

# Analog Telephony/Modem Couplers

## FEATURES

- Suitable for modem speeds up to V.32bis (14.4 kbps). May be adapted to V.34 (33.6 kbps).
- Total Harmonic Distortion rated -84 dB typ. @ 600 Hz, -10 dBm. (Improved !)
- Insertion Loss rated 1.20 dB typ. @ 2000 Hz.
- Complies with IEC60950 Reinforced safety norms.
- Matches 600 Ohm and complex impedance telephone lines.
- Uses minimal external components for impedance matching.
- Very small PCB footprint (18.3 mm x 18.3 mm).
- Low-profile (12.6mm)
- Industry-standard pin configuration.

## PRODUCT COMPLIANCE

- UL/C-UL recognized file number: E171120
- BABT certificate of recognition: Pending

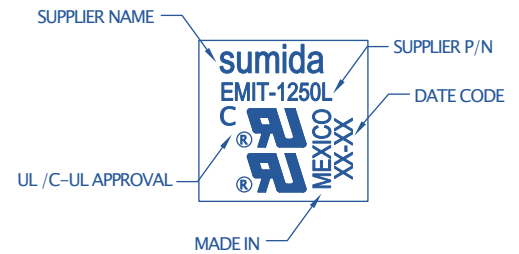
## DESCRIPTION

The Sumida EMIT-1250L is a "Dry" Encapsulated Modem Isolation Transformer suitable for up to V.32bis (14.4 kbps) fax, computer telephony, and other analog modem and voice routing applications compliant with International safety norms.

Newly improved distortion rating for EMIT-1250L may be adaptable to V.34 (33.6 kbps) modem speeds.

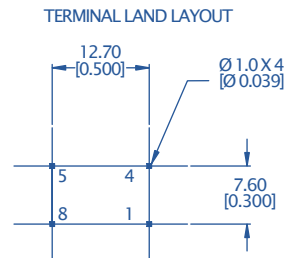
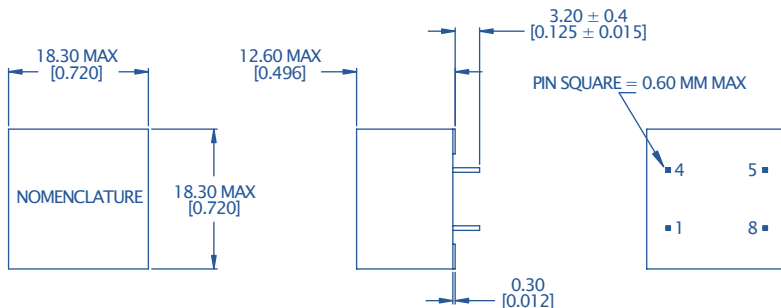
EMIT-1250L has very similar characteristics as the EMIT-1200L with more economical cost.

## NOMENCLATURE (FIG. 1)

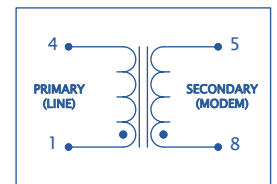


## MECHANICAL DIMENSIONS (FIG. 2)

DIMENSIONS: MILLIMETERS [INCHES]



TERMINAL CONNECTION (BOTTOM VIEW)



INTERCHANGEABLE  
PRIMARY OR SECONDARY

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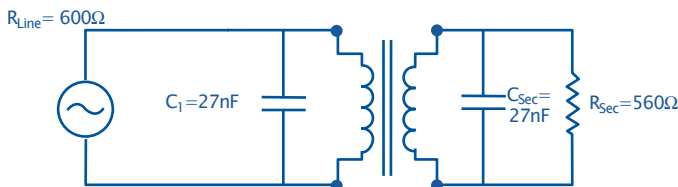
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### ELECTRICAL PERFORMANCE SPECIFICATIONS

| Parameters                     | Conditions                                                                                                        | Min               | Typ        | Max | Units                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------|------------|-----|---------------------------|
| Impedance                      | Reflected on Primary<br>with load on Secondary                                                                    |                   | 600<br>560 |     | Ohms                      |
| Total Harmonic Distortion      | @ 600 Hz, -10 dBm                                                                                                 |                   | -84        | -76 | dB                        |
| Insertion Loss                 | Per IEEE method; @1000 Hz                                                                                         |                   | 1.20       |     | dB                        |
| Return Loss                    | 300 Hz - 4000 Hz<br>Per 600 Ohm Match (Fig.3)<br>Per CTR21 Pan-Euro Match ( Fig.5)                                | 17<br>22          |            |     | dB                        |
| Dielectric Breakdown Isolation | Safety Standard tested 1 min.<br>Production methods applied:<br>HiPot Voltage<br>Duration<br>Trip Leakage Current | 3000<br>3750<br>2 |            | 200 | Vrms<br>Vrms<br>Sec<br>μA |
| Frequency Response             | 200 Hz - 4000 Hz                                                                                                  |                   | ±0.60      |     | dB                        |
| Longitudinal Balance           | Per FCC part 68.310<br>60 Hz - 1000 Hz<br>1000 Hz - 4000 Hz                                                       | 60<br>40          |            |     | dB                        |
| DC Resistance @ 20°C, ±10%     | Primary winding<br>Secondary winding                                                                              |                   | 70<br>70   |     | Ohms                      |
| DC current in Primary          |                                                                                                                   |                   | 0          |     | mADC                      |
| Turns Ratio                    | Primary to Secondary; ±2%                                                                                         |                   | 1:1        |     | Turns                     |
| Operating temperature          |                                                                                                                   | -40               |            | 105 | °C                        |
| Storage temperature            |                                                                                                                   | -40               |            | 125 | °C                        |
| Soldering temperature          | 10 Sec. Max                                                                                                       |                   |            | 260 | °C                        |

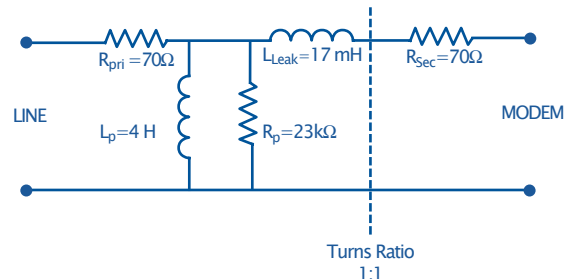
Electrical Performance Specifications (TA = 25°C unless otherwise specified)

### 600 OHM MATCH (FIG.3)



### SCHEMATIC EQUIVALENT (FIG.4)

Typical transformer model @ 1Vrms, 1 kHz



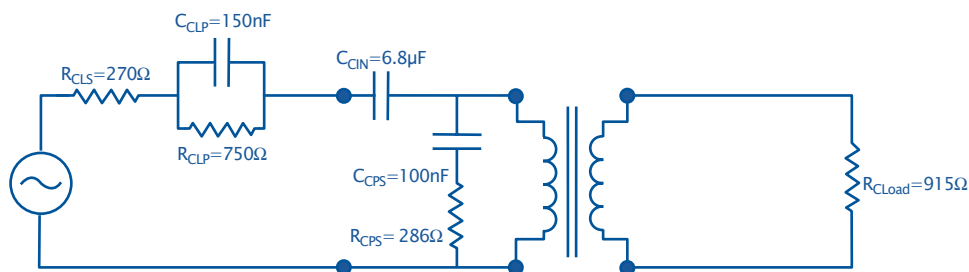
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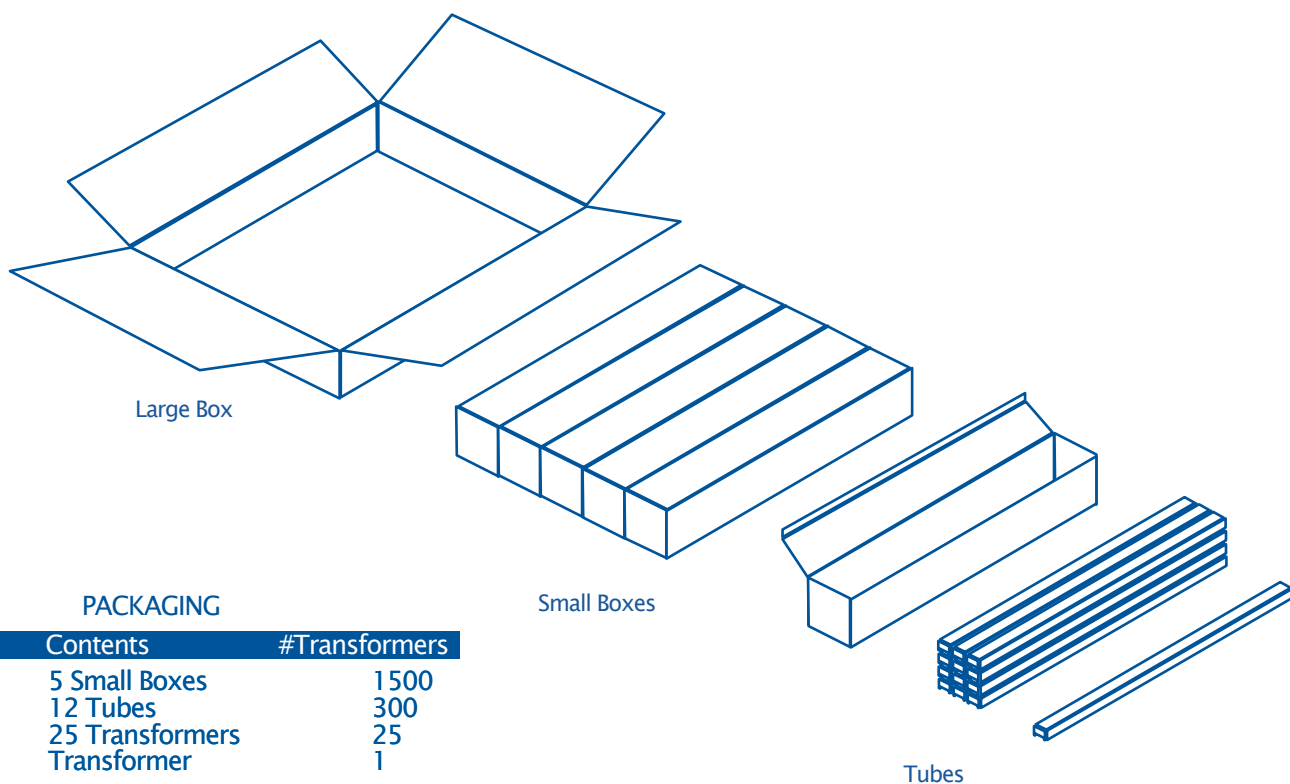


## PAN-EUROPEAN CTR21 MATCH (FIG.5)

(Application circuits available on request for specific national match requirements.)



## STANDARD PACKAGING (FIG.6)

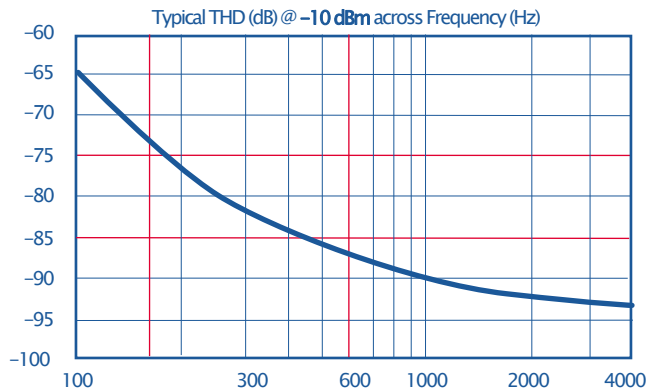


### PACKAGING

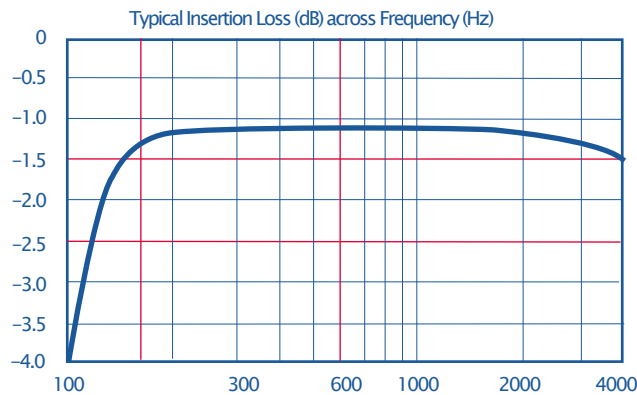
| Material  | Contents        | #Transformers |
|-----------|-----------------|---------------|
| Large Box | 5 Small Boxes   | 1500          |
| Small Box | 12 Tubes        | 300           |
| Tube      | 25 Transformers | 25            |
| --        | Transformer     | 1             |



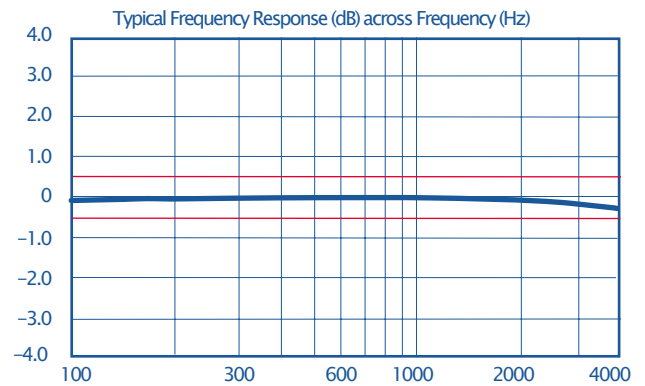
## TOTAL HARMONIC DISTORTION



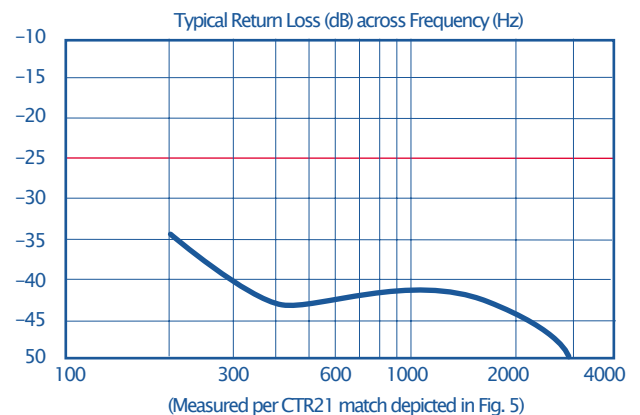
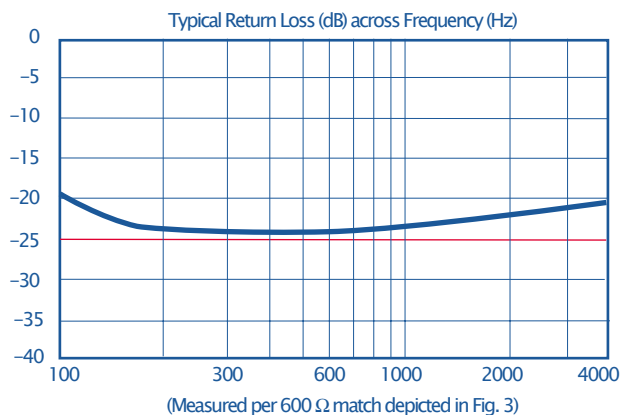
## INSERTION LOSS



## FREQUENCY RESPONSE



## RETURN LOSS



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