



sumida

EMIT-4033L

Analog Telephony/Modem Couplers

FEATURES

- Suitable for modem speeds up to V.92 (56 kbps) .
- Total Harmonic Distortion rated -85 dB typ. @ 600Hz, -10 dBm.
- Insertion Loss rated 1.60 dB typ. @ 2000 Hz.
- Complies with IEC60950 Reinforced safety norms.
- Reflects 600 Ohms on Primary with 420 Ohms on Secondary Load.
- Uses minimal external components for complex impedance matching to pan-European CTR21 line standards.
- Very small PCB footprint (18.3 mm x 18.3 mm).
- Low-Profile (12.6 mm).
- Industry-standard pin configuration.

DESCRIPTION

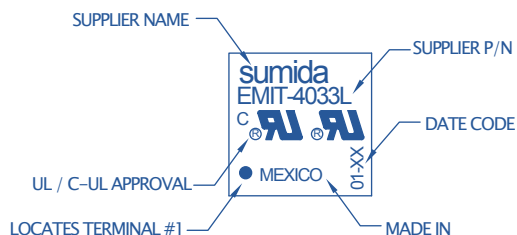
The Sumida EMIT-4033L is a "Dry" Encapsulated Modem Isolation Transformer suitable for up to V.92 (56 kbps) modem applications compliant with International safety norms. EMIT-4033L features low leakage inductance enabling simple return loss balancing for 600 ohm telecom lines.

EMIT-4033L offers reduced cost compared to EMIT-4035L and EMIT-5035L (and similar competitive solutions), yet still consistent with V.92/V.90 distortion, frequency response, and other parameters.

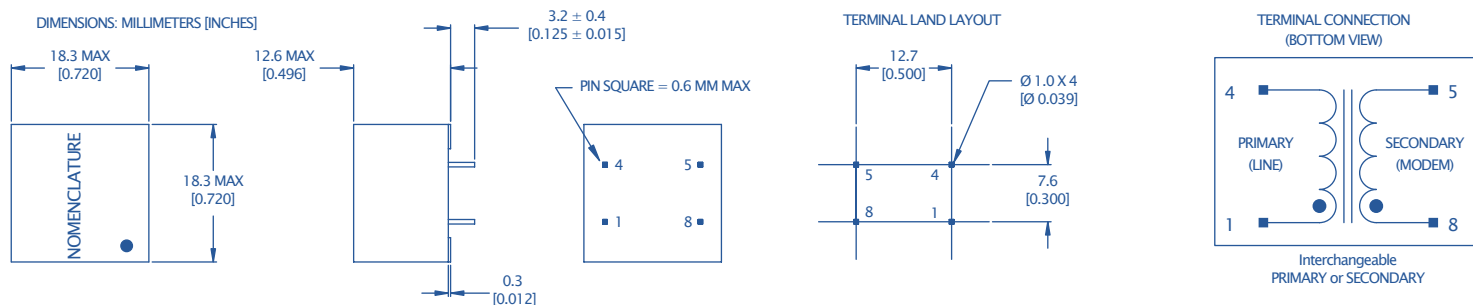
PRODUCT COMPLIANCE

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

NOMENCLATURE (FIG. 1)



MECHANICAL DIMENSIONS (FIG. 2)



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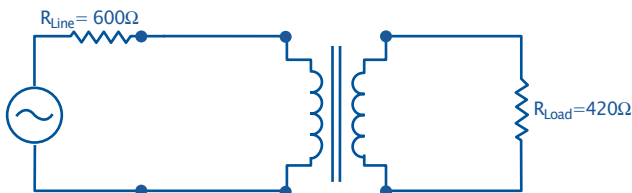
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ELECTRICAL PERFORMANCE SPECIFICATIONS

Performance	Conditions	Min	Typ	Max	Units
Impedance	Reflected on Primary with load on Secondary		600 420		Ohms
Total Harmonic Distortion	@ 150 Hz, -3 dBm @ 600 Hz, -10 dBm		-66 -85		dB
Insertion Loss	Per IEEE method; @2000 Hz		1.6		dB
Return Loss	200Hz-4000 Hz Per 600 Ohm Match (Fig.3) Per CTR21 Pan Euro Match (Fig.5)	20 28			dB
Dielectric Breakdown Isolation Production methods applied:	Safety Standard tested 1 min. HiPot Voltage Duration Trip Leakage Current	3000 3750 2		200	Vrms Vrms Sec μA
Frequency Response	200 Hz - 4000 Hz		±0.15		dB
Longitudinal Balance	Per FCC part 68.310 60 Hz - 1000 Hz 1000 Hz - 4000 Hz	60 40			dB
DC Resistance @ 20°C, ±10%	Primary winding (R_{pri}) Secondary winding (R_{sec})		82 106		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

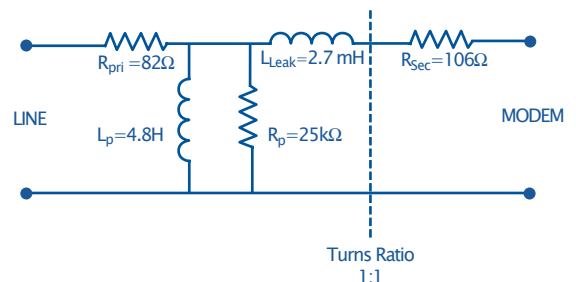
Electrical Performance Specifications (TA = 25°C, unless otherwise specified)

600 OHM MATCH (FIG.3)



SCHEMATIC EQUIVALENT (FIG.4)

Typical transformer model @ 1Vrms, 1 kHz



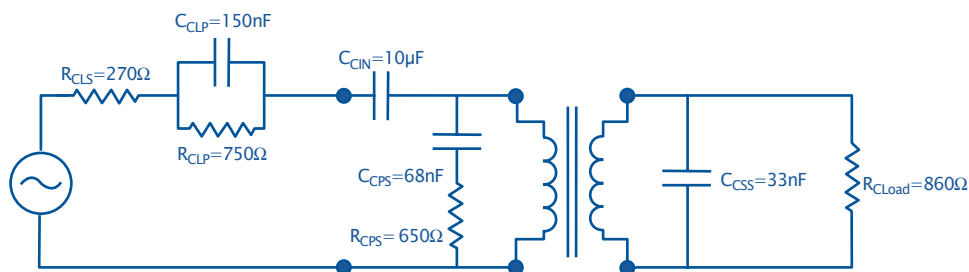
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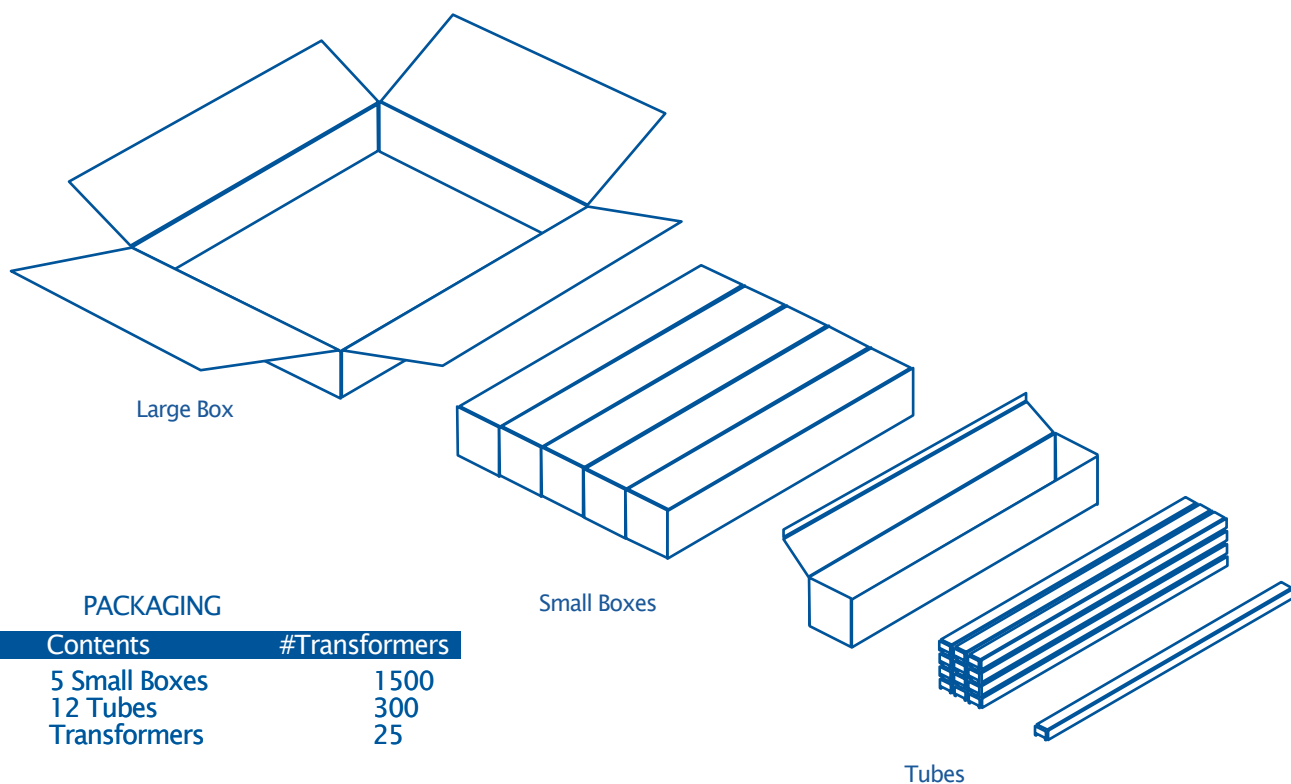


PAN-EUROPEAN CTR21 MATCH (FIG.5)

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



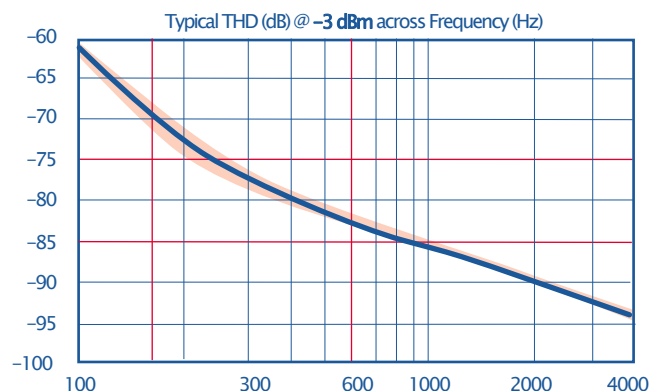
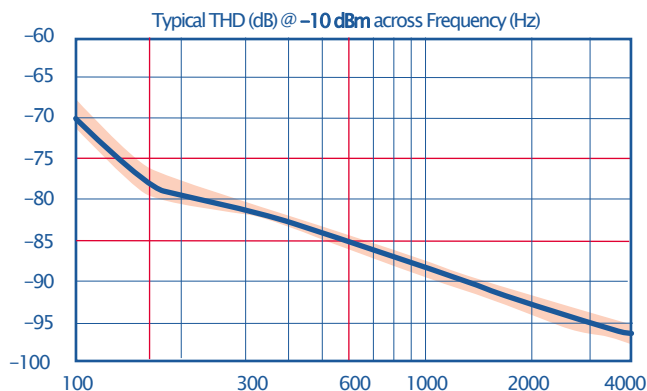
STANDARD PACKAGING (FIG.6)



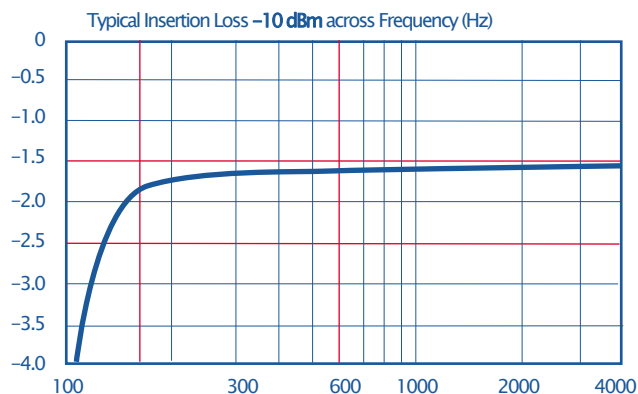
PACKAGING

Material	Contents	#Transformers
Large Box	5 Small Boxes	1500
Small Box	12 Tubes	300
Tube	Transformers	25

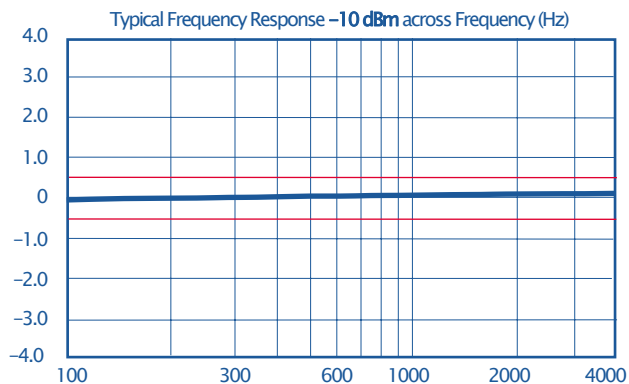
TOTAL HARMONIC DISTORTION



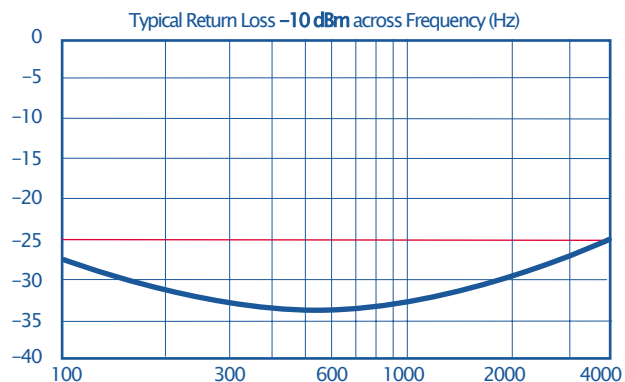
INSERTION LOSS



FREQUENCY RESPONSE



RETURN LOSS



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