

10 Base-T DUAL INTERFACE MODULES TRANSFORMERS & FILTERS

- ① Designed for IEEE 802.3 10 Base-T
- ② Compact Standard DIL OR SIP Packages
- ③ Performs Impedance Match + Filtering + Isolation
- ④ 2000Vrms Minimum Isolation Voltage
- ⑤ Low Insertion Loss
- ⑥ 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 ¹	1.0	1.0	15	30	4.0	7	6	19	14	32	20	35	31	17	2000	C
PM-BT04 ^{1,2}	4.5	1.0	15	35	2.0	7	5	18	11	30	16	33	26	17	2000	D
PM-BT05 ¹	1.0	1.0	15	35	2.0	7	5	18	11	30	16	33	26	17	2000	E
PM-BT06 ¹	1.0	1.0	15	30	4.0	7	6	19	14	32	20	35	31	17	2000	F
PM-BT07 ¹	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

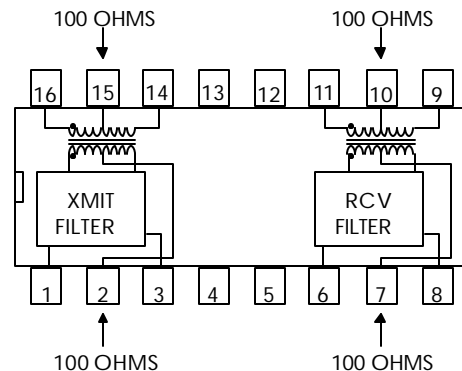
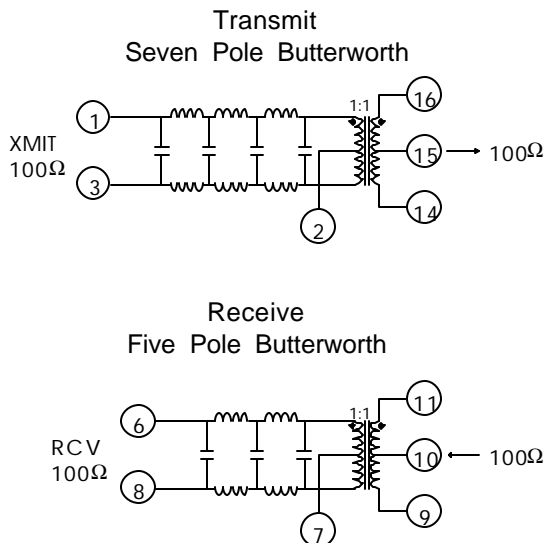
PART NUMBER	Insertion Loss to 10MHz (dB Max)	Return Loss .1 to 10MHz (dB Min.)		Crosstalk (dB Min.) MHz		Group Delay Change 5-10MHz (ns Max.)	Attenuation (dB Min @ MHz)			Common mode rejection (dB Min) MHz			Pri to Sec Isolation (Vrms Min)	Schematic
		100 W	98±13 W	5-10	10-50		30	50-100	5-10	50	100			
	T	R	T or R	5-10	50	100								
PM-BT434 ⁽¹⁾	-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"



10 Base-T DUAL INTERFACE MODULES TRANSFORMERS & FILTERS

- 1 Available in enhanced or standard design version
- 2 235°C peak infrared reflow temperature rating
- 3 Extended temperature Version *
- 4 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	-30	-55	-50		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 (W)

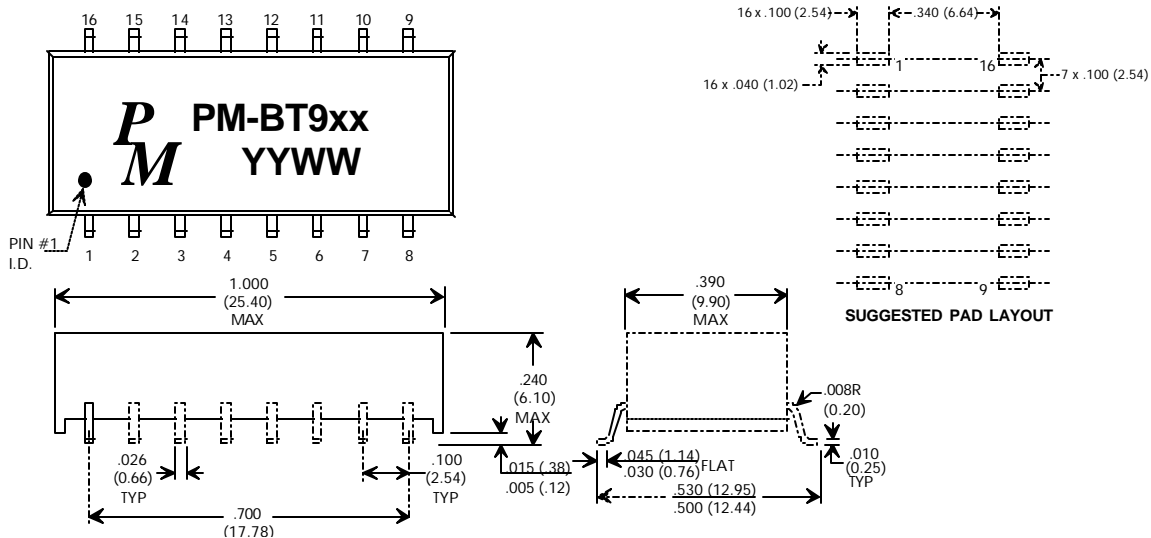
PART NUMBER	IC Manufacturer	R1	R2	R3	R4	R5	R6	R7
PM-BT91	AMD	61.9	422	61.9	422	1210	49.9	49.9
PM-BT92	Various	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PM-BT93	National	274	66.5	66.5	274	806	49.9	49.9
PM-BT95	National	348	53.6	53.6	348	806	49.9	49.9
PM-BT96	AMD	61.9	422	61.9	422	1210	49.9	49.9
PM-BT97	LSI	390	63.4	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: For Extended Temperature version (-40°C to +85°C)
Add "E" at the end of part # example: PM-BTxxxE

PM-BT9XX PHYSICALS

PHYSICAL DIMENSIONS DIMENSIONS IN INCHES (mm)

PCB LAYOUT



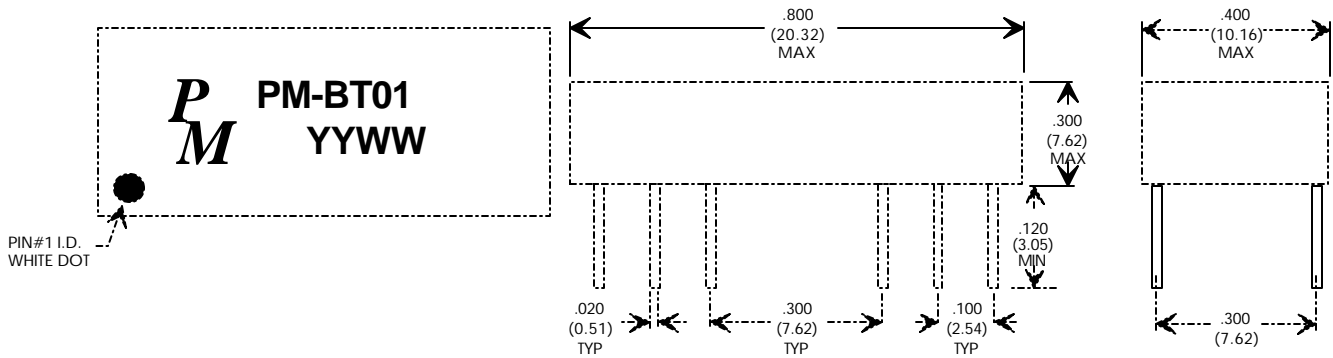
Specifications subject to change without notice.

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PM-BT01 MECHANICAL

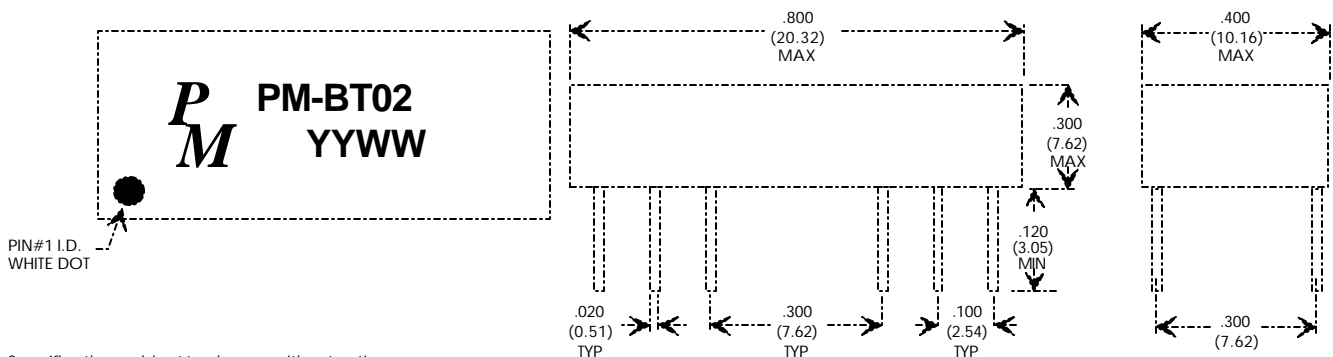
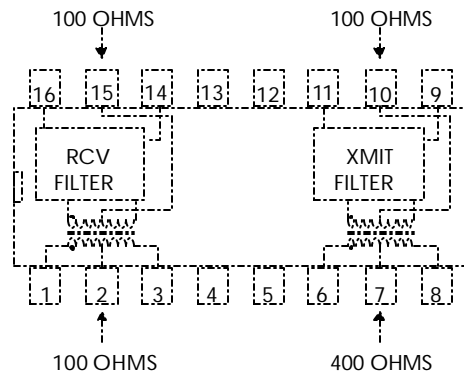
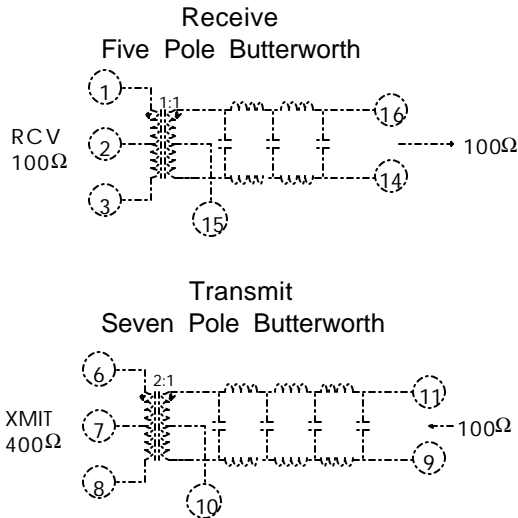
PHYSICAL DIMENSIONS DIMENSIONS IN INCHES (mm)



PM-BT02 PHYSICALS

SCHEMATIC "B"

SCHEMATIC "B"



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10 Base-T DUAL INTERFACE MODULES TRANSFORMERS & FILTERS

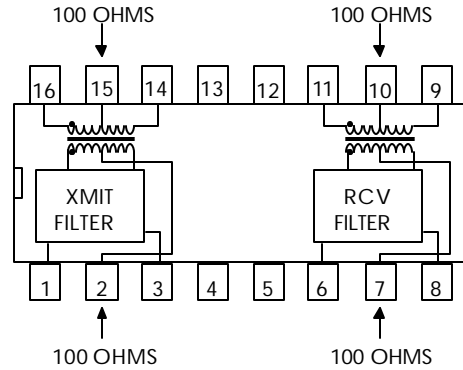
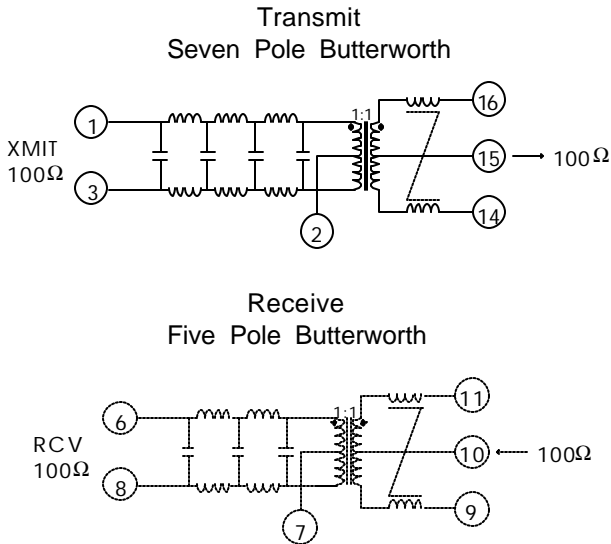
PM-BT03 PHYSICALS

SCHEMATIC "C"

SCHEMATIC "C"

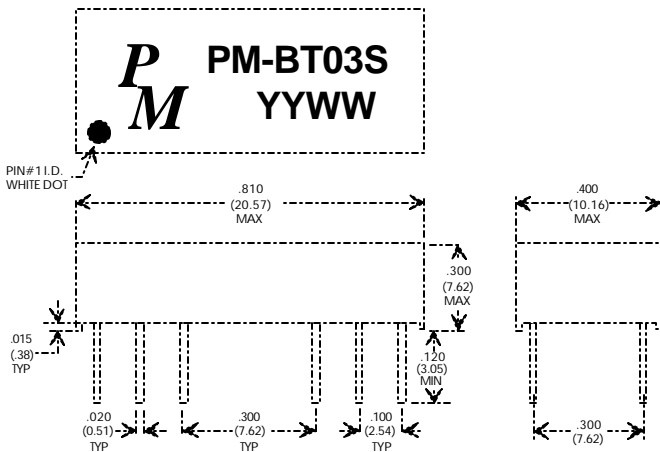
TYPICAL COMMON MODE CHOKE:

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

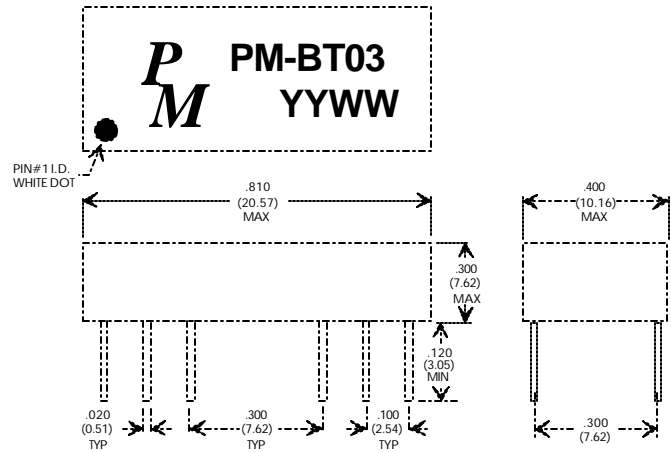


PHYSICAL DIMENSIONS DIMENSIONS IN INCHES (mm)

PM-BT03S WITH STANDOFFS



PM-BT03 WITHOUT STANDOFFS



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10 Base-T DUAL INTERFACE MODULES TRANSFORMERS & FILTERS

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

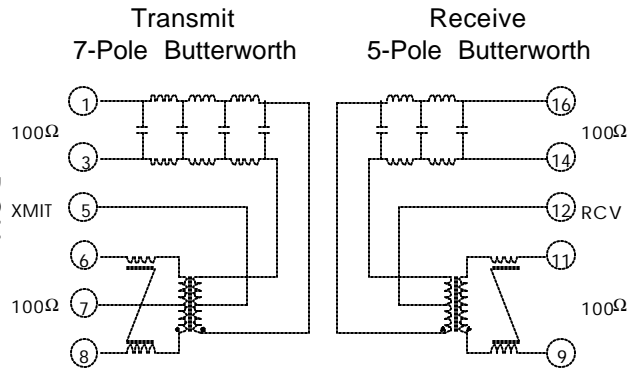
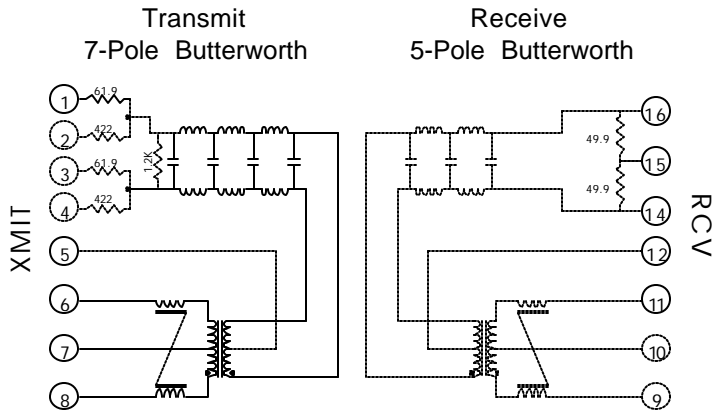
RETURN LOSS:

Transmit: 15dB min from 5 to 10MHz

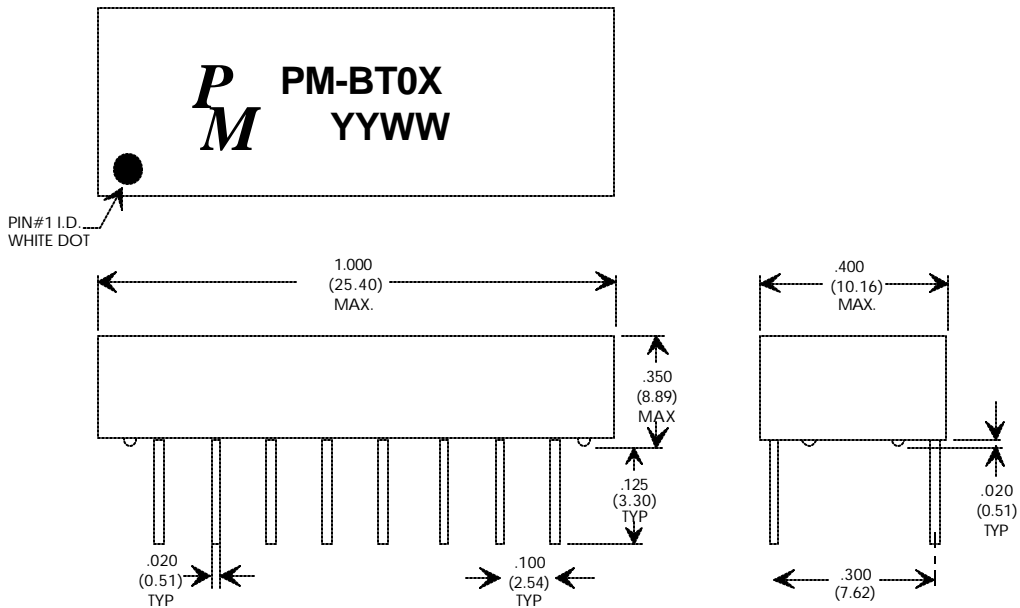
Receive: 15dB min from 5 to 10MHz

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

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

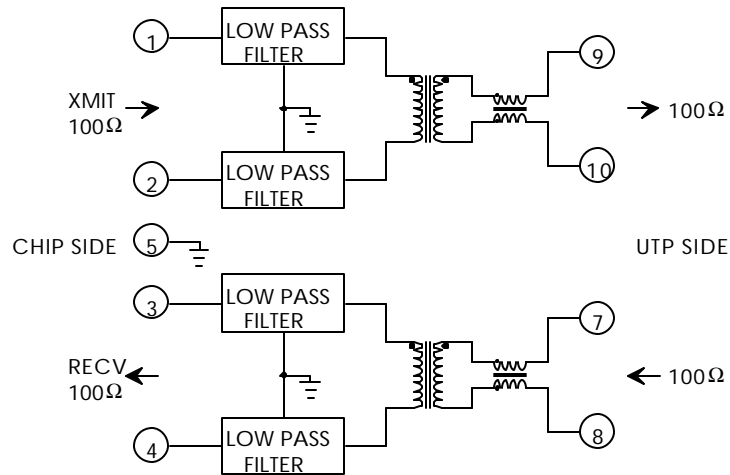


PHYSICAL DIMENSIONS DIMENSIONS IN INCHES (mm)

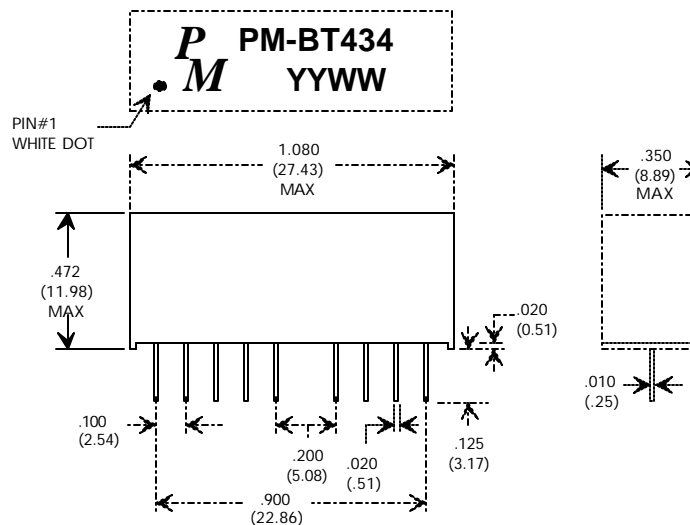


**SCHEMATIC
"F1"**

SCHEMATIC DIAGRAM



PHYSICAL DIMENSIONS DIMENSIONS IN INCHES (mm)



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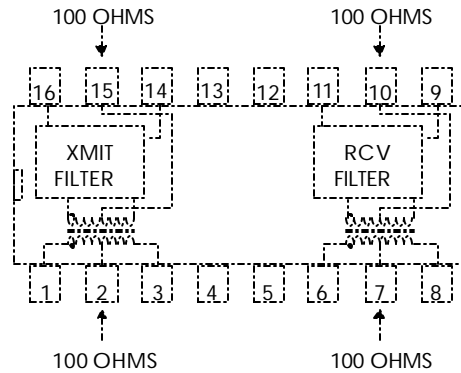
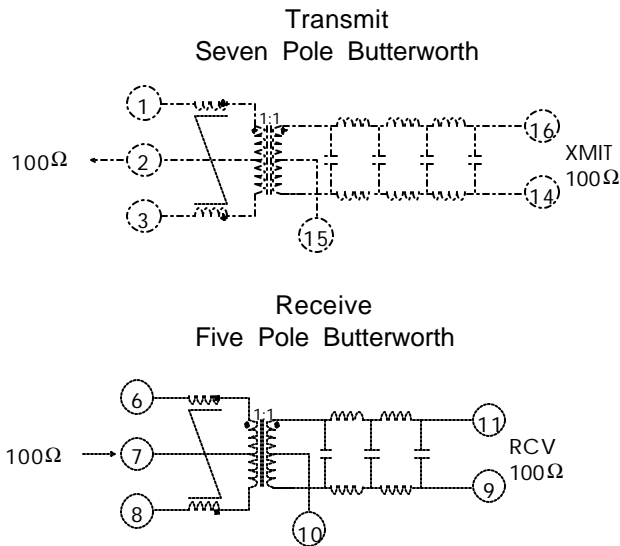
PM-BT06 PHYSICALS

SCHEMATIC "F"

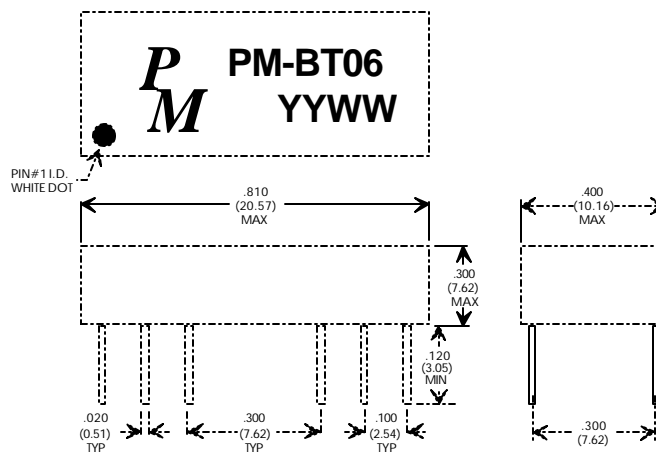
SCHEMATIC "F"

TYPICAL COMMON MODE CHOKE:

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



PHYSICAL DIMENSIONS DIMENSIONS IN INCHES (mm)



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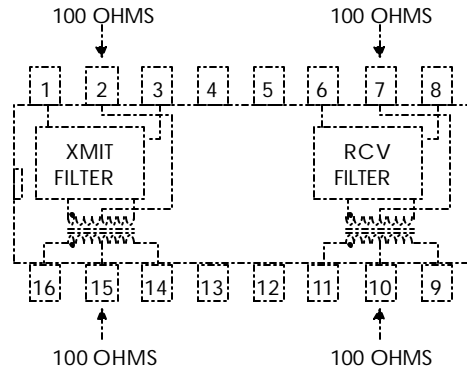
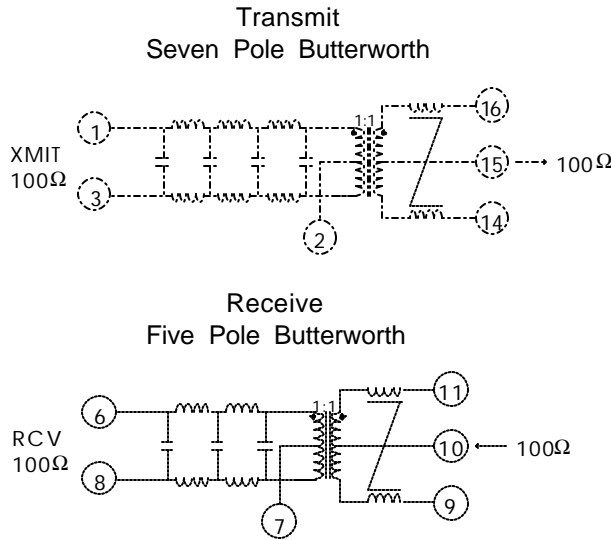
PM-BT07 PHYSICALS

SCHEMATIC "G"

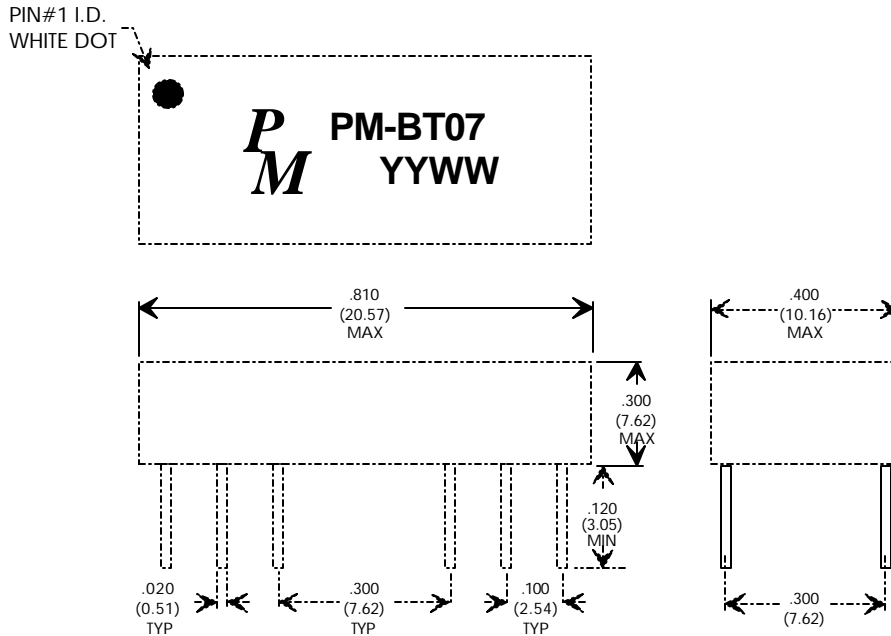
SCHEMATIC "G"

TYPICAL COMMON MODE CHOKE:

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



PHYSICAL DIMENSIONS DIMENSIONS IN INCHES (mm)

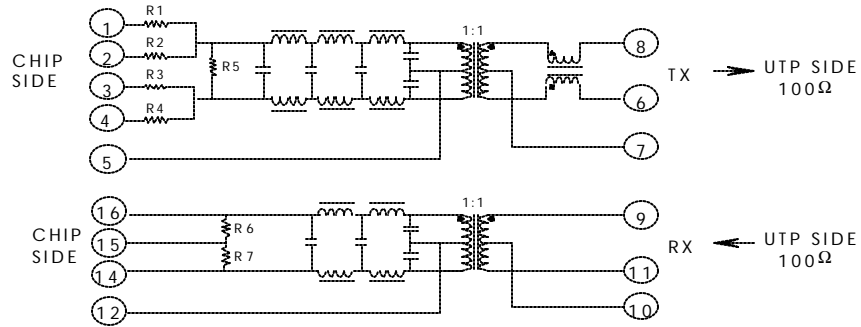


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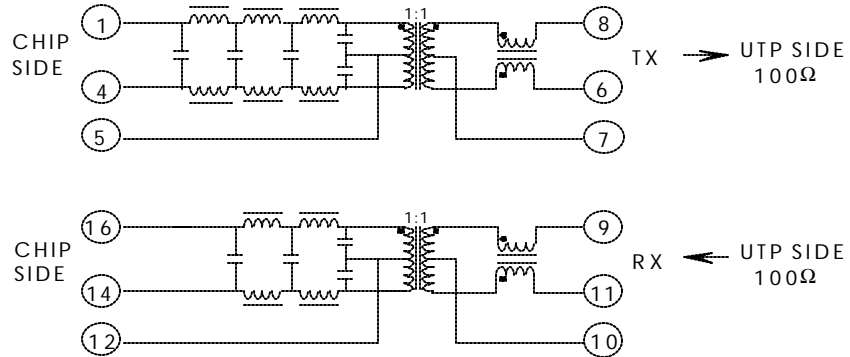
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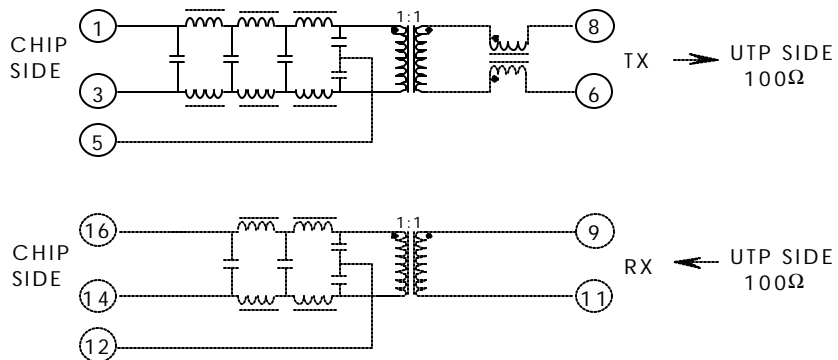
PM-BT9xx SCHEMATIC " H "



PM-BT9xx SCHEMATIC " J "

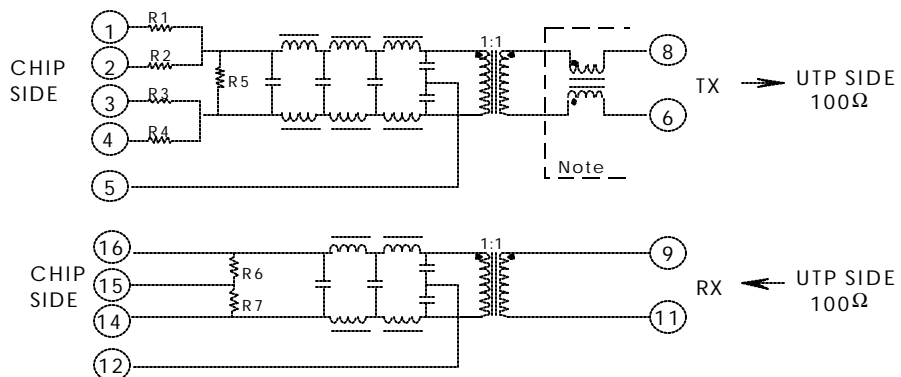


PM-BT9xx SCHEMATIC " K "



* 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
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10 Base-T DUAL INTERFACE MODULES TRANSFORMERS & FILTERS

CROSS REFERENCE LISTING

<u>PREMIER PART#</u>	<u>X-REF NAME & PART#</u>
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