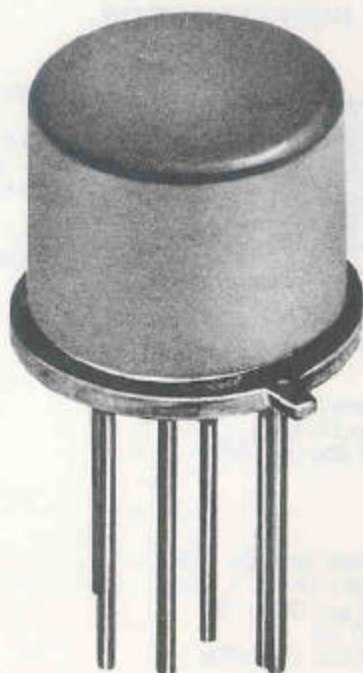


# VARI-L

TO-228/TO-232  
Wideband  
RF/Pulse  
Transformers  
.25-200 MHz/.5-100 MHz



## DESCRIPTION

The TO series is a line of six TO-5 packaged transformers offering the most common configurations.

These transformers are high reliability devices designed to meet MIL-T-55631. Typical applications are: Interstage coupling, phase detection and pulse transformation.

## LIMITED WARRANTY

Vari-L Company, Inc. warrants its products against defects in parts and workmanship for a period of one year.

## GUARANTEED MINIMUM PERFORMANCE DATA

### SPECIFICATIONS FOR MODEL TO-228

Type: 50 ohm unbalanced  
200 ohm balanced  
symm. DC isolated C.T.

|                                          |         |
|------------------------------------------|---------|
| - 1 dB Bandwidth, MHz                    | .25-200 |
| Midband insertion loss dB                | .75     |
| Amplitude unbalance                      | 1       |
| Phase unbalance<br>(deviation from 180°) | 8       |
| VSWR                                     | 2:1     |

### SPECIFICATIONS FOR MODEL TO-232

Type: 50 ohm unbalanced  
600 ohm balanced  
DC isolated C.T.

|                                          |        |
|------------------------------------------|--------|
| - 1 dB Bandwidth, MHz                    | 5-100  |
| Midband insertion loss dB                | .75    |
| Amplitude unbalance                      | .25    |
| Phase unbalance<br>(deviation from 180°) | 3      |
| VSWR                                     | 2.25:1 |

### NOTE:

- 1 dB bandwidth is measured relative to midband loss.

### ABSOLUTE MAXIMUM RATINGS:

Input power 1 w. limited by  
 $(I_{DC} + I_{RF})Z \leq P_{max}$   
Temperature range - 54°C to +100°C

## ENVIRONMENTAL CONDITIONS

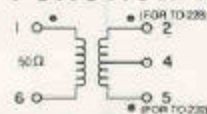
### GUARANTEED ENVIRONMENTAL PERFORMANCE:

All units are designed to meet their specifications over - 54°C to +100°C and after exposure to any or all of the following tests per MIL-STD-202E.

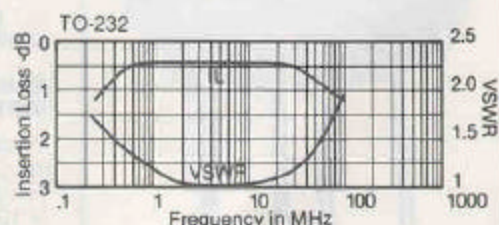
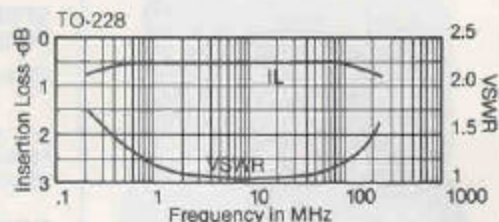
| Exposure                                  | Method | Condition |
|-------------------------------------------|--------|-----------|
| Thermal Shock                             | 107D   | B         |
| Altitude                                  | 105C   | G         |
| H.F. Vibration                            | 204C   | D         |
| Mechanical Shock                          | 213B   | C         |
| Random Vibration<br>(15 minutes per axis) | 214    | IIF       |
| Solderability                             | 208C   |           |
| Terminal Strength                         | 211A   | C         |
| Resistance to<br>Soldering Heat           | 210A   | B         |

Sealed units, meet the requirements of Method 106D of MIL-STD-202E when exposed to humidity.

## FUNCTIONAL SCHEMATIC



## TYPICAL PERFORMANCE



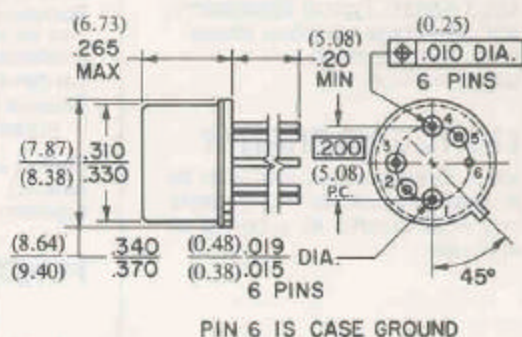
## PACKAGE

### MATERIAL:

Header & Leads: F15 Kovar per  
ASTM Standard F-15-68  
Cover: Nickel 200 per ASTM  
B162-58T

### FINISH:

Header & Leads: Gold per MIL-G-45204, Type I, Grade A, Class 1, over nickel per QQ-N-290, Class 1, Form SB  
Cover: Nickel 200 per ASTM  
B162-58T



TRANSFORMERS