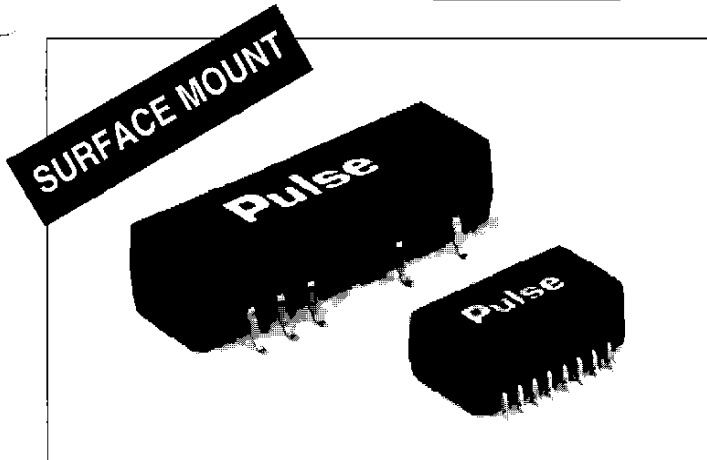




10BASE-T INTERFACE MODULE AND COMMON MODE CHOKES

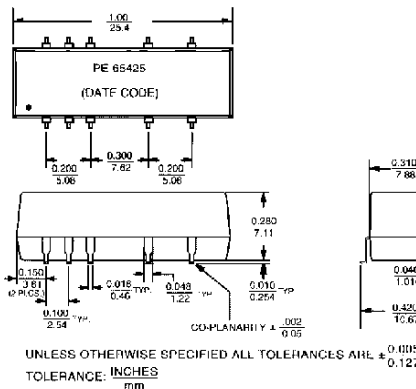


- DESIGNED TO MEET IEEE 802.3I-1990 10BASE-T SPEC.
- DESIGNED AND TESTED TO WITHSTAND INFRARED & VAPOR-PHASE SOLDERING
- PICK AND PLACE COMPATIBLE
- LOW COMMON MODE NOISE AND CROSS TALK HELP SYSTEM MEET FCC/VDE EMI STANDARDS
- DESIGNED FOR USE WITH MOST 10BASE-T MULTI-PORT REPEATER & TRANSCEIVER CHIPS

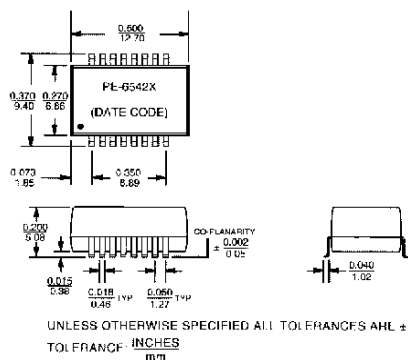
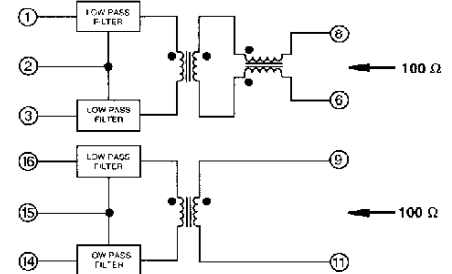
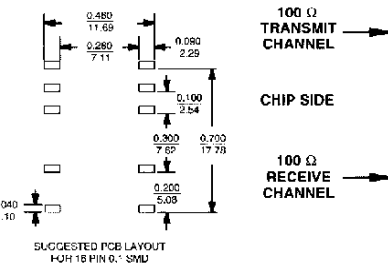
ELECTRICAL SPECIFICATIONS @ 25° C

Part Number	Insertion loss to 10 MHz (dB max) ^(a)	Attenuation (dB min)		Return loss 0.1 to 10 MHz (dB min)		Crosstalk (dB min)	Group delay 5-10 MHz (nS max)	Common mode rejection (dB min)	Pri-Sec Isolation (Vrms min)
		30 ^(b) MHz TX	50-70 MHz RX	100 Ω	98 ±13Ω				
PE-65425	-1.1	-32	-15	-18	-15	-40	4.0	-30	2000
Part Number	Turns Ratio (± 5%)	Sine Wave Inductance OCL (μH min.)		Leakage inductance (μH max.)		DCR (Ω max.)	Interwinding Capacitance C _{ww} (pF max.)		Hi-Pot (V _{rms})
PE-65427	1:1	68		0.15		0.170	8		500
PE-65428	1:1	28		0.15		0.170	8		500

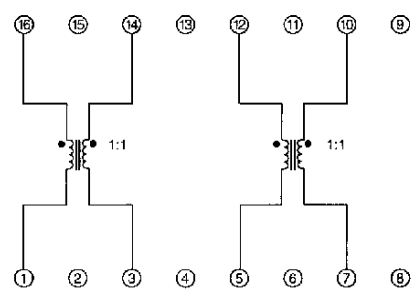
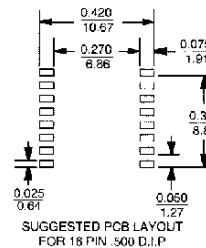
(a) 1.0 dB typical (b) Both transmit and receive channels meet IEEE 802.3I-1990 specification, transmit side is further enhanced for the typical applications.



INTERFACE MODULE



COMMON MODE CHOKES



The PE-65427 or PE-65428 is used optionally in applications where the system requires additional margins. In such application use the choke with PE-65425 as shown in the application circuit drawing on the back side of this data sheet.



10BASE-T INTERFACE MODULE AND COMMON MODE CHOKES

Developed for 10Base-T Multiport Repeaters & MAU Applications

APPLICATION

Pulse's 10Base-T analog interface module provides the complete analog solution for maintaining high data integrity in transmissions between multiport hubs and individual stations, (ports, nodes). Hubs and stations utilizing these modules fully meet the requirement of IEEE 802.3i-1990 standards and operate at a full 10 Mbits/second up to 100 meters in cable length. Compliance with these standards can be achieved by applying rigorous design guidelines to suppress EMI and cross talk interferences as well as to control both signal jitter and reflections. The PE-65425 controls these features by creating the optimum signal shape and spectral content.

The two channel PE-65425 consists of low pass filters, isolation transformers, and common mode chokes. They provide three basic functions: EMI suppression, impedance matching and equipment isolation. In a typical multiport repeater application, many channels are running close to each other. A significant design effort is required to reduce the signal's harmonic components, common mode noise and cross talk interference. While at system level these noise mechanisms may be reduced by optimizing high frequency signal paths and utilizing good PCB grounding techniques, Pulse's module, with higher order low pass filters and high impedance common mode chokes, significantly help to minimize them to the lowest possible level. It has been shown that this is a key for the system to pass the FCC/VDE class B requirement.

Laser trimmed capacitors and precision wound inductors provide controlled passband impedances and low return

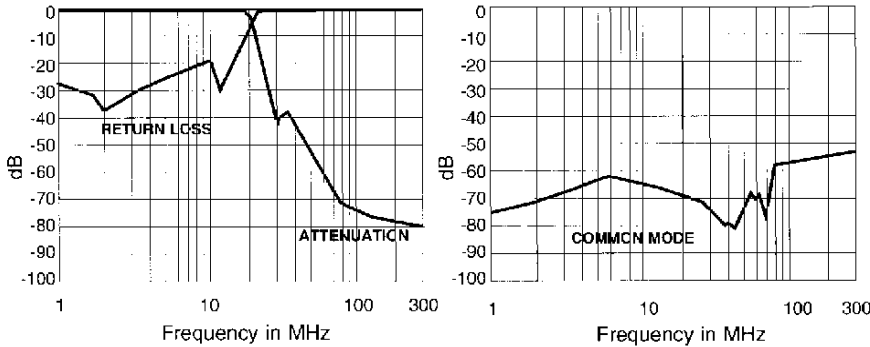
loss. In addition, the filter cut-off frequency has been carefully placed to minimize insertion loss and delay distortion while maximizing attenuation in the stop band. Each part is fully tested to provide 2000 Vrms breakdown protection from static charge which may develop on the twisted pair line.

The module contains both transmit and receive channels; PE-65425 in a single 16 pin dual in line package which saves PCB space. These parts are also suited for installation into personal computer adapter cards or external MAU transceiver boards.

Note

Both PE-65427 and PE-65428 may be used for additional common mode choke filtering.

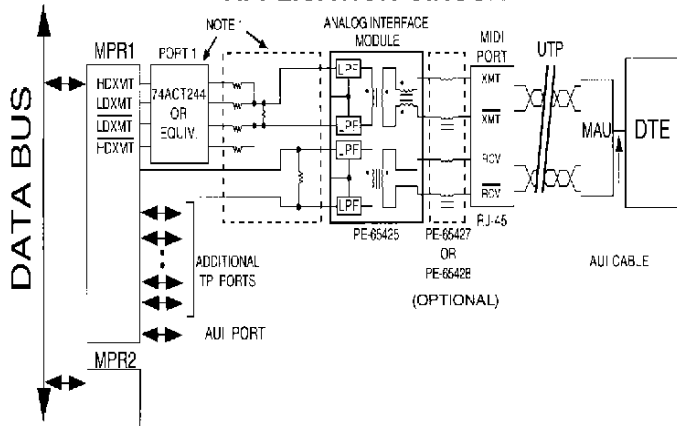
TYPICAL GRAPHS



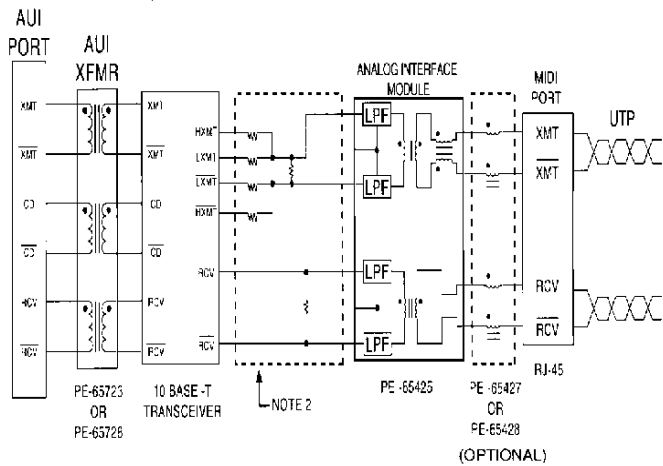
Operation with 10base-T chips from a variety of semiconductor manufacturers as listed below.

IC Manufacturer	IC Part Number (Transceiver)	IC Part Number (Multiport Repeater)
AT&T	T7213, T7210, T7220, T7240	T2200, T2201
AMD	Am79C98	Am79C80
Level One	LXT 902	LXT 903
NCR	NCR92C02A, NCR92C03	TBA
Micro Linear	ML4651, ML4653, ML4654	ML 4653
National Semiconductor	DP83902	DP83950
Fujitsu	MB86962	TBA
Philips/Signetics	NE86C92	TBA
Seeq	83C94	TBA
Intel	85206TC	82505TA
TI	SN75LBC086DW	

TYPICAL MULTIPORT REPEATER APPLICATION CIRCUIT



TYPICAL MAU APPLICATION CIRCUIT



NOTES 1 & 2: For specific information on how to use Pulse's module, including component values, please refer to application notes of IC Manufacturer. PE-65427 or PE-65428 are optional and may be used for additional common mode filtering.

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