



sumida

ESMIT-100

# Analog Telephony/Modem Couplers

## FEATURES

- Suitable for modem speeds up to V.32 bis (14.4 kbps).
- Total Harmonic Distortion rated -76 dB Max. @ 600 Hz, -10 dBm.
- Insertion Loss rated 2.0 dB Max. @ 2000 Hz.
- Complies with IEC60950 Reinforced safety norms.
- Matches 600 Ohm and complex impedance telephone lines.
- Uses minimal external components for impedance matching.
- Ultra-small PCB footprint (14.65mm x 9.75mm)
- Very-Low profile (7.1 mm)
- SMT Industry-standard pin configuration

## DESCRIPTION

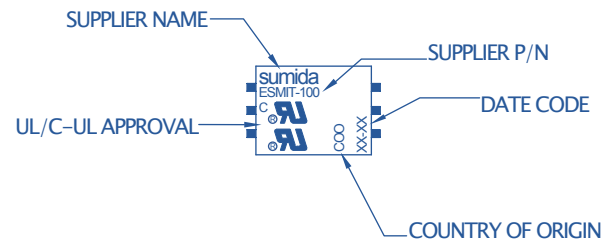
The Sumida ESMIT-100 is a "Dry" Encapsulated SMT Modem Isolation Transformer suitable for up to V.32bis (14.4 kbps) analog modem and voice applications requiring SMT and small PCB footprint. ESMIT-100 complies with International safety norms.

Typical applications for ESMIT-100 include computer telephony routers, POS and electronic payment terminals, electric utility meter readers, and boards with gangs of telephone interface circuits requiring ESMIT-100's small footprint.

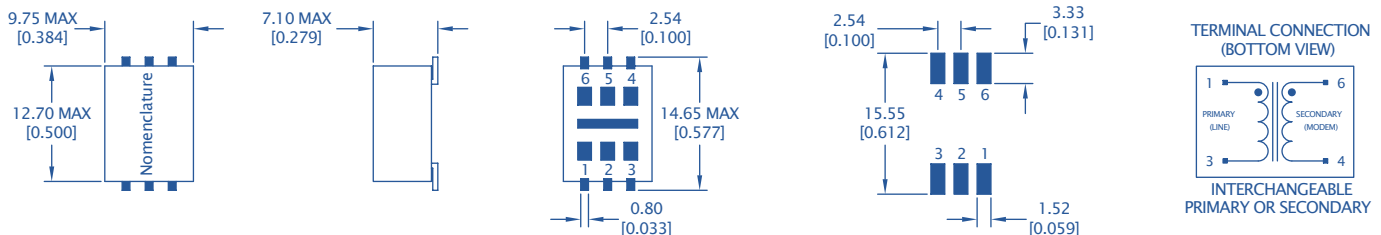
## PRODUCT COMPLIANCE

- UL/C- UL recognized file number: E171120
- BSI certificate number: 8264
- BABT certificate of recognition: 1905

## NOMENCLATURE (FIG. 1)



## MECHANICAL DIMENSIONS (FIG. 2)



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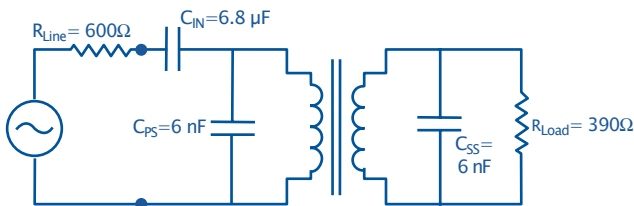
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### ELECTRICAL PERFORMANCE SPECIFICATIONS

| Parameters                                                    | Conditions                                                                         | Min               | Typ        | Max | Units                     |
|---------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------|------------|-----|---------------------------|
| Impedance                                                     | Reflected on Primary<br>with load on Secondary                                     |                   | 600<br>390 |     | Ohms                      |
| Total Harmonic Distortion                                     | @ 600 Hz, -10 dBm                                                                  |                   | -80        | -76 | dB                        |
| Insertion Loss                                                | Per IEEE method; @2000 Hz, 20 °C                                                   |                   | 1.85       | 2.0 | dB                        |
| Return Loss                                                   | 200 Hz-4000 Hz<br>Per 600 Ohm Match (Fig. 3)<br>Per CTR1 Pan-Euro Match (Fig.5)    | 24<br>28          |            |     | dB                        |
| Dielectric Breakdown Isolation<br>Production methods applied: | Safety Standard tested 1 min.<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                                                                   |                   | ±0.25      |     | dB                        |
| Longitudinal Balance                                          | Per FCC part 68.310<br>60 Hz -4000 Hz                                              | 80                |            |     | dB                        |
| DC Resistance @ 20°C, ±15%                                    | Primary winding ( $R_{pri}$ )<br>Secondary winding ( $R_{sec}$ )                   |                   | 115<br>115 |     | Ohms                      |
| DC current in Primary                                         |                                                                                    |                   | 0          |     | mADC                      |
| Turns Ratio                                                   | Primary to Secondary; ±2%                                                          |                   | 1:1        |     | Turns                     |
| Operating temperature                                         |                                                                                    | 0                 |            | 70  | °C                        |
| Storage temperature                                           |                                                                                    | -40               |            | 125 | °C                        |
| Soldering temperature                                         | 10 Sec. Max.; suitable for IR reflow                                               |                   |            | 240 | °C                        |

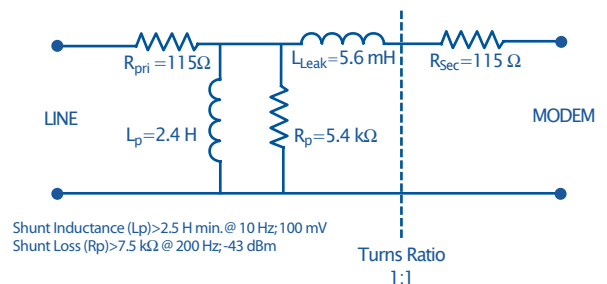
Electrical Performance Specifications (TA = 25°C unless otherwise specified)

### 600 OHM MATCH (FIG.3)



### SCHEMATIC EQUIVALENT (FIG.4)

(Typical Transformer Model @ 1Vrms, 1 kHz except as noted)



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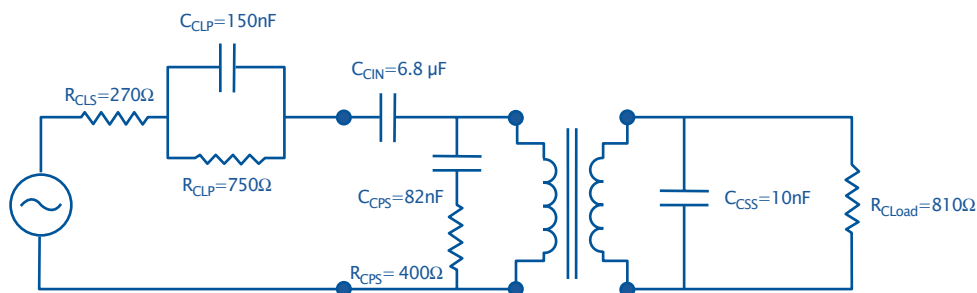
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## ESMIT-100

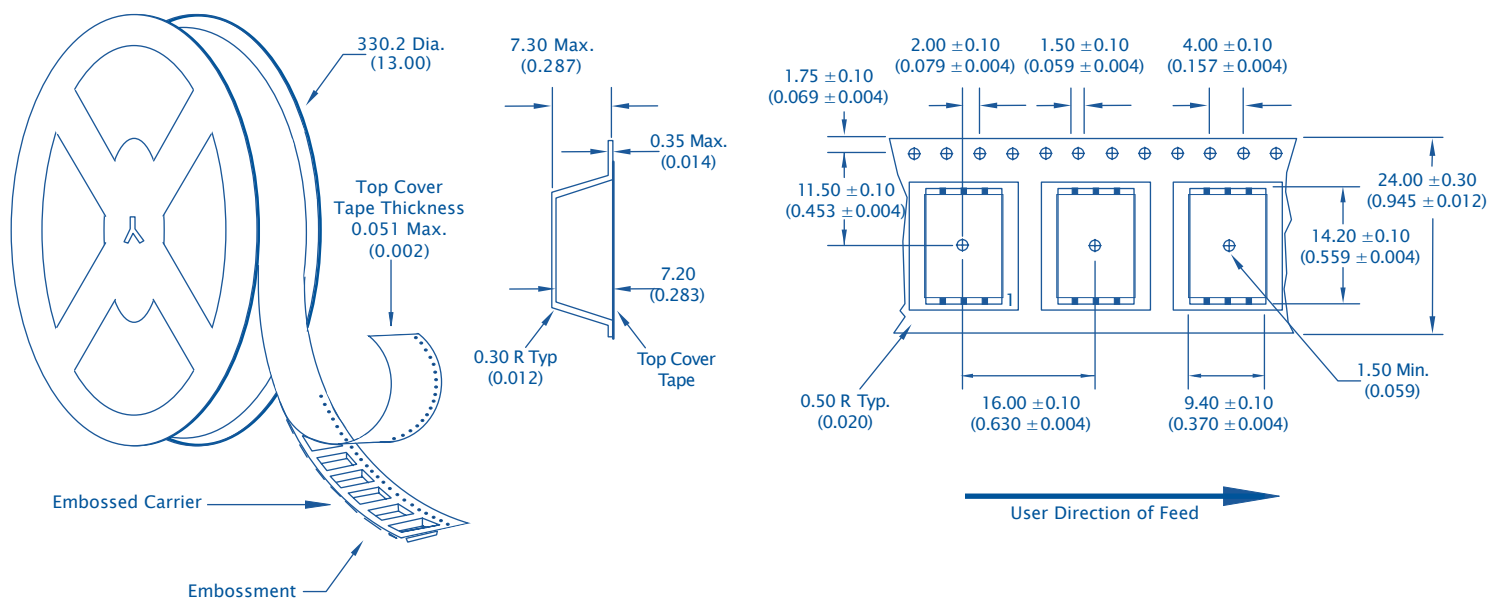
### Analog Telephony/Modem Couplers

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

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



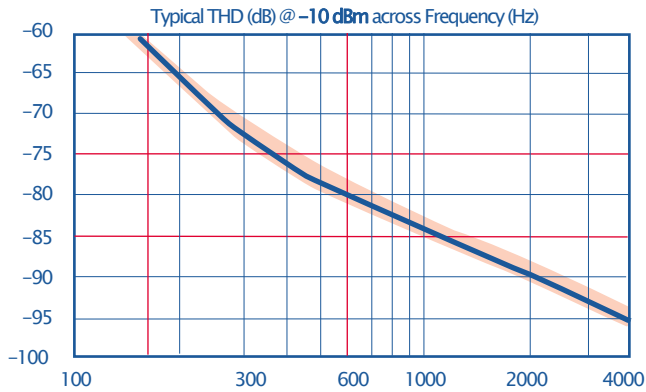
## TAPE AND REEL PACKAGING (FIG.6)



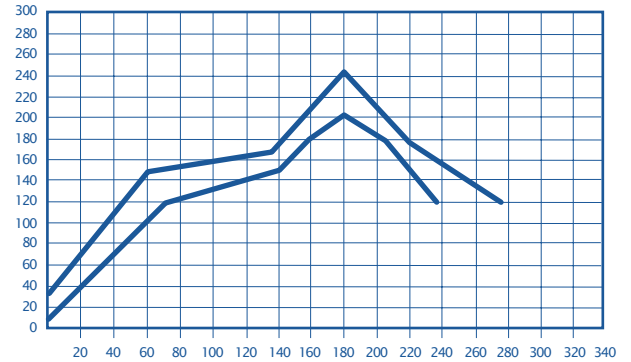
### PACKAGING

| Material | Contents | #Transformers |
|----------|----------|---------------|
| Tape     | 1 Reel   | 1000          |

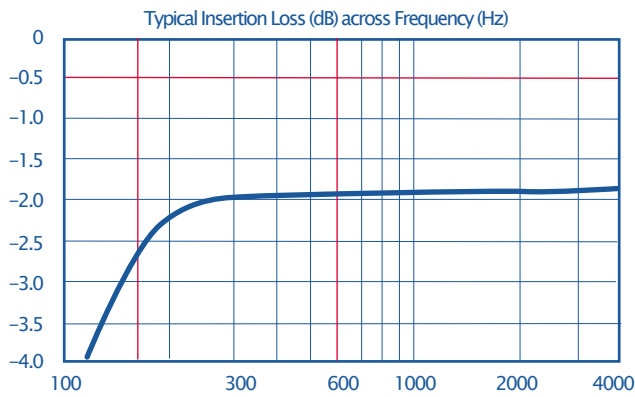
### TOTAL HARMONIC DISTORTION



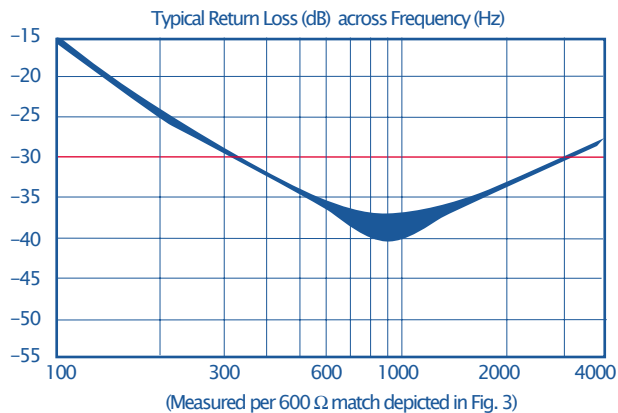
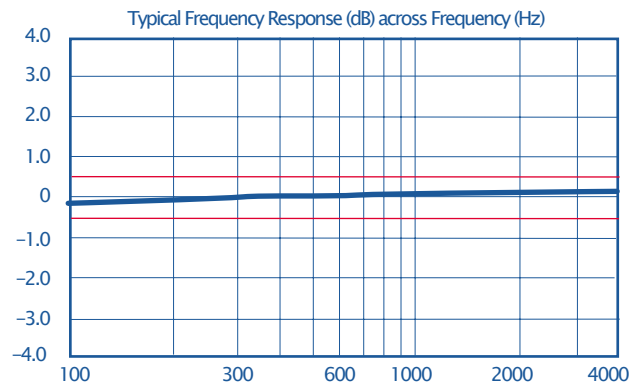
### TYPICAL REFLOW PROFILE



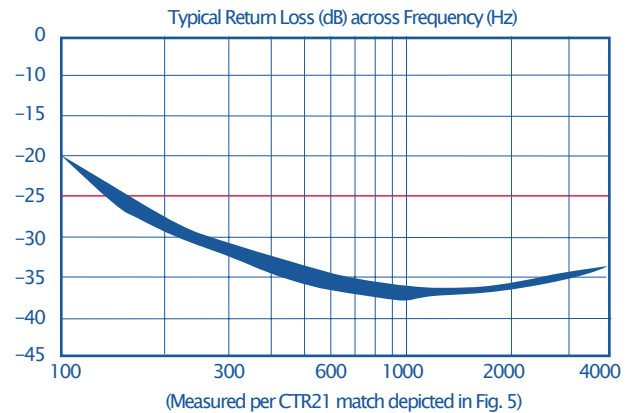
### INSERTION LOSS



### FREQUENCY RESPONSE



### RETURN LOSS



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