.
3. A RoHS compliant version part is available. (10B-2001NL)

Mechanical

10B-2001

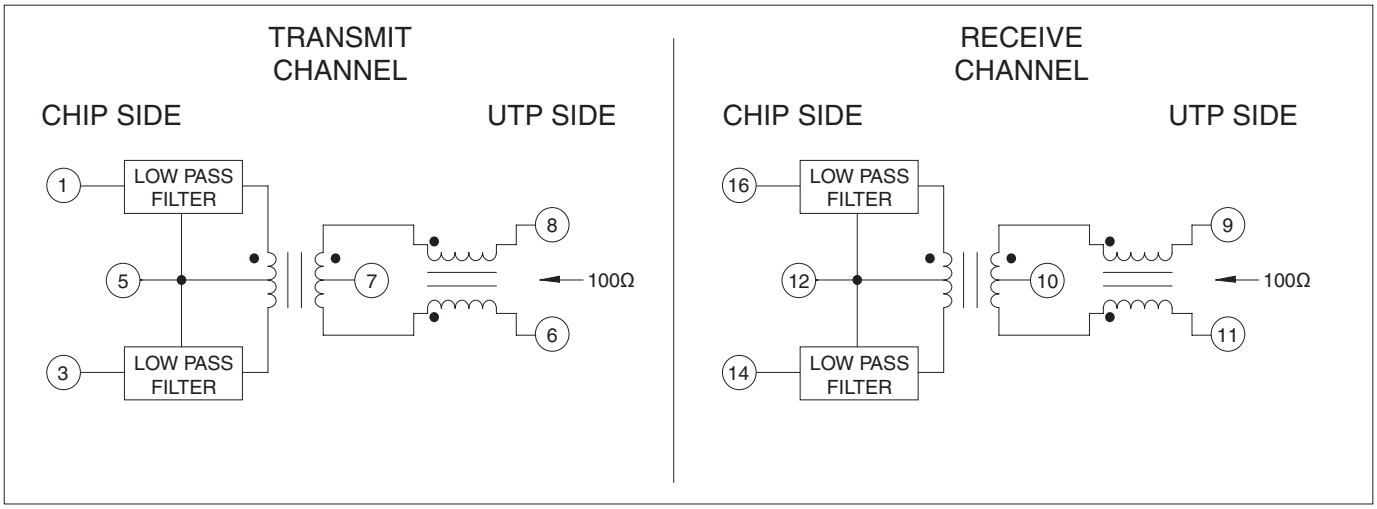


Application Notes

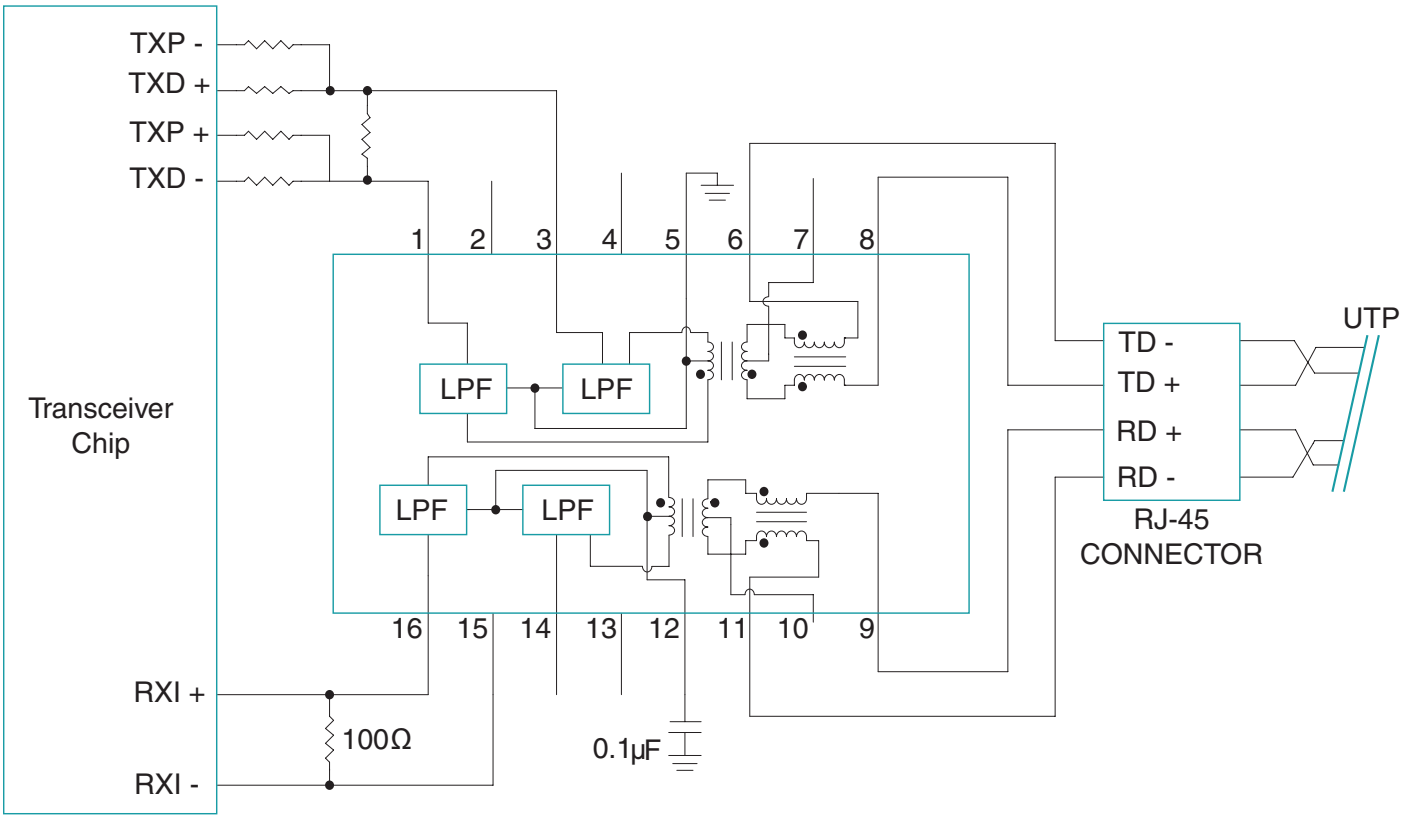
The module contains low pass filters, isolation transformers, and common mode chokes. These components provide impedance matching, equipment isolation, and EMI compression to comply with IEEE requirements. User compliance with FCC/CSPR class B requirements can be achieved by applying rigorous design guidelines to suppress noise mechanisms. Attention to high frequency signal paths, proper PCB grounding techniques, and component placement is critical. Pins 5 and 12, when grounded, provide noise return paths.

At least one of these (typically pin 12) must be coupled with bypass capacitor. Recommended module orientation with respect to RJ45 connector is illustrated in the application circuit. Output pins 6 through 11 should be routed with short, matched traces to the connector for optimum EMI performance. The robust mechanical package withstands IR reflow temperatures up to 235°C. Compliant leads provide excellent solder-joint reliability with K.002 coplanarity. Modules are shipped in tubes.

Schematic

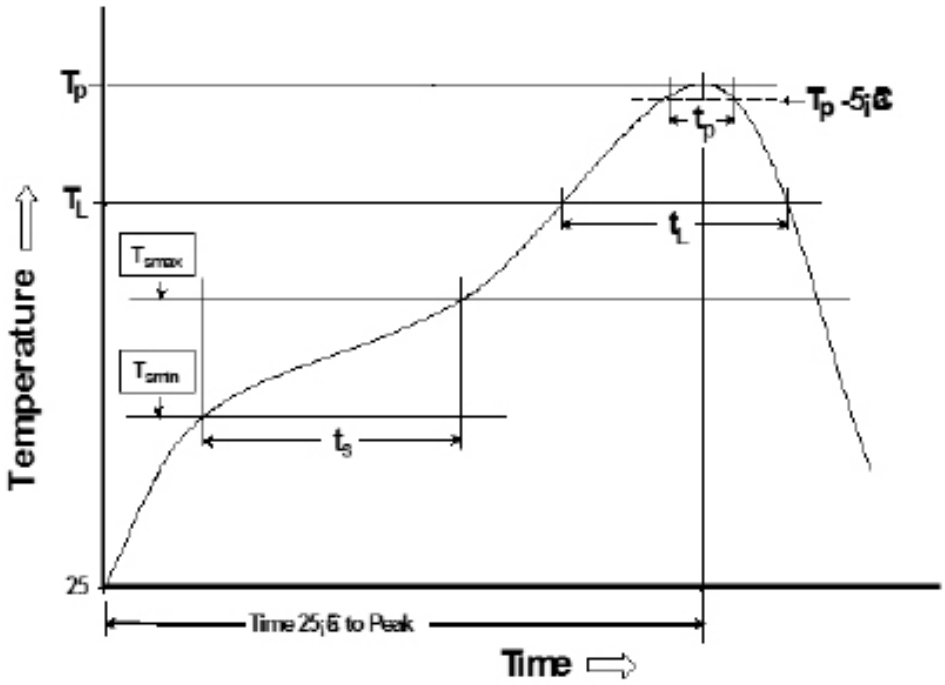


Typical Application Circuit



Note: Resistors included in module

Tin/Lead Recommended Reflow Profile (Based on J-STD-020D)



T_{SMIN} (°C)	T_{SMAX} (°C)	T_L (°C)	T_P (°C MAX)	t_S (s)	t_L (s)	t_P (s MAX)	Ramp-up rate (T_L to T_P)	Ramp-down rate (T_P to T_L)	Time 25°C to peak temperature (s MAX)
100	150	183	235	60-120	60-150	20	3°C/s MAX	6°C/s MAX	360

Notes:

1. All temperatures measured on the package leads.
2. Maximum times of reflow cycle: 2.

For More Information

PulseR North America Headquarters
Two Pearl Buck Court
Bristol, PA 19007
U.S.A.

For Global Sales Representatives and Locations Visit:
www.pulseruggedized.com

Tel: 215 781 6400
Fax: 215 781 6403