

# FCC PART68 VOICE/DATA COUPLING TRANSFORMERS

## FEATURES:

- ① Designed to meet FCC Part 68
- ② Designed for V.29, V.32, V.32 bis & V.fast apps.
- ③ Low Profile Through Hole Packages
- ④ 1500 or 3000Vrms Isolation Voltage Available

## GENERAL SPECIFICATIONS:

Longitudinal Balance:  
 60 to 1000 Hz ..... 60 dB Min.  
 1000 to 4000 Hz ..... 40 dB Min.  
 Turns Ratio (Pri:Sec) ..... 1:1 ± 2%

\* DESIGNED TO MEET SUPPLEMENTARY INSULATION REQUIREMENTS FOR A PRIMARY CIRCUIT AS DEFINED BY IEC-950, EN60950, UL1950/CSA950

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

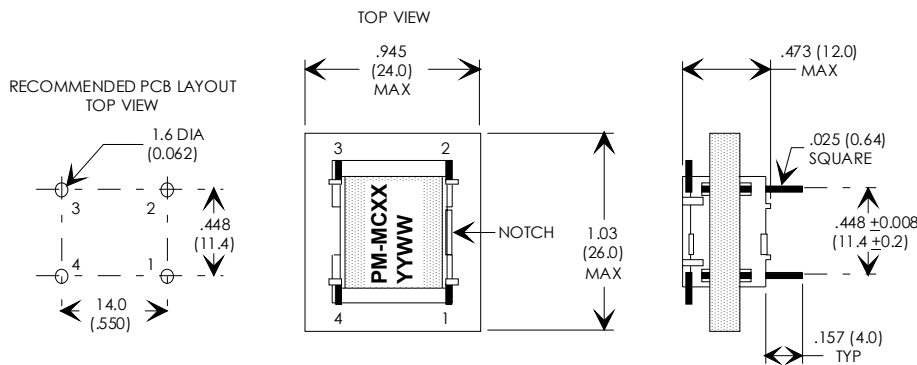
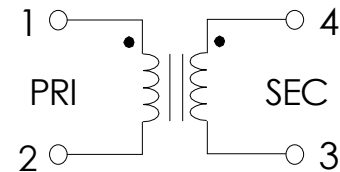
| PART NUMBER | Modem Speed up to | Primary DC Current (mA Max) | DCR ( $\Omega \pm 10\%$ ) |     | Pri = 600 $\Omega$ with Load of ( $\Omega$ ) | Ins. Loss @ 1KHz (dB Max.) | Harm Dist @ 300Hz (% Typ.) | Ret Loss @ 1800Hz (dB Min.) | Frequency Response ( $\pm$ dB) |          | HI-POT Vrms |
|-------------|-------------------|-----------------------------|---------------------------|-----|--|----------------------------|----------------------------|-----------------------------|--------------------------------|----------|-------------|
|             |                   |                             | Pri                       | Sec |  |                            |                            |                             | 300-600Hz                      | 600-3500 |             |
| PM-MC01     | V.29              | 100                         | 108                       | 120 | 470  | 2.5                        | 0.5                        | 13.0                        | 2.5                            | 1.0      | 1500        |
| PM-MC04     | V.29              | 100                         | 108                       | 120 | 470  | 2.5                        | 0.5                        | 13.0                        | 2.5                            | 1.0      | 3000        |
| PM-MC02     | V.32 bis          | 0                           | 108                       | 120 | 374  | 2.5                        | 0.5                        | 25.0                        | 0.25                           | 0.25     | 1500        |
| PM-MC03     | V.34              | 0                           | 150                       | 150 | 301  | 3.0                        | 0.5                        | 25.0                        | 0.25                           | 0.25     | 1500        |
| PM-MC05*    | V.34, 90          | 0                           | 164                       | 168 | 301  | 3.2                        | 0.5                        | 20.0                        | 0.25                           | 0.25     | 1875        |

## PACKAGE

## SCHEMATIC

## PHYSICAL DIMENSIONS .... DIMENSIONS IN mm (inches)

## SCHEMATIC DIAGRAM



# FCC PART68 VOICE/DATA COUPLING TRANSFORMERS

## FEATURES:

- ① Designed to meet FCC Part 68
- ② Designed for V.29, V.32, V.32 bis & V.fast apps.
- ③ For 56.6kbps technologies
- ④ Developed for PCMCIA Type II Card

## GENERAL SPECIFICATIONS:

Longitudinal Balance:  
 200 to 1000 Hz ..... 40 dB Min.  
 1000 to 4000 Hz ..... 60 dB Min.  
 Turns Ratio (Pri:Sec) ..... 1:1 ± 2%

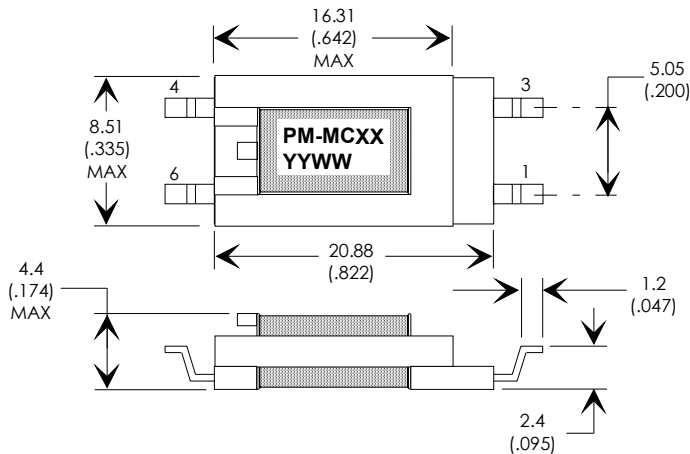
### ELECTRICAL SPECIFICATIONS AT 25°C - OPERATING TEMPERATURE RANGE 0°C TO 70°C

| PART NUMBER | Modem Speed up to | Primary DC Current (mA Max) | DCR ( $\Omega \pm 10\%$ ) |     | Pri = 600 $\Omega$ with Load of ( $\Omega$ ) | Ins. Loss @ 1KHz (dB Max.) | Harm Dist @ 600Hz (db MAX) | Ret Loss @ 1800Hz (dB Min.) | Frequency Response ( $\pm$ dB) 200Hz - 4000Hz | HI-POT Vrms |
|-------------|-------------------|-----------------------------|---------------------------|-----|--|----------------------------|----------------------------|-----------------------------|---|-------------|
|             |                   |                             | Pri                       | Sec |  |                            |                            |                             |   |             |
| PM-MC10     | V.90              | 0                           | 155                       | 145 | 297  | 3.5                        | -82                        | 14.0                        | 0.20  | 1650        |
|             |                   |                             |                           |     |  |                            |                            |                             |   |             |
|             |                   |                             |                           |     |  |                            |                            |                             |   |             |
|             |                   |                             |                           |     |  |                            |                            |                             |   |             |

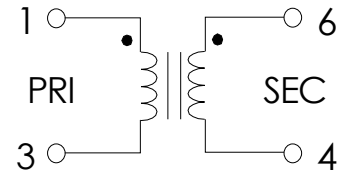
## PACKAGE

## SCHEMATIC

### PHYSICAL DIMENSIONS .... DIMENSIONS IN mm (inches)



### SCHEMATIC DIAGRAM



# FCC PART68 VOICE/DATA COUPLING TRANSFORMERS

## FEATURES:

- ① Designed to meet FCC Part 68
- ② Designed for V.29, V.32, V.32 bis & V.fast apps.
- ③ Low Profile SMD & Through Hole Packages
- ④ 1250 & 1500Vrms Isolation Voltage

## GENERAL SPECIFICATIONS:

Longitudinal Balance:  
 60 to 1000 Hz ..... 60 dB Typ.  
 1000 to 4000 Hz ..... 40 dB Typ.  
 MC26/27 200 to 4000 Hz .....60 dB Typ.  
 Turns Ratio (Pri:Sec) ..... 1:1 ± 2%

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

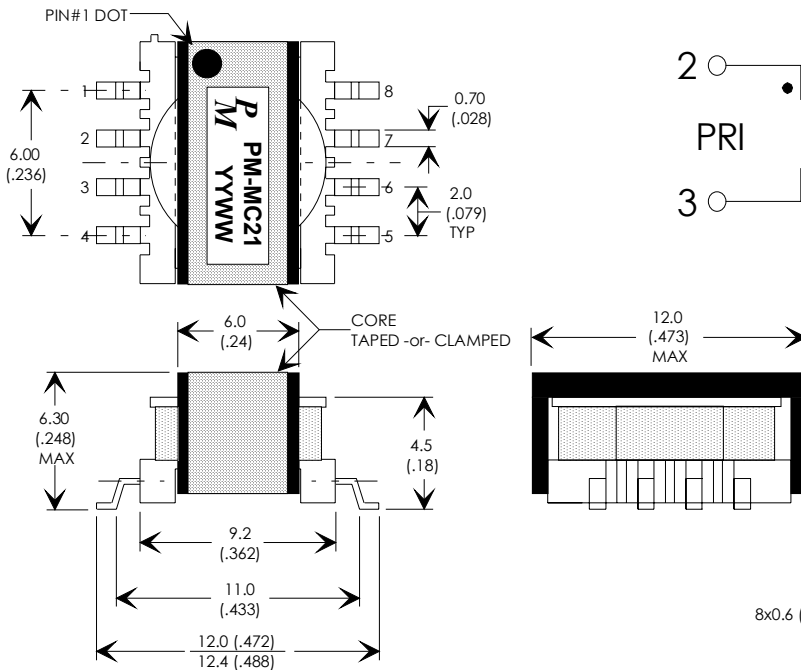
| PART NUMBER | Package/Schematic | Primary DC Current (mA Max) | DCR (Ω MAX) |     | Pri = 600 Ω with Load of (Ω) | Ins. Loss @ 1KHz (dB Max.) | Harm Dist @ 300Hz (% Typ.) | Ret Loss @ 1000Hz (dB Min.) | Frequency Response (±dB) |          | HI-POT Vrms |
|-------------|-------------------|-----------------------------|-------------|-----|------------------------------|----------------------------|----------------------------|-----------------------------|--------------------------|----------|-------------|
|             |                   |                             | Pri         | Sec |                              |                            |                            |                             | 300-600Hz                | 600-3500 |             |
| PM-MC21     | ER11-SMD          | 0                           | 67          | 85  | 487                          | 1.50                       | 0.5                        | 15.0                        | 0.50                     | 0.50     | 1500        |
| PM-MC26*    | EP7-THRU          | 0                           | 68          | 85  | 475                          | 1.25                       | 0.5                        | 26.0                        | 0.25                     | 0.25     | 1250        |
| PM-MC27*    | EP7-SMD           | 0                           | 68          | 85  | 475                          | 1.25                       | 0.5                        | 26.0                        | 0.25                     | 0.25     | 1250        |

NOTE: \* PRIMARY INDUCTANCE = 700mH MINIMUM

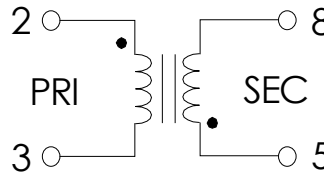
### PACKAGE ER11-SMD

### SCHEMATIC ER11-SMD

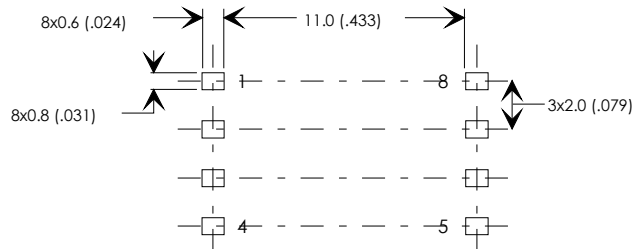
### PHYSICAL DIMENSIONS .... DIMENSIONS IN mm (inches)



### SCHEMATIC DIAGRAM



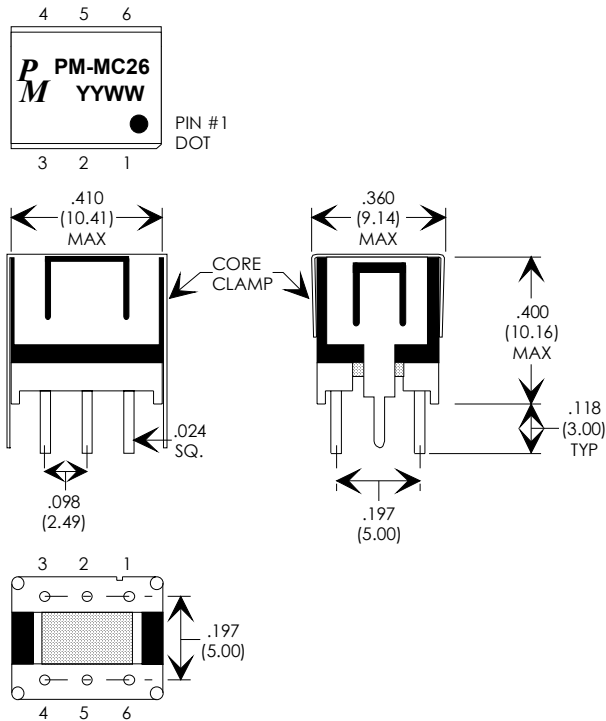
### RECOMMENDED PCB LAYOUT



# FCC PART 68 VOICE/DATA COUPLING TRANSFORMERS

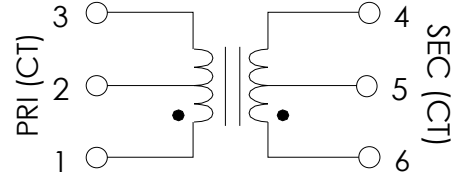
## PACKAGE EP7-THRU

### PHYSICAL DIMENSIONS .... DIMENSIONS IN mm (inches)



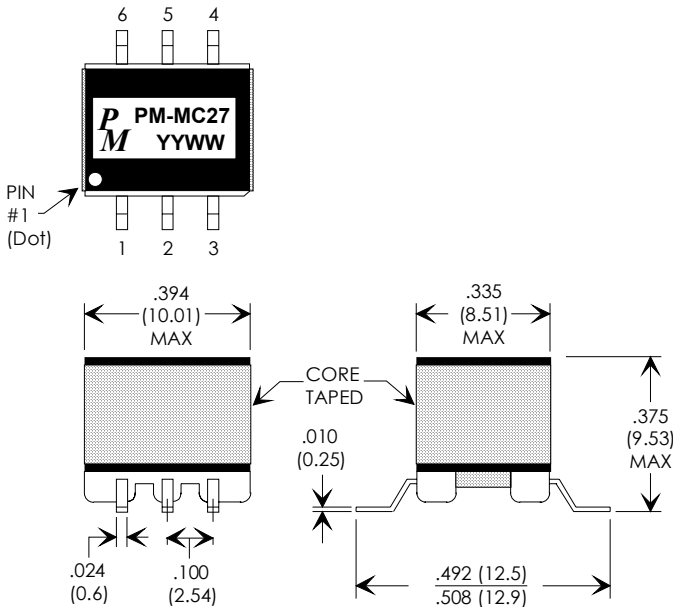
## SCHEMATIC EP7-THRU

### SCHEMATIC DIAGRAM



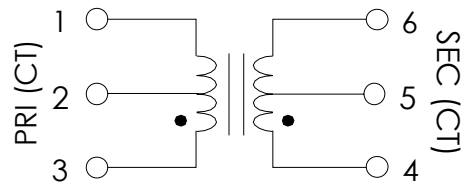
## PACKAGE EP7-SMD

### PHYSICAL DIMENSIONS .... DIMENSIONS IN mm (inches)

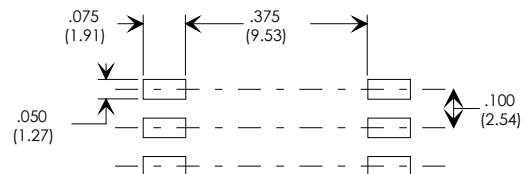


## SCHEMATIC EP7-SMD

### SCHEMATIC DIAGRAM



### RECOMMENDED PCB LAYOUT



Specifications subject to change without notice.

pmmc 11/04

# HI-ISOLATION VOICE/DATA COUPLING TRANSFORMER

## FEATURES:

- ① Designed to meet BS6305 circuit requirements
- ② Encapsulated Through Hole Package
- ③ 3000Vrms Isolation Voltage
- ④ Turns Ratio (Pri:Sec) ..... 1:1 ± 2%

## GENERAL SPECIFICATIONS:

Turns Ratio (Pri:Sec) ..... 1:1 ± 2%  
 OCL Inductance:  
 Lp @ 200Hz, 10mV, 0mAdc ... 2.5H Min.  
 Parallel AC Resistance ..... 4 - 12K Ohms

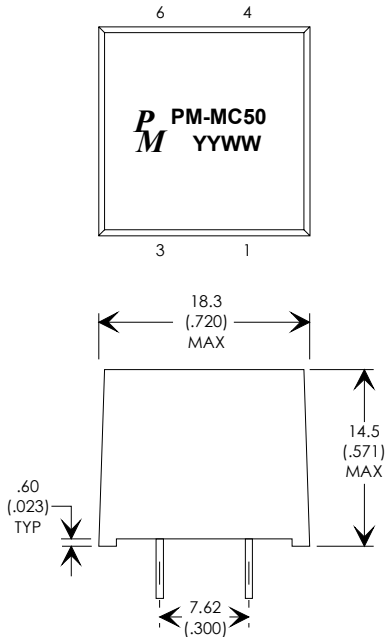
### ELECTRICAL SPECIFICATIONS AT 25°C - OPERATING TEMPERATURE RANGE 0°C TO 70°C

| PART NUMBER | Package/Schematic | Primary DC Current (mA Max) | DCR ( $\Omega \pm 15\%$ ) |      | Pri/Sec Impedance w/load=470 $\Omega$ 1KHz ( $\Omega$ ) | Ins. Loss @ 2KHz (dB Max.) | Harm Dist @ 400Hz (dB Max.) | Ret Loss .30 - 4 KHz (dB Min.) | Frequency Response ( $\pm$ dB) |          | HI-POT Vrms |
|-------------|-------------------|-----------------------------|---------------------------|------|---|----------------------------|-----------------------------|--------------------------------|--------------------------------|----------|-------------|
|             |                   |                             | Pri                       | Sec  |   |                            |                             |                                | 200-600Hz                      | 600-4000 |             |
| PM-MC50     | DIP-4             | 0                           | 70.4                      | 70.4 | 600/600   | 1.50                       | -87                         | 24.0                           | 0.40                           | 0.40     | 3000        |
|             |                   |                             |                           |      |   |                            |                             |                                |                                |          |             |
|             |                   |                             |                           |      |   |                            |                             |                                |                                |          |             |

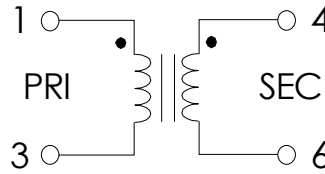
### PACKAGE DIP-4

### SCHEMATIC DIP-4

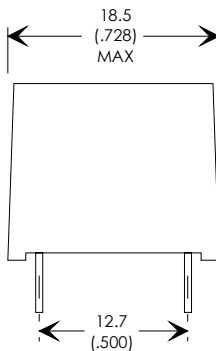
### PHYSICAL DIMENSIONS .... DIMENSIONS IN mm (inches)



### SCHEMATIC DIAGRAM



PART IS 100% REVERSABLE  
 I.E. IT CAN BE INSERTED INTO THE  
 PCB EITHER WAY



# V.90 LOW DISTORTION VOICE/DATA COUPLING TRANSFORMER

## FEATURES:

- ❶ COMPATIBLE WITH V.90 TECHNOLOGY
- ❷ Low Profile Through Hole Package
- ❸ 1500 Vrms Isolation Voltage

## GENERAL SPECIFICATIONS:

Longitudinal Balance:  
 200 to 1000 Hz ..... 60 dB Min.  
 1000 to 4000 Hz ..... 40 dB Min.  
 Turns Ratio (Pri:Sec) ..... 1:1 ± 2%

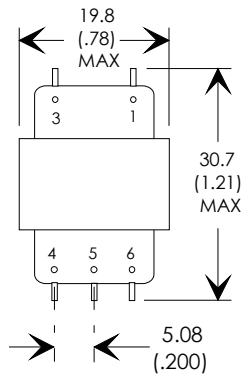
### ELECTRICAL SPECIFICATIONS AT 25°C - OPERATING TEMPERATURE RANGE 0°C TO 70°C

| PART NUMBER | Package/Schematic | Primary DC Current (mA Max) | DCR ( $\Omega \pm 15\%$ ) |     | Pri/Sec Impedance 1KHz ( $\Omega$ ) | Ins. Loss @ 1KHz (dB) | Harm Dist @ 600Hz, -10dBm (dB Typ/Max) | Ret Loss .30 - 3 KHz (dB Min.) | Freq Response ( $\pm$ dB) 200Hz-4000Hz | HI-POT Vrms |
|-------------|-------------------|-----------------------------|---------------------------|-----|-------------------------------------|-----------------------|--|--------------------------------|--|-------------|
|             |                   |                             | Pri                       | Sec |                                     |                       |  |                                |  |             |
| PM-MC60     | DIP-4             | 0                           | 108                       | 120 | 600/374                             | 2 ± .25               | -91/-82                                | 15                             | ±.25                                   | 1500        |
|             |                   |                             |                           |     |                                     |                       |  |                                |  |             |
|             |                   |                             |                           |     |                                     |                       |  |                                |  |             |
|             |                   |                             |                           |     |                                     |                       |  |                                |  |             |

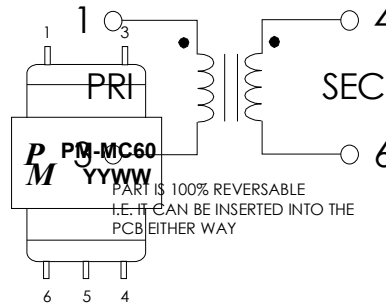
### PACKAGE DIP-4

### SCHEMATIC DIP-4

### PHYSICAL DIMENSIONS .... DIMENSIONS IN mm (inches)



### SCHEMATIC DIAGRAM



# AUDIO COUPLING TRANSFORMER

## FEATURES:

- ① Low Profile SMD Package
- ② 1500 Vrms Isolation Voltage
- ③ Turns Ratio (Pri:Sec) 1:1 ± 2%

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

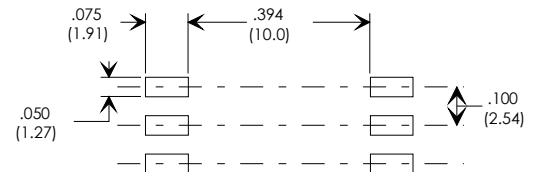
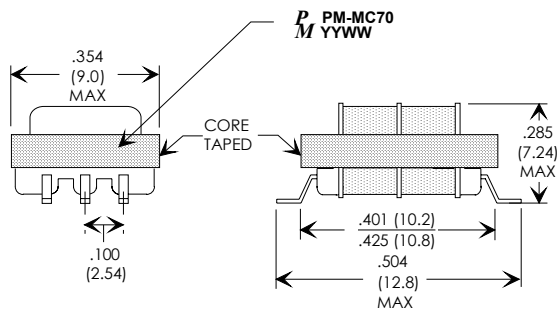
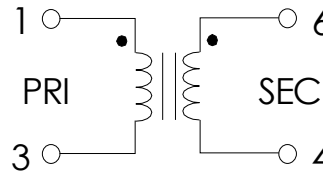
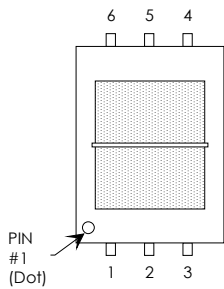
| PART NUMBER | Package/<br>Schematic | INDUCTANCE<br>(H MIN) | D.C. RESISTANC<br>Pri/Sec<br>(Ω) |      | PRIMARY<br>Impedance<br>600Ω Sec' Load | HI-POT<br>Vrms |
|-------------|-----------------------|-----------------------|----------------------------------|------|--|----------------|
| PM-MC 70    | SMD 6                 | 0.75                  | 65.0                             | 65.0 | 600                                    | 1500           |
|             |                       |                       |                                  |      |  |                |
|             |                       |                       |                                  |      |  |                |

## PACKAGE

## SCHEMATIC

### PHYSICAL DIMENSIONS .... DIMENSIONS IN mm (inches)

### SCHEMATIC DIAGRAM



# POCKET/LAPTOP MODEM TRANSFORMERS

## FEATURES:

- ① Designed to meet FCC Part 68
- ② Designed for V.29, V.32, V.32 bis & V.34 bis.
- ③ Small size/ Low cost

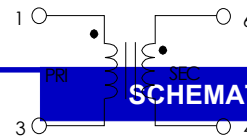
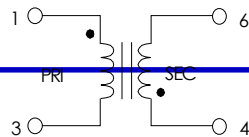
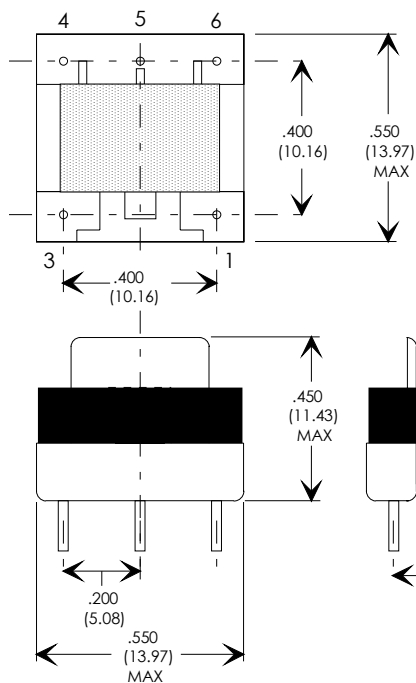
## GENERAL SPECIFICATIONS:

Longitudinal Balance:  
 60 to 1000 Hz ..... 60 dB Min.  
 1000 to 4000 Hz -102, 104, 105..... 60 dB Min.  
 1000 to 4000 Hz ..... 40 dB Min.  
 Turns Ratio (Pri:Sec) ..... 1:1 ± 2%  
 Turns Ratio (Pri:Sec) -101 & 107.....0.92:1 ± 2%

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

| PART NUMBER | Modem Speed up to | Primary DC I | DCR ( $\Omega \pm 10\%$ ) |      | Pri = 600 $\Omega$ with Load of ( $\Omega$ ) | Ins. Loss @ 1KHz (dB Max.) | Harm Dist @ 600Hz (dB MAX) | Ret Loss @ 300Hz (dB Min.) | Freq Response ( $\pm$ dB) 300Hz - 3500Hz | HI-POT Vrms | Schematic |
|-------------|-------------------|--------------|---------------------------|------|--|----------------------------|----------------------------|----------------------------|--|-------------|-----------|
|             |                   |              | Pri                       | Sec  |  |                            |                            |                            |  |             |           |
| PM-MC101    | V.29              | 0            | 46.5                      | 67.6 | 600  | 1.25                       | -68                        | 21                         | 0.25                                     | 1250        | B         |
| PM-MC102    | V.29              | 0            | 52                        | 59   | 600  | 1.50                       | -68                        | 23                         | 0.50                                     | 3750        | A         |
| PM-MC103    | V.32bis           | 0            | 80                        | 87   | 442  | 2.0                        | -76                        | 21                         | 0.25                                     | 1250        | B         |
| PM-MC104    | V.32bis           | 0            | 86                        | 91   | 442  | 2.0                        | -76                        | 22                         | 0.50                                     | 3750        | A         |
| PM-MC105    | V.34bis           | 0            | 152                       | 151  | 348  | 3.25                       | -83.6                      | 20                         | 0.50                                     | 3750        | A         |
| PM-MC106    | V.34bis           | 0            | 135                       | 143  | 324  | 3.0                        | -82                        | 35                         | 0.25                                     | 1250        | B         |
| PM-MC107    | V.32              | 0            | 52                        | 75   | 600  | 1.15                       | -71                        | 22                         | 0.20                                     | 1250        | B         |
| PM-MC108    | V.32bis           | 0            | 105                       | 105  | 402  | 2.25                       | -76                        | 26                         | 0.13                                     | 1250        | B         |

## PACKAGE



SCHEMATIC "A"

SCHEMATIC "B"





# VOICE/DATA COUPLING TRANSFORMERS

## CROSS REFERENCE LISTING

| <u>PREMIER PART#</u> | <u>X-REF NAME &amp; PART#</u> |
|----------------------|-------------------------------|
| PM-MC01              | MIDCOM 671-8001               |
| PM-MC03              | MIDCOM 671-8039,671-8079      |
| PM-MC05              | MIDCOM 82098                  |
| PM-MC26              | MIDCOM 671-5932               |
| PM-MC27              | MIDCOM 671-8243               |
| PM-MC50              | CRITCHLEY CWC 9000            |
| PM-MC60              | MIDCOM 671-8262               |
| PM-MC10              | MIDCOM 671-8481               |
| PM-MC102             | MIDCOM 671-8240               |