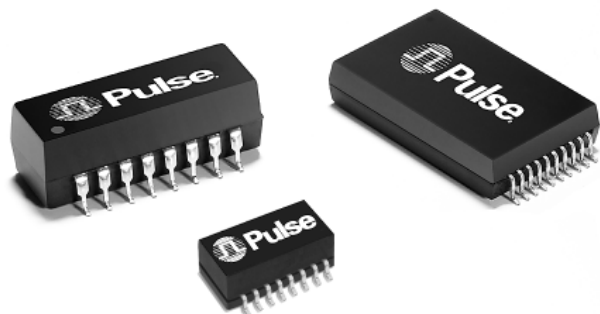





# ATM 25 MBPS FILTER/ MAGNETIC MODULES AND TRANSFORMERS

For UTP and STP Surface Mount Applications



- 
 Designed to meet ATM 25.6 PHY specifications including low frequency cutoff
- 
 IC grade transfer-molded package withstands 235°C peak IR temperature profile
- 
 Supports STP 150 Ω or UTP 100 Ω transmission cable (PE-67582 supports UTP cable)

## Electrical Specifications @ 25° — Operating Temperature 0°C to 70°C

Part Number	Return Loss (dB MIN)		Insertion Loss (dB)					Comm-Comm Rejection (dB MIN)			Crosstalk (dB MIN)			Hipot (Vrms)	
	1-17 MHz	17-25 MHz	12 KHz (MAX)	4 MHz (MAX)	16 MHz (MAX)	24 MHz (MAX)	36 MHz (MIN)	5 MHz	20 MHz	200 MHz	5 MHz	16 MHz	24 MHz		
PE-67583	-16	-9.0	-3.0	-0.6	-1.0	-1.8	-10	-20	-25	-20	-50	-50	-46	600	
PE-67588	TRANSMIT														600
	-12	-8.0	-3.0	-1.1	-1.5	-1.8	-25	-60	-40	-20	-50	-44	-40		
PE-67582	RECEIVE														1500
	-15	-10	-3.0	-3.1	-3.1	-3.7	—	-60	-40	-15	-50	-44	-40		
PE-67582	-15	-9.0	-1.5	—	-0.7	-1.5	-3.0	—	—	—	—	-45	-40	1500	
	Turns Ratio		OCL (μH MIN)			Interwinding Capacitance C <sub>ww</sub> (pF MAX)		Leakage Inductance L <sub>L</sub> (μH MAX)			DC Resistance DCR (Ω MAX)				
1:1, 1:CT:1		3000			55		1.6			1.3					

## Description

### PE-67583

The PE-67583 Dual Channel Interface Module provides filtering, impedance matching and common mode suppression. This module is compatible with various ATM 25.6 transceivers: TI 380C30/60, IDT 77105, and Transwitch ALI-25T. The module provides impedance matching to 100 Ω unshielded twisted pair (UTP) or 150 Ω shielded twisted pair (STP) media.

### PE-67588

The PE-67588, dual channel interface module, provides voltage suppression, filtering, impedance matching and common mode suppression. It is compatible with the NEC μPD98408 3.3V six port transceiver. Six PE-67588 modules are required for implementing the six channel capability of the transceiver. The module provides impedance matching to 100 Ω UTP or 150 Ω STP media.

### PE-67582

The PE-67582 Pulse transformer is compatible with the SEEQ 93C95 PHY interface. The transformer provides impedance matching for 100 Ω UTP applications.

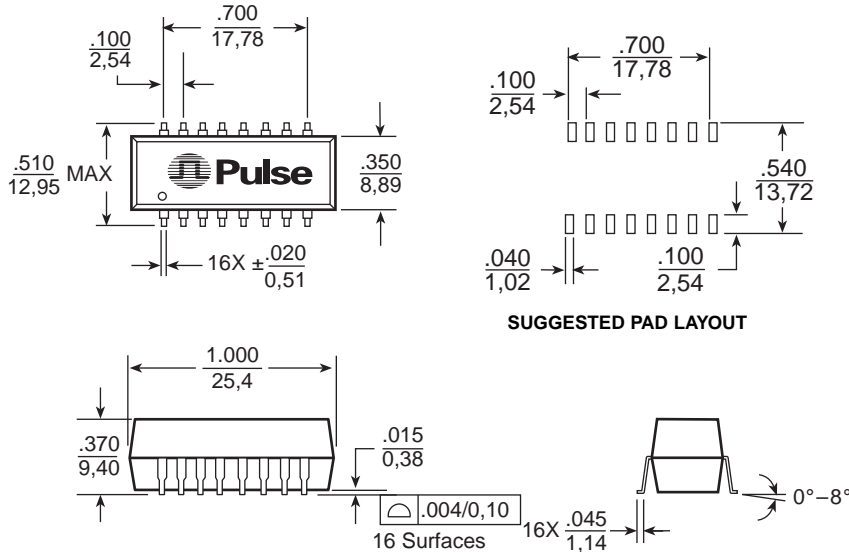
# ATM 25 MBPS FILTER/ MAGNETIC MODULES AND TRANSFORMERS



For UTP and STP Surface Mount Applications

## PE-67583

### Mechanical



SUGGESTED PAD LAYOUT

Dimensions:  $\frac{\text{Inches}}{\text{mm}}$

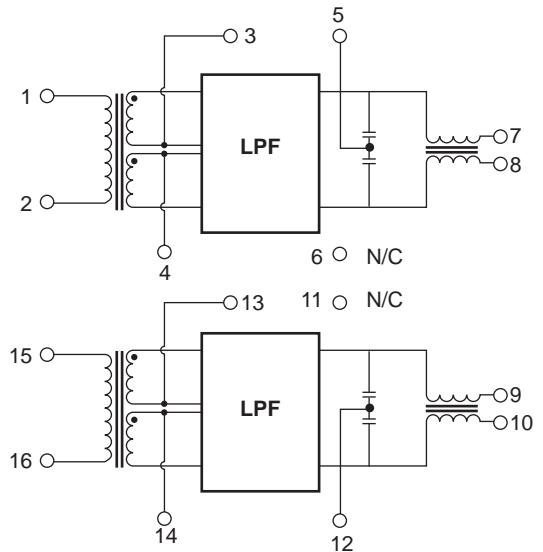
Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0,25}$

Weight ..... 4.0 grams

Tape & Reel ..... .160/reel

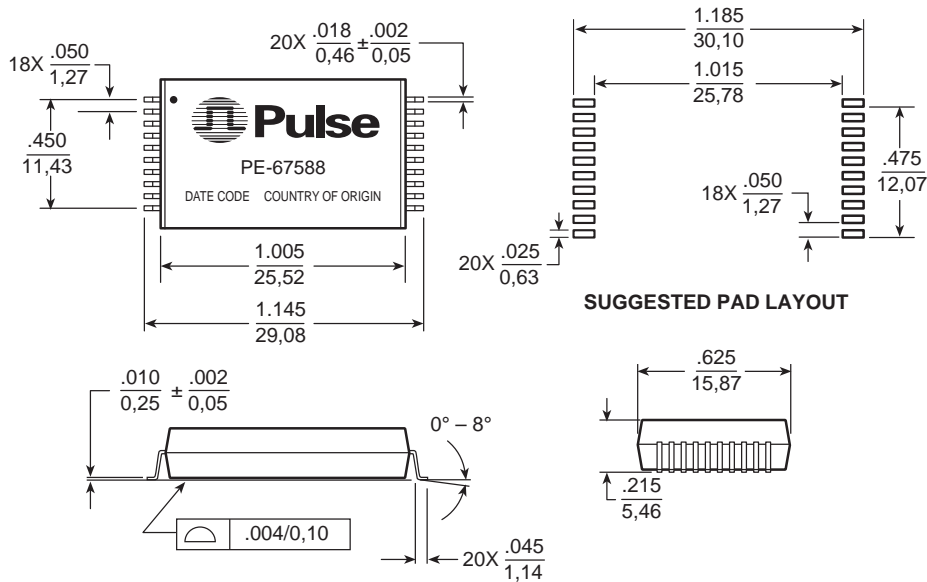
Tube ..... .20/tube

### Schematic



## PE-67588

### Mechanical



SUGGESTED PAD LAYOUT

Dimensions:  $\frac{\text{Inches}}{\text{mm}}$

Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0,25}$

Weight ..... 4.3 grams

Tape & Reel ..... .160/reel

Tube ..... .20/tube

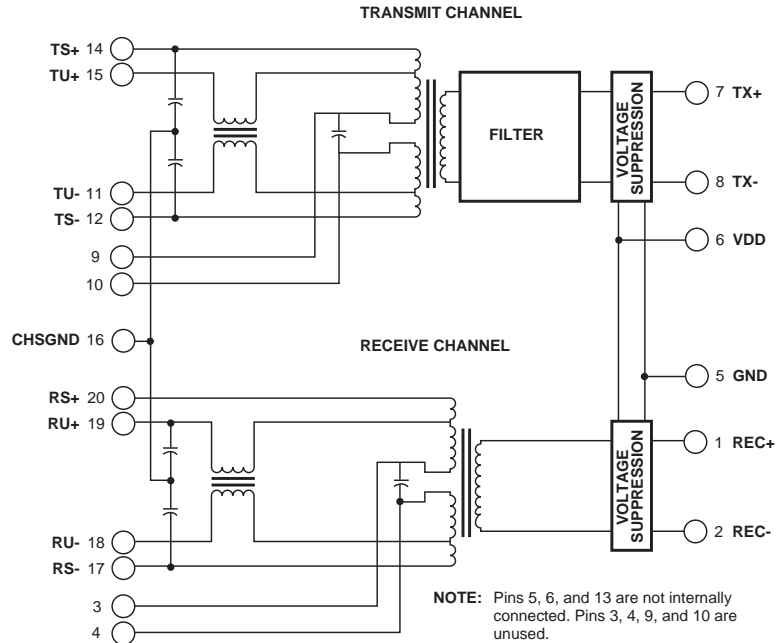
# ATM 25 MBPS FILTER/ MAGNETIC MODULES AND TRANSFORMERS

## For UTP and STP Surface Mount Applications



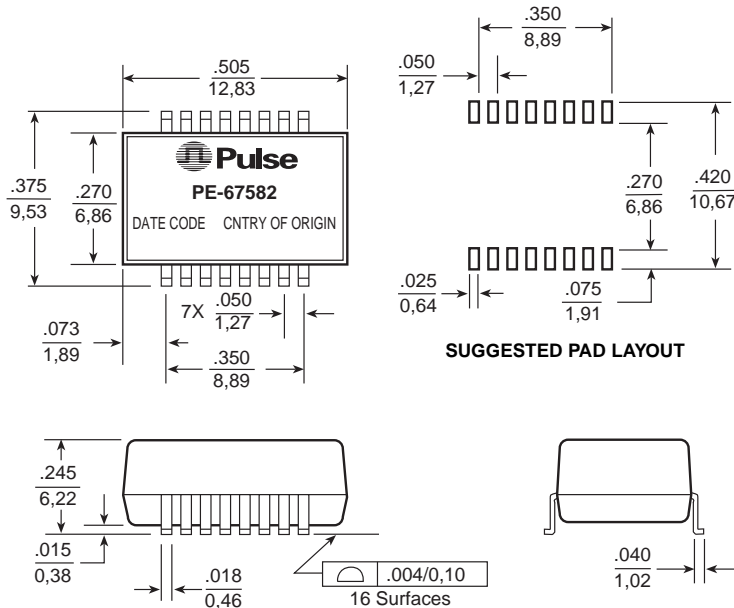
PE-67588

### Schematic

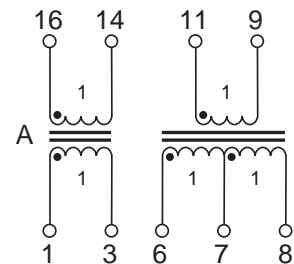


PE-67582

### Mechanical



### Schematic



Weight .....1.1 grams  
Tape & Reel ..... .900/reel  
Tube ..... .40/tube

Dimensions:  $\frac{\text{Inches}}{\text{mm}}$

Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0.25}$

# ATM 25 MBPS FILTER/ MAGNETIC MODULES AND TRANSFORMERS



## For UTP and STP Surface Mount Applications

### Application Notes

A typical ATM 25.6 application circuit is shown. The suggested application circuit supports operation over shielded twisted pair or unshielded twisted pair media. Note that both channels are identical in the PE-67583.

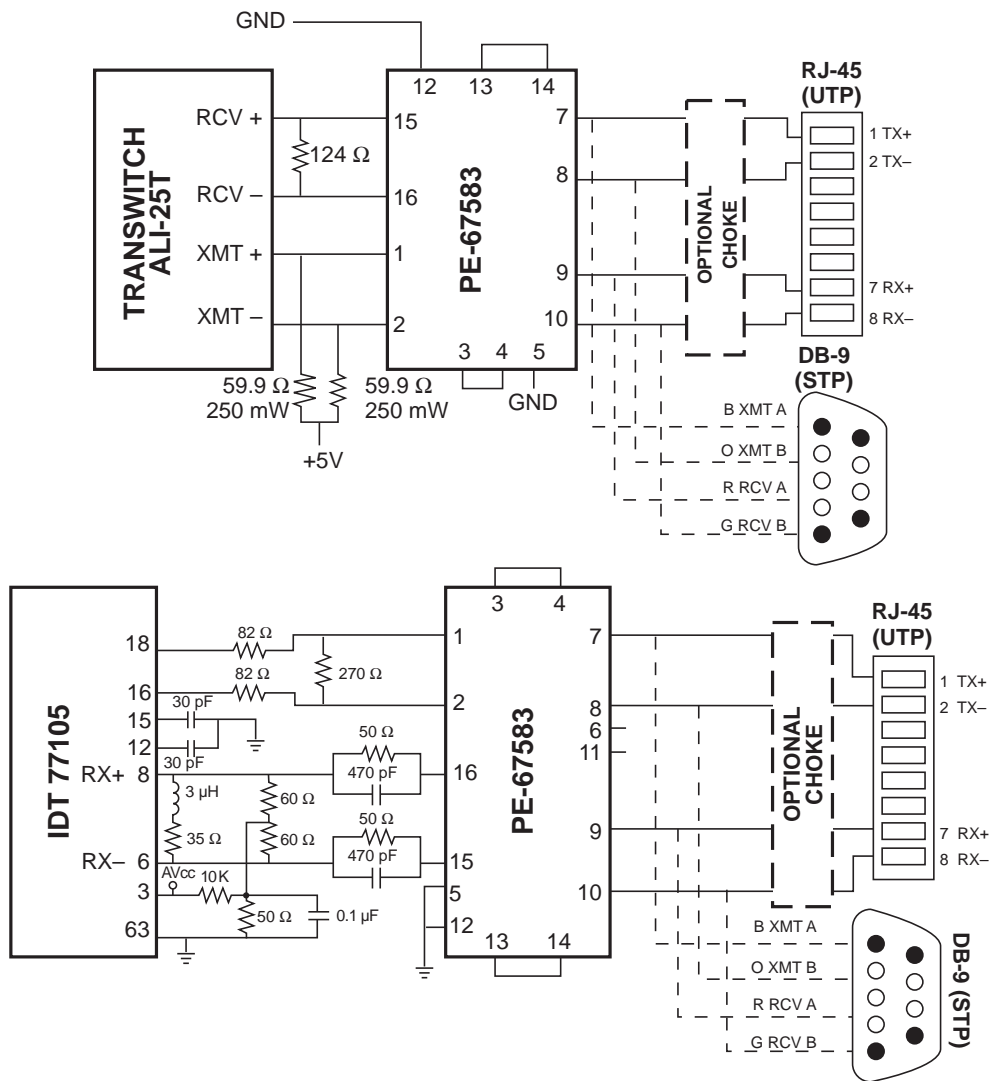
The components and guidelines in this note should serve as a starting point for design. The circuit and layout of an ATM 25.6 interface requires that special attention be given to the selection of components and their placement to reduce induced noise. The optimum external circuit values

are dependent upon the individual layout, operating conditions, and specific cabling requirements. Pulse transformers are designed for use in ATM 25.6 Mbps applications that require a low frequency cutoff below 12 KHz.

**It is important not to connect both UTP and STP media simultaneously. The module has been optimized to support only one media connection at a time.**

### Application Circuit

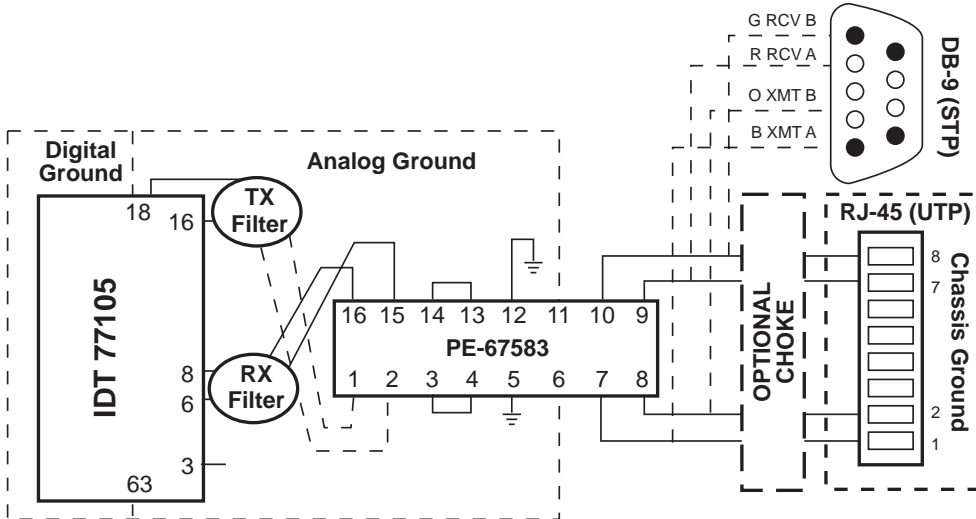
**PE-67583**



A typical user termination is shown using an IDT 77105. All grounds shown are analog grounds.

# ATM 25 MBPS FILTER/ MAGNETIC MODULES AND TRANSFORMERS

For UTP and STP Surface Mount Applications



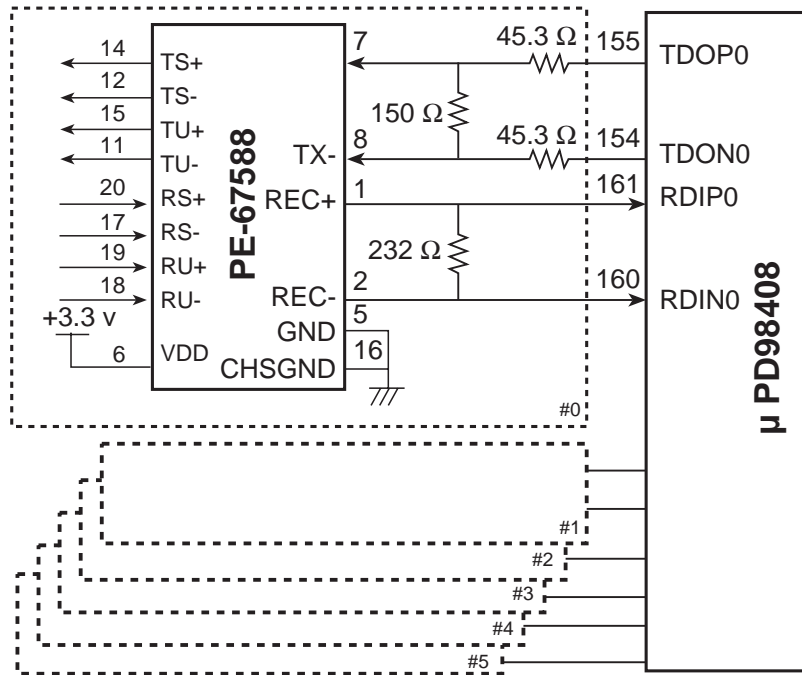
**Notes:**

1. Connect analog and digital power/ground planes at pins 3 and 63 of the IDT 77105.
2. Run dotted transmit traces on the back side of the PCB.
3. For a network termination, transpose the transmit and receive traces between the IDT 77105 and the PE-67583.

A suggested layout guide for the circuit depicted on previous page

**PE-67588**

## Application Circuit



# ATM 25 MBPS FILTER/ MAGNETIC MODULES AND TRANSFORMERS



## For UTP and STP Surface Mount Applications

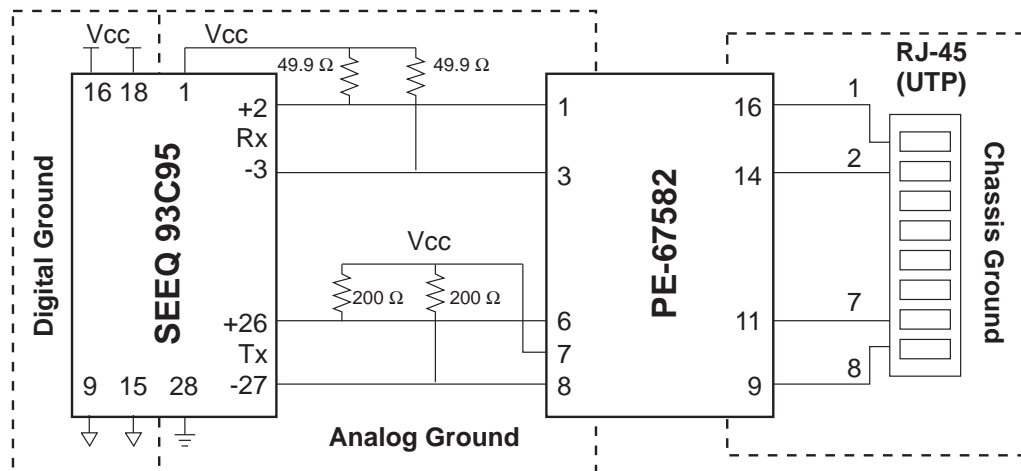
**PE-67588**

### Pin Description

Pin Name	Pin No.	I/O	Function
TU+/TU-	15, 11	O	Transmit data output to UTP (balanced signal). Connect to transmit data pins of the UTP connector. When connecting to STP, these pins are open.
TS+/TS-	14, 12	O	Transmit data output to the STP (balanced signal). Connect to transmit data pins of the STP connector. When connecting to UTP, these pins are open.
TX+/TX-	7, 8	I	Transmit data input to UTP (balanced signal). Connect to DRVOPn/DRVONn pins. The polarity of positive/negative is free.
RU+/RU-	19, 18	I	Receive data input from the UTP (balanced signal). Connect to receive data pins of the UTP connector. When connecting to STP, these pins are open.
RS+/RS-	20, 17	I	Receive data input from the STP (balanced signal). Connect to transmit data pins of the STP connector. When connecting to UTP, these pins are open.
REC+/REC-	1, 2	O	Receive data output (balanced signal). Connect to the RDIPn/RDINn pins. The polarity of positive/negative is free.

**PE-67582**

### Application Circuit



### For More Information :

#### Corporate

12220 World Trade Drive  
San Diego, CA 92128  
Tel: 619 674 8100  
FAX: 619 674 8262  
<http://www.pulseeng.com>  
Quick-Facts: 619 674 9672

#### Europe

Dunmore Road  
Tuam  
County Galway  
Ireland  
Tel: 353 93 24107  
FAX: 353 93 24459

#### Asia

P.O. Box 26-11, KEPZ  
6 Central Sixth Road  
KEPZ, Kaohsiung  
Taiwan, R.O.C.  
Tel: 886 7 821 3141  
FAX: 886 7 841 9707

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