

- \* Designed for IEEE 802.3 10 Base-T
- \* Compact Standard DIL OR SIP Packages
- \* Performs Impedance Match + Filtering + Isolation
- \* 2000Vrms Minimum Isolation Voltage
- \* Low Insertion Loss
- \* Designed for Use With Most 10 Base T Chips

**ELECTRICAL SPECIFICATIONS AT 25°C - OPERATING TEMPERATURE RANGE 0°C TO +70°C**

**DIL (DUAL IN-LINE) THRU-HOLE**

PART NUMBER	Insertion Loss 1 to 10MHz (dB Max)		Return Loss 1 to 10MHz (dB Min.)	Crosstalk to 10MHz (dB Min.)	Group Delay Change (ns Max.) 5-10MHz	Attenuation (dB Min)								Cut Off MHz TYP	Pri to Sec Isolation (Vrms Min)	Schematic
	Tran.	Rcv				20MHz		25MHz		30MHz		40MHz				
			T	R	T	R	T	R	T	R						
PM-BT01	1.0	1.0	15	30	4.0	7	6	19	14	32	20	35	31	17	2000	A
PM-BT02	4.6	4.2	15	30	4.0	7	6	19	14	32	20	35	31	17	2000	B
PM-BT03 <sup>1</sup>	1.0	1.0	15	30	4.0	7	6	19	14	32	20	35	31	17	2000	C
PM-BT04 <sup>1,2</sup>	4.5	1.0	15	35	2.0	7	5	18	11	30	16	33	26	17	2000	D
PM-BT05 <sup>1</sup>	1.0	1.0	15	35	2.0	7	5	18	11	30	16	33	26	17	2000	E
PM-BT06 <sup>1</sup>	1.0	1.0	15	30	4.0	7	6	19	14	32	20	35	31	17	2000	F
PM-BT07 <sup>1</sup>	1.0	1.0	15	30	4.0	7	6	19	14	32	20	35	31	17	2000	G

**SIP (SINGLE IN-LINE) THRU-HOLE**

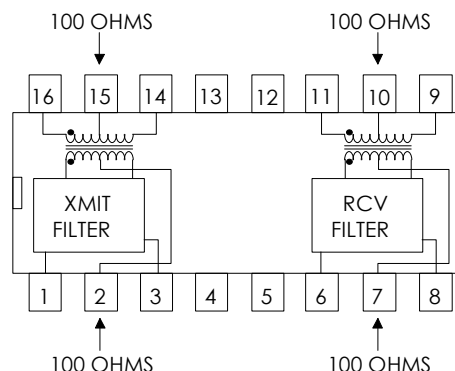
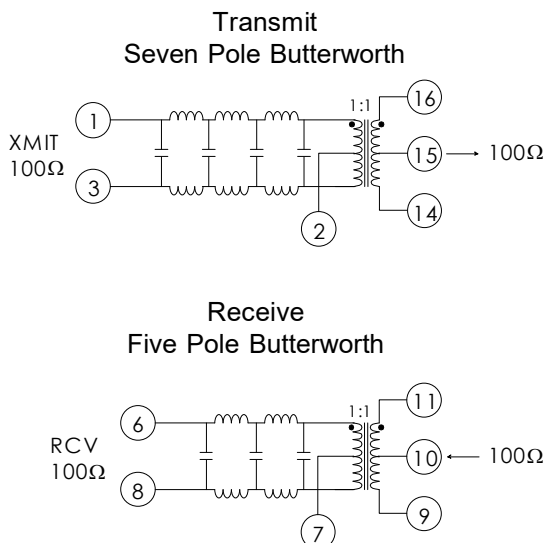
PART NUMBER	Insertion Loss to 10MHz (dB Max)	Return Loss .1 to 10MHz (dB Min.)		Crosstalk (dB Min.) MHz		Group Delay Change 5-10MHz (ns Max.)	Attenuation (dB Min @ MHz)			Common mode rejection (dB Min) MHz			Pri to Sec Isolation (Vrms Min)	Schematic
		100 Ω	98±13 Ω	5-10	10-50		30	50-100	5-10	50	100			
	T	R	T or R	5-10	50	100								
PM-BT434 <sup>(1)</sup>	-1.0	-18	-15	-45	-40	4.0	-37	-15	-40	-35	-60	-45	2000	F1

1 = INCLUDES COMMON MODE FILTER  
2 = INCLUDES RESISTOR MATCHING NETWORK

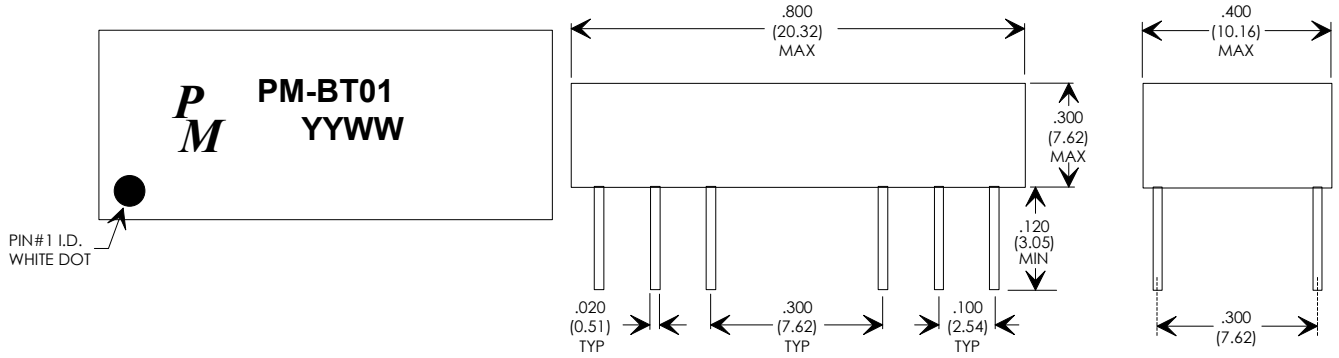
**PM-BT01 SCHEMATICS**

**SCHEMATIC  
"A"**

**SCHEMATIC "A"**



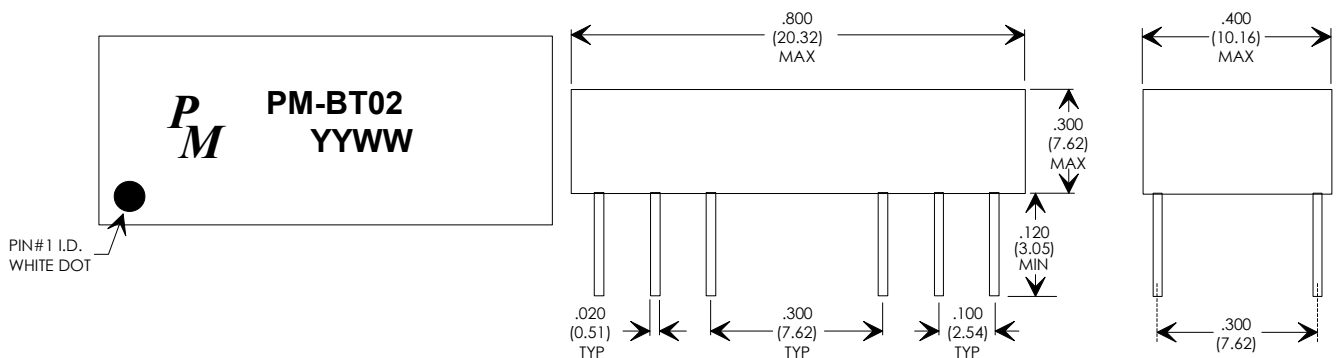
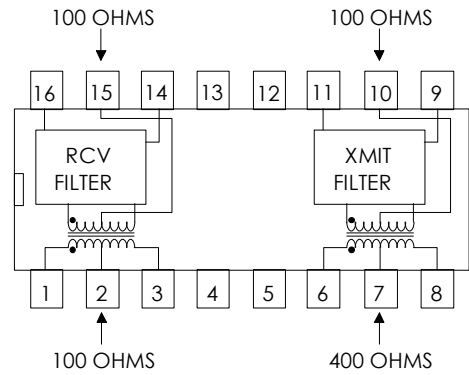
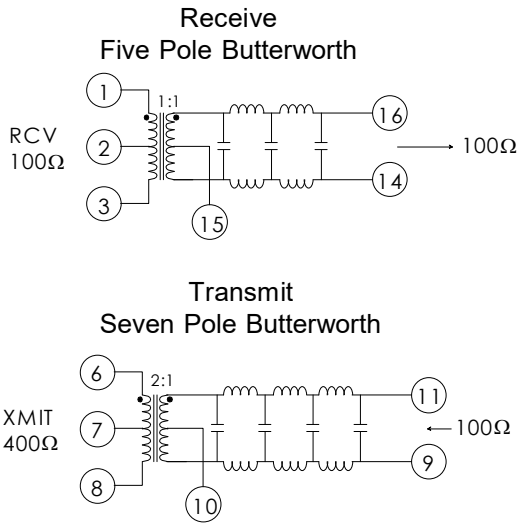
**PM-BT01 MECHANICAL**



**PM-BT02 PHYSICALS**

**SCHEMATIC "B"**

**SCHEMATIC "B"**



Specifications subject to change without notice.

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**PM-BT03 PHYSICALS**

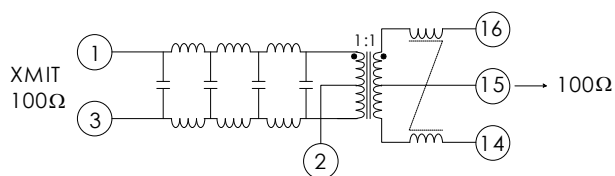
**SCHEMATIC "C"**

**SCHEMATIC  
"C"**

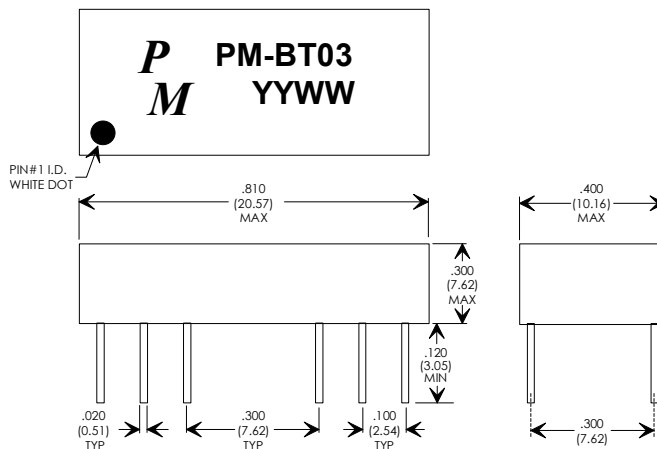
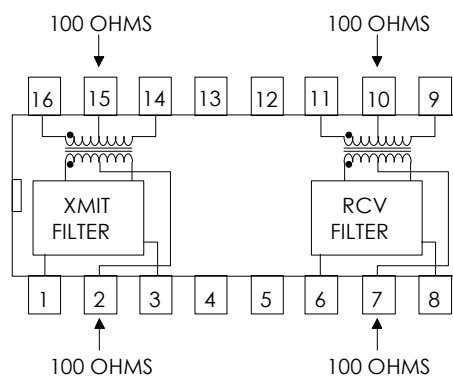
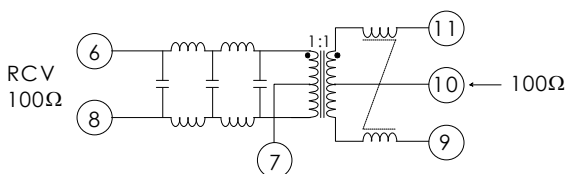
**TYPICAL COMMON MODE CHOKE:**

Inductance: 18 to 36 mHy  
Leakage Inductance: <0.3 mHy Max.  
Inter-Winding Capacitance: <25 pF Max.  
CMRR 10-100MHz >20db

**Transmit  
Seven Pole Butterworth**



**Receive  
Five Pole Butterworth**



**PM-BT04/05 PHYSICALS**

**SCHEMATIC "D" & "E"**

**SCHEMATIC  
"D" & "E"**

**COMMON MODE**

**REJECTION:**

Transmit: 30dB min from 1 to 100MHz

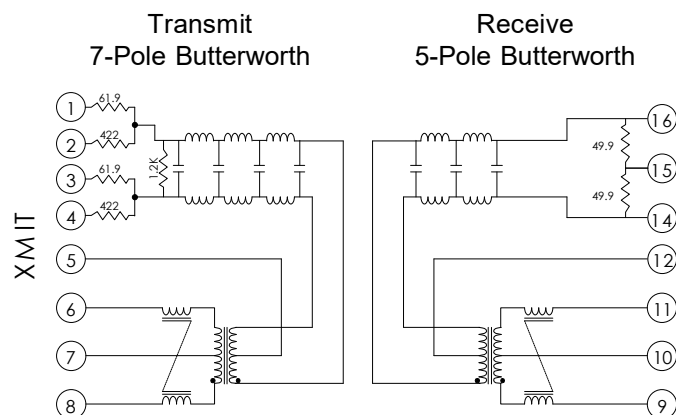
Receive: 30dB min from 1 to 100MHz

**RETURN LOSS:**

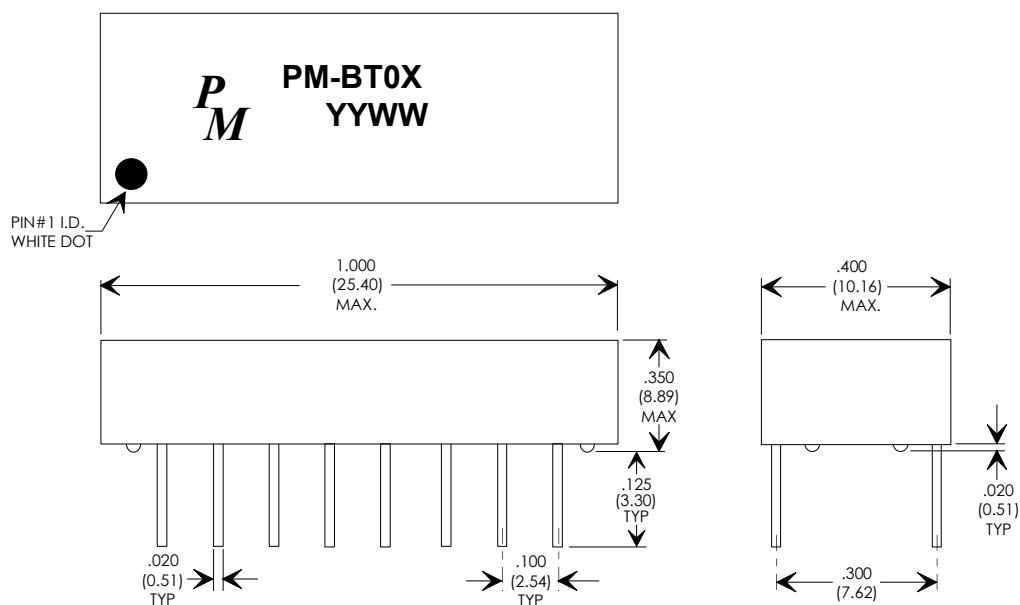
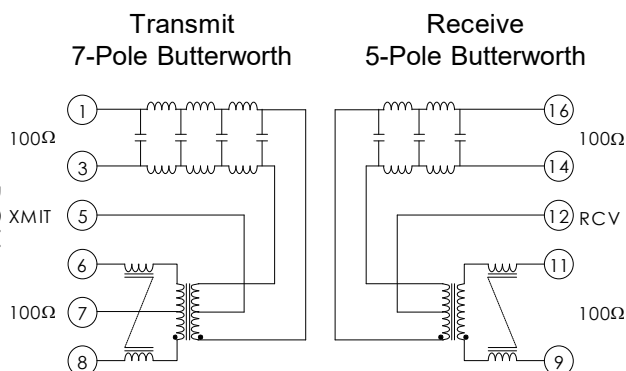
Transmit: 15dB min from 5 to 10MHz

Receive: 15dB min from 5 to 10MHz

**SCHEMATIC DIAGRAM  
"D" = PM-BT04**

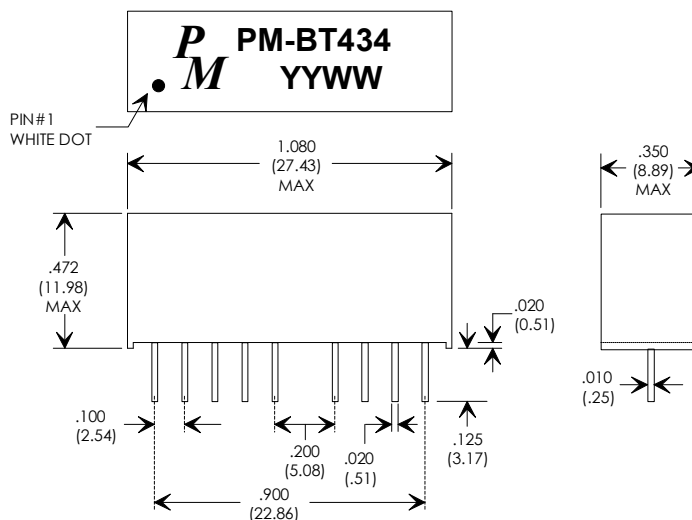
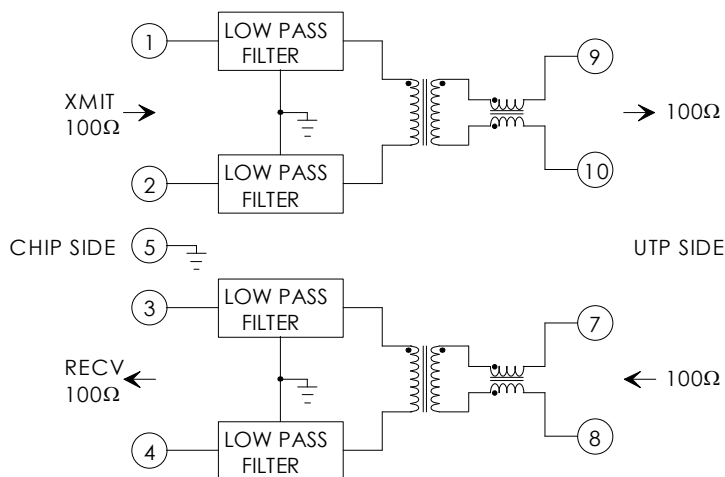


**SCHEMATIC DIAGRAM  
"E" = PM-BT05**



SCHEMATIC  
"F1"

**SCHEMATIC DIAGRAM**



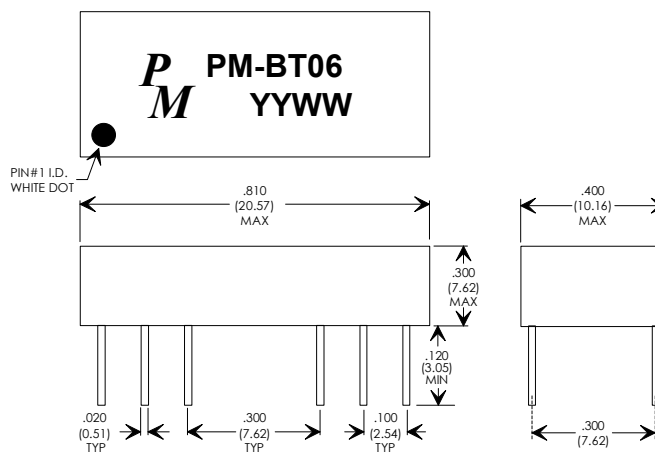
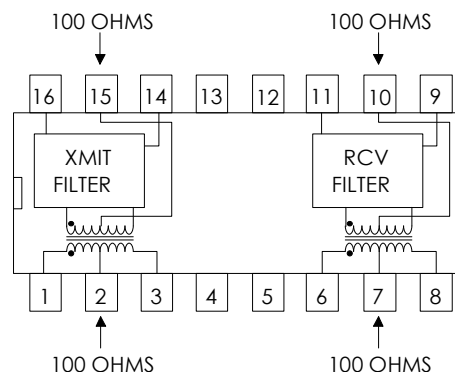
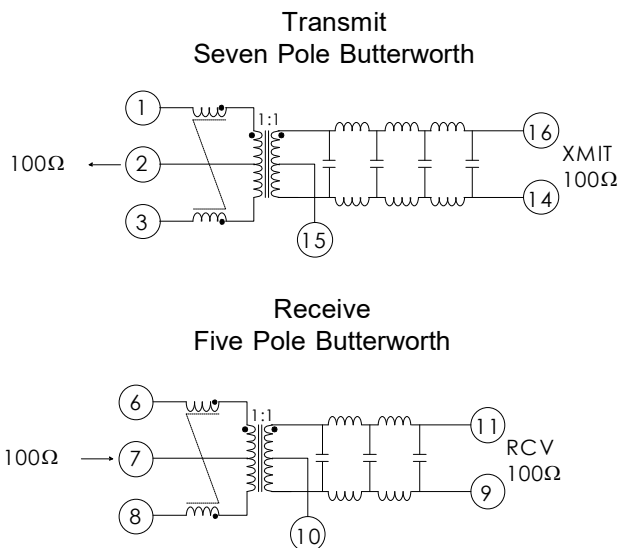
**PM-BT06 PHYSICALS**

**SCHEMATIC  
"F"**

**SCHEMATIC "F"**

**TYPICAL COMMON MODE CHOKE:**

Inductance: 18 to 36 mHy  
Leakage Inductance: <0.3 mHy Max.  
Inter-Winding Capacitance: <25 pF Max.  
CMRR 10-100MHz >20db



PM-BT07 PHYSICALS

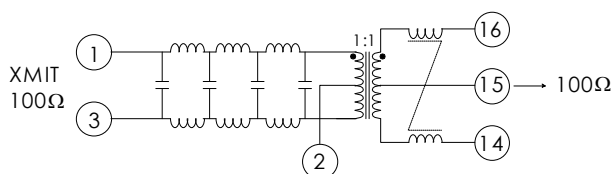
SCHEMATIC "G"

SCHEMATIC  
"G"

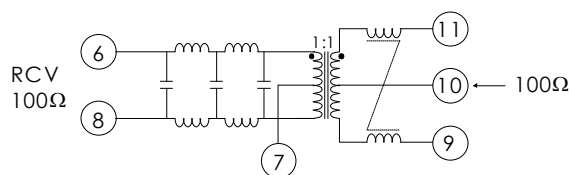
**TYPICAL COMMON MODE CHOKE:**

Inductance: 18 to 36 mHy  
Leakage Inductance: <0.3 mHy Max.  
Inter-Winding Capacitance: <25 pF Max.  
CMRR 10-100MHz >20db

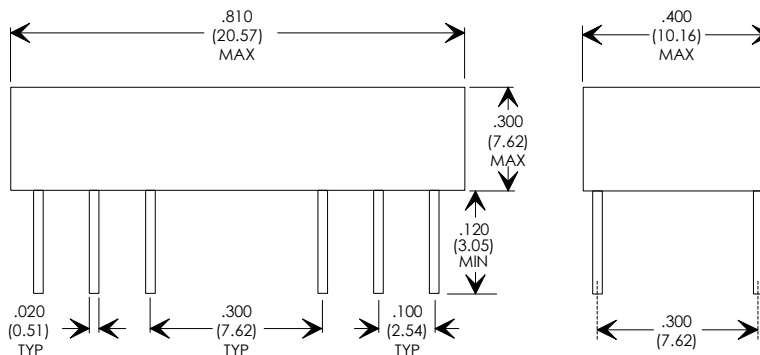
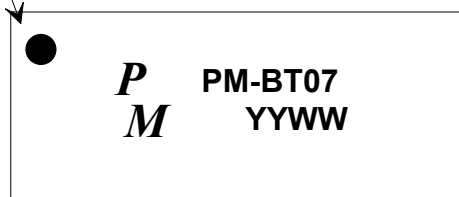
Transmit  
Seven Pole Butterworth



Receive  
Five Pole Butterworth



PIN#1 I.D.  
WHITE DOT



Specifications subject to change without notice.

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- \* Available in Enhanced or Standard Design Version
- \* 235°C Peak Infrared Reflow Temperature Rating

- \* Extended Temperature Version \*
- \* Low Profile Surface Mount Package

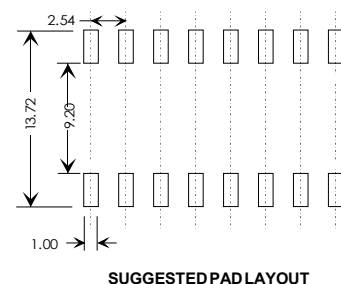
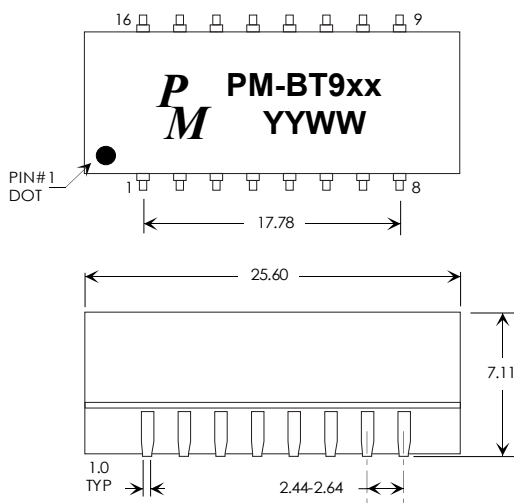
**ELECTRICAL SPECIFICATIONS AT 25°C - OPERATING TEMPERATURE RANGE 0°C TO +70°C**

PART NUMBER	Insertion Loss 1 to 10MHz (dB Max)	Return Loss 1 to 10MHz (dB Min.)		Crosstalk to 10MHz (dB Min.)	Attenuation (XMIT) (dB Min)			Common Mode Rejection (dB Min)					Pri to Sec Isolation (Vrms Min)	Schematic
		100Ω	98±13Ω		5-10MHz	30MHz	40MHz	100MHz	5MHz	10MHz	50MHz	100MHz		
PM-BT91	-6.0	-18	-15	-35	-35	-35	-35	-60	-60	-55	-50	-45	1500	H
PM-BT92	-1.0	-18	-15	-35	-30	-35	-35	-60	-60	-55	-50	-45	1500	J
PM-BT93	-6.5	-18	-15	-35	-35	-35	-35	-42	-37	-33	-45	-40	1500	H
PM-BT94	-1.0	-18	-15	-30	-30	-27	-27	-40	-30	-50	-45		1500	K
PM-BT95	-5.5	-18	-15	-30	-30	-30	-35	-35 <sup>3</sup>	-30 <sup>3</sup>	-55 <sup>3</sup>	-50 <sup>3</sup>		1500	L
PM-BT96	-6.0	-18	-15	-35	-30	-27	-27	-40	-35	-45	-30		1500	L
PM-BT97	-5.0	-18	-15	-25	-30	-35	-40	-35	-30	-55	-50		1500	L
PM-BT98	-5.0	-18	-15	-25	-30	-35	-40	-35	-30	-55	-50		1500	L
PM-BT99	-1.0	-18	-15	-35	-30	-27	-27	-40	-35	-45	-45		1500	K

RESISTOR VALUE (Ω)								
PART NUMBER	IC Manufacturer	R1	R2	R3	R4	R5	R6	R7
PM-BT91	AMD	61.9	422	61.9	422	1210	49.9	49.9
PM-BT92	Various	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PM-BT93	National	274	66.5	66.5	274	806	49.9	49.9
PM-BT95	National	348	53.6	53.6	348	806	49.9	49.9
PM-BT96	AMD	61.9	422	61.9	422	1210	49.9	49.9
PM-BT97	LSI	390	63.4	390	63.4	N/A	49.9	49.9
PM-BT98	Motorola	39	N/A	39	N/A	N/A	49.9	49.9

- \* Note: 1. For Extended Temperature version (-40°C to +85°C) Add "E" at the end of part # example: PM-BTxxxE
- 2. For 245C Peak Infrared Relow Temperature Add "H" at the end of part # example: PM-BTxxH (Part will not full potting material at bottom case)
- 3. Common Mode Rejection results are TYP.

**PM-BT91x-94x and 96x-99x PHYSICALS** **PCB LAYOUT**

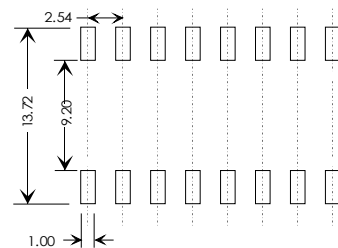
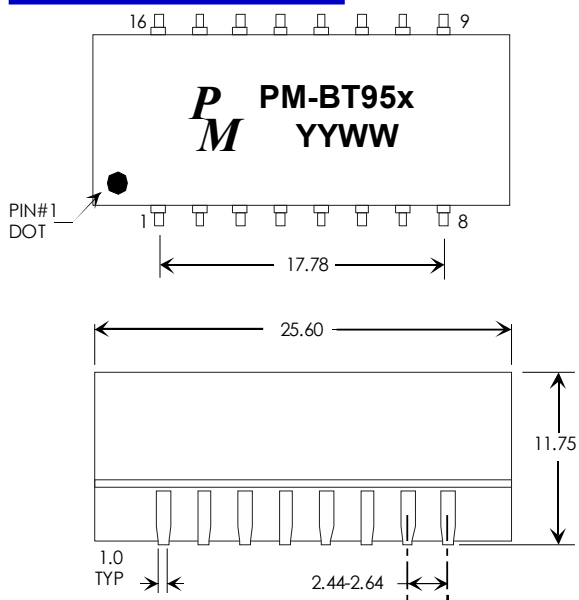


Specifications subject to change without notice. Unless otherwise specified, all tolerances are ±0.25 pmbt 12/2024

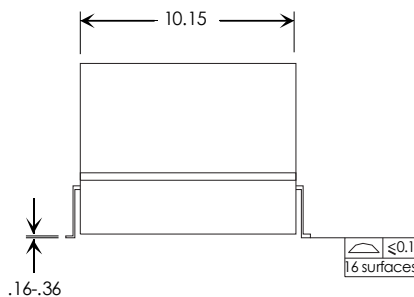


**PM-BT95 PHYSICALS**

**PCBLAYOUT**



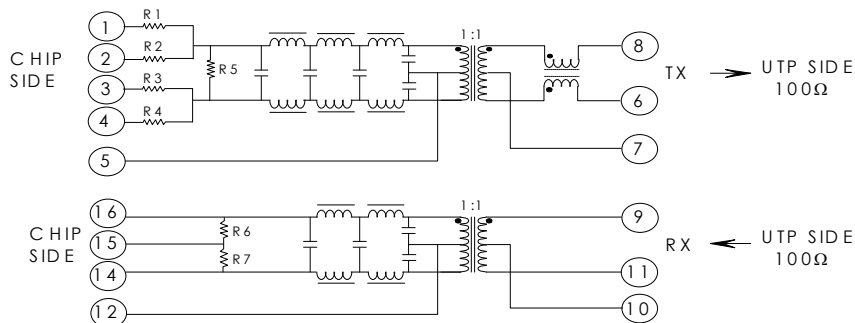
**SUGGESTED PAD LAYOUT**



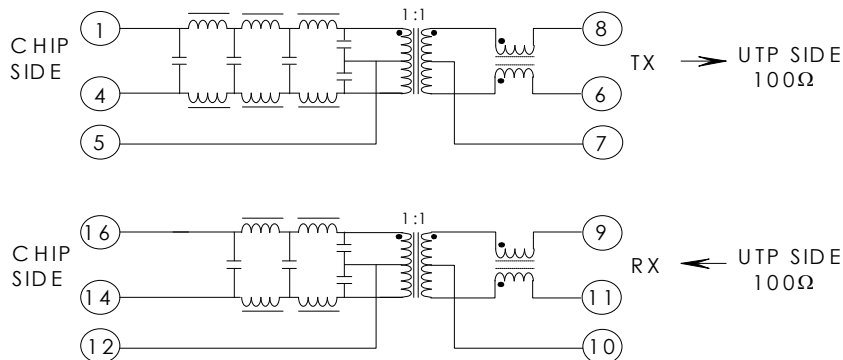
# 10 Base-T DUAL INTERFACE MODULES TRANSFORMERS & FILTERS

RoHS

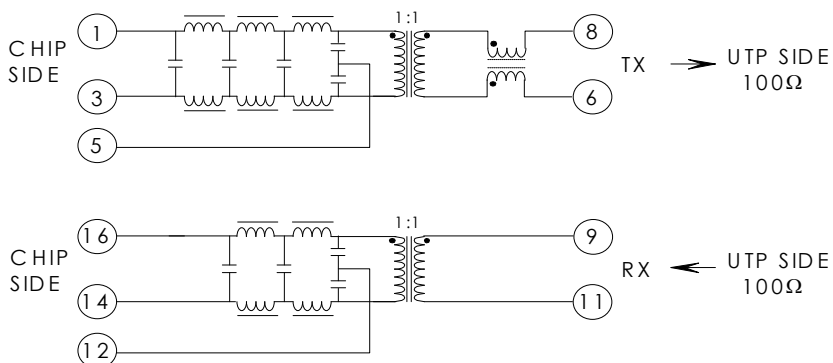
**PM-BT9xx SCHEMATIC " H "**



**PM-BT9xx SCHEMATIC " J "**

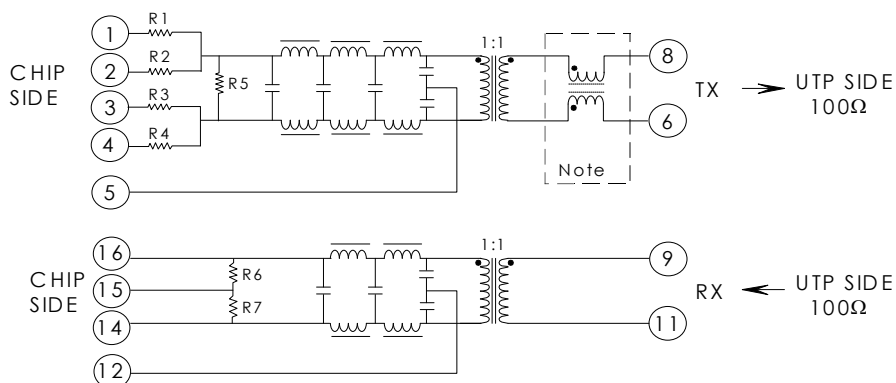


**PM-BT9xx SCHEMATIC " K "**



\* Turn Ratio for transmit: PM-BT94 is 1:1, PM-BT99 is 1:1.414

**PM-BT9xx SCHEMATIC " L "**



\* Note: Common Mode Choke on transmit channel for PM-BT95, PM-BT96, PM-BT97, PM-BT98  
Specifications subject to change without notice.

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**10 Base-T DUAL  
INTERFACE MODULES  
TRANSFORMERS & FILTERS**

RoHS

**CROSS REFERENCE LISTING**

<b><u>PREMIER PART#</u></b>	<b><u>X-REF NAME &amp; PART#</u></b>
PM-BT91	PULSE PE-68025
PM-BT92	PULSE PE-68026
PM-BT93	PULSE PE-68027
PM-BT94	PULSE PE-68056
PM-BT95	PULSE E2001
PM-BT96	PULSE E2003
PM-BT98	PULSE E2007
PM-BT99	PULSE E2009