

FEATURES

- Suitable for modem speeds up to V.32bis (14.4 kbps).
- Total Harmonic Distortion rated -76 dB max. @ 600 Hz, -10 dBm.
- Insertion Loss rated 2.00 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 (14.2 mm x 9.6 mm).
- Very Low-Profile (7.0 mm).
- SMT Industry-standard pin configuration.

DESCRIPTION

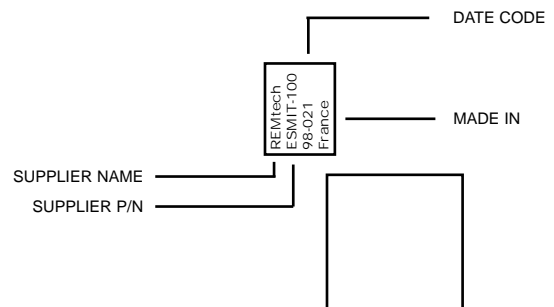
The REMtech Magnetics ESMIT-100 is a “Dry” Encapsulated SMT Modem Isolation Transformer suitable for up to V.32bis (14.4 kbps) analog modem and voice applications requiring SMT and small PCB footprint. ESMIT-100 complies with International safety norms.

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, but not thin profile.

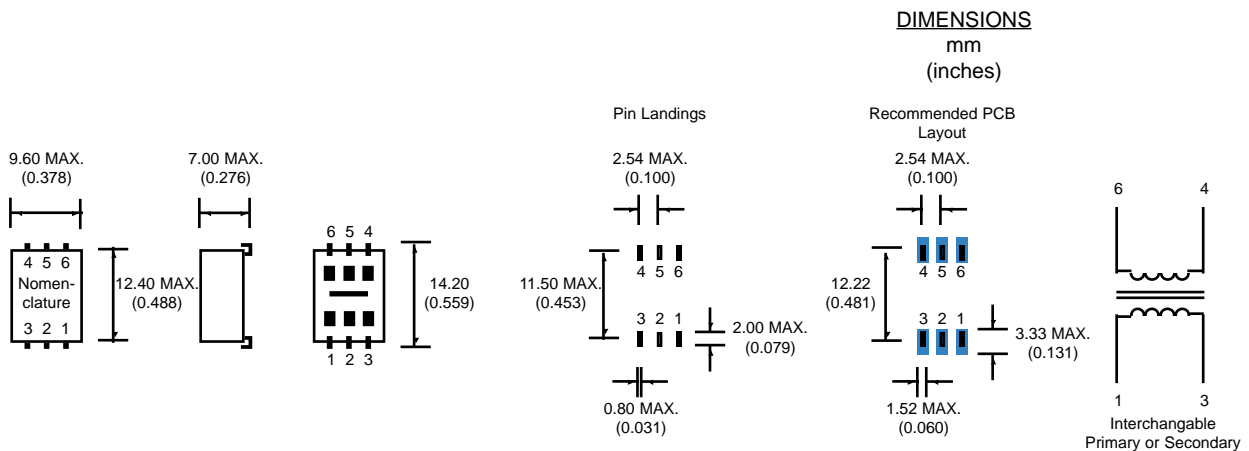
PRODUCT COMPLIANCE

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

NOMENCLATURE (Fig. 1)



MECHANICAL DIMENSIONS (Fig. 2)



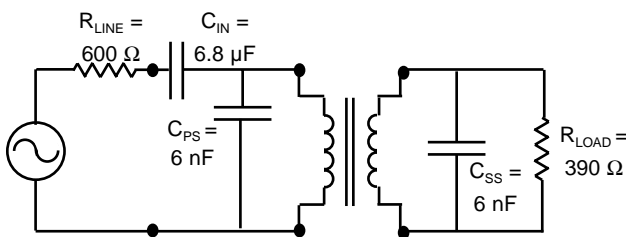
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ELECTRICAL PERFORMANCE SPECIFICATIONS

Electrical Performance Specifications ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified)

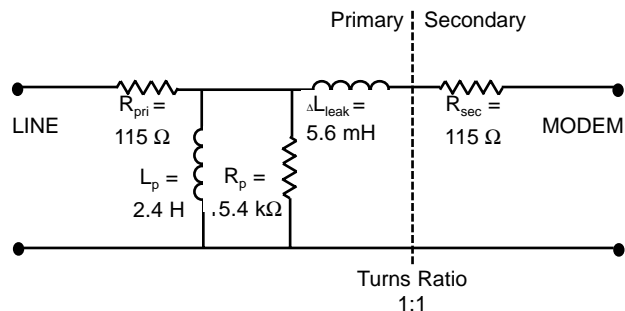
PARAMETERS	CONDITIONS	MIN	TYP	MAX	UNITS
Impedance	Reflected on Primary With Load on Secondary	-	600	-	Ohms
		-	390	-	Ohms
Total Harmonic Distortion	@ 600 Hz, -10 dBm	-	-80	-76	dB
Insertion Loss	Per IEEE method; @ 2000 Hz, 20 °C	-	1.85	2.00	dB
Return Loss	200 Hz - 4000 Hz Per 600 Ohm Match (Fig. 3) Per CTR21 Pan-Euro Match (Fig. 10)	24	-	-	dB
		28	-	-	dB
Dielectric Breakdown Isolation Production methods applied:	Safety Standard tested 1 Min.	3000	-	-	Vrms
	HiPot Voltage	3750	-	-	Vrms
	Duration	2	-	-	Sec
	Trip Leakage Current	-	-	200	μA
Frequency Response	200 Hz - 4000 Hz	-	± 0.25	-	dB
Longitudinal Balance	Per FCC part 68.310 60 Hz - 4000 Hz	80	-	-	dB
DC Resistance @ 20°C, $\pm 15\%$	Primary Winding	-	115	-	Ohms
	Secondary Winding	-	115	-	Ohms
DC Current in Primary	-	-	0	-	mADC
Turns Ratio	Primary to Secondary; $\pm 2\%$	-	1:1	-	Turns
Operating Temperature	-	0	-	70	$^\circ\text{C}$
Storage Temperature	-	-40	-	125	$^\circ\text{C}$
Soldering Temperature	10 Sec. Max.; suitable for IR reflow	-	-	240	$^\circ\text{C}$

600 OHM MATCH (Fig. 3)



SCHEMATIC EQUIVALENT (Fig. 4)

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



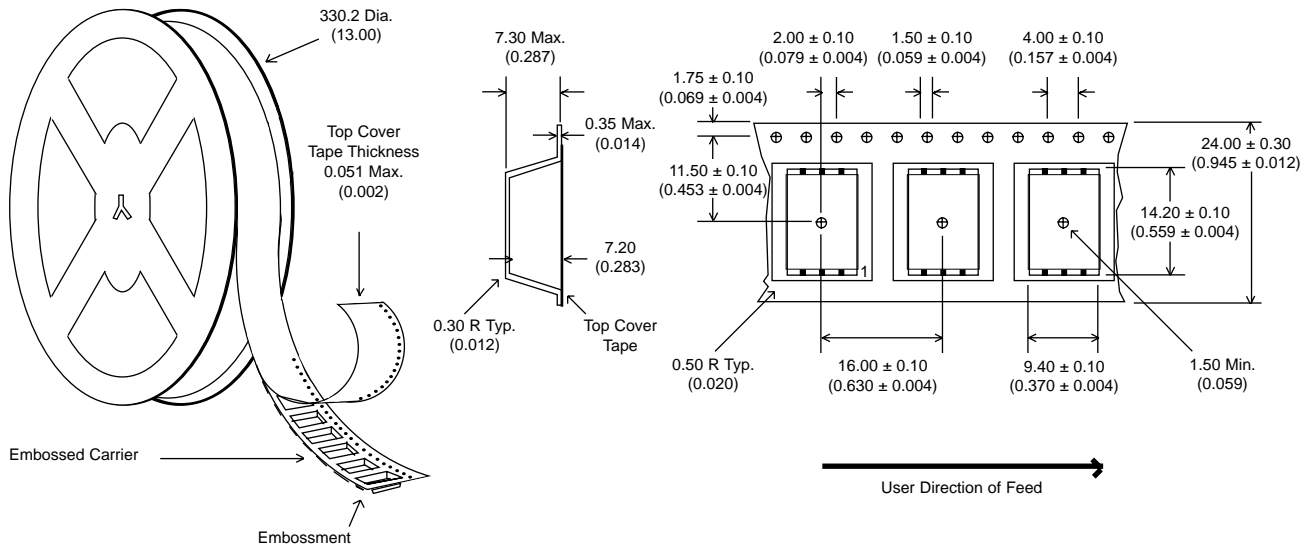
Shunt Inductance (L_p) > 2.5 H min. @ 10 Hz; 100 mV
Shunt Loss (R_p) > 7.5 k Ω @ 200 Hz; -43 dBm

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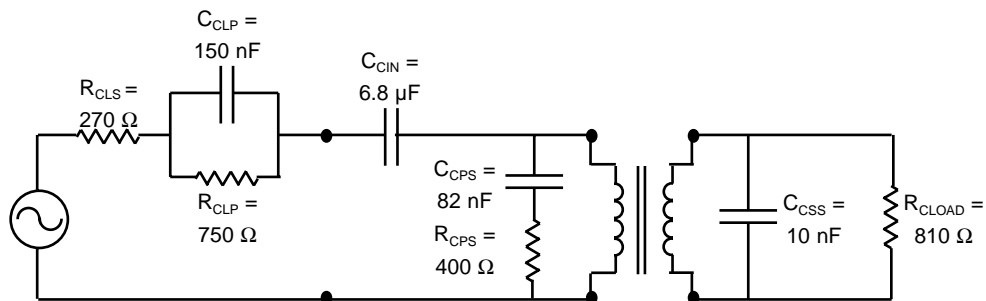
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STANDARD PACKAGING (Fig. 9)

Tape and Reel Packaging for ESMIT-100



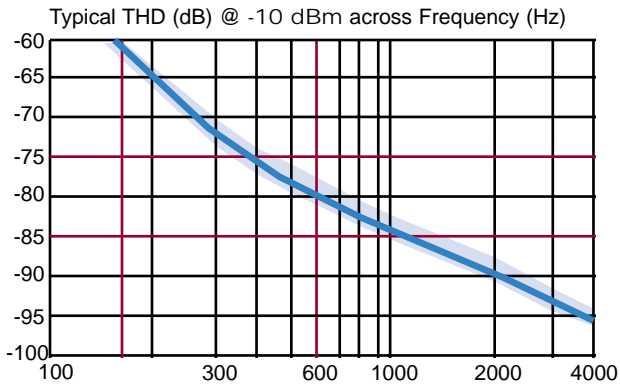
PAN-EUROPEAN CTR21 MATCH (Fig. 10)



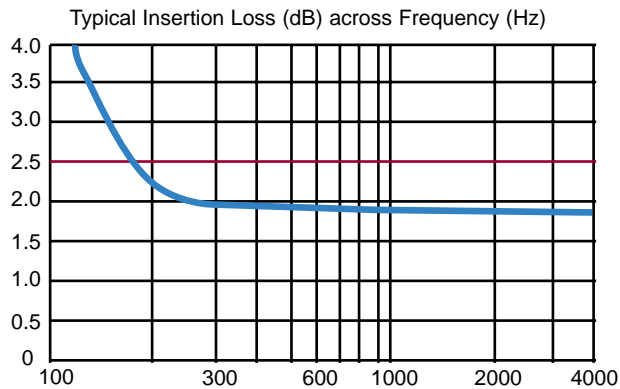
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PERFORMANCE DATA

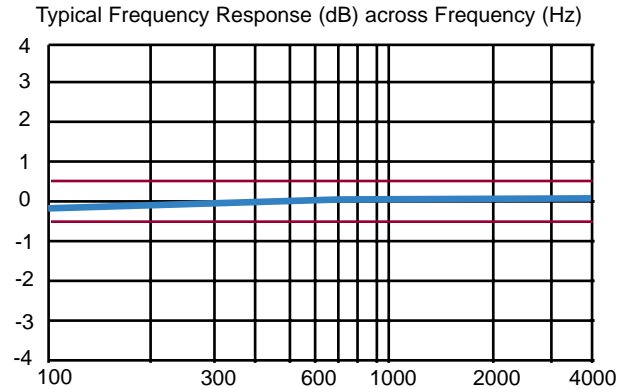
TOTAL HARMONIC DISTORTION (Fig. 5)



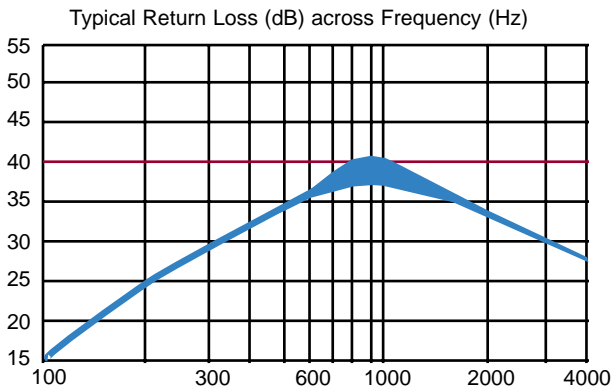
INSERTION LOSS (Fig. 6)



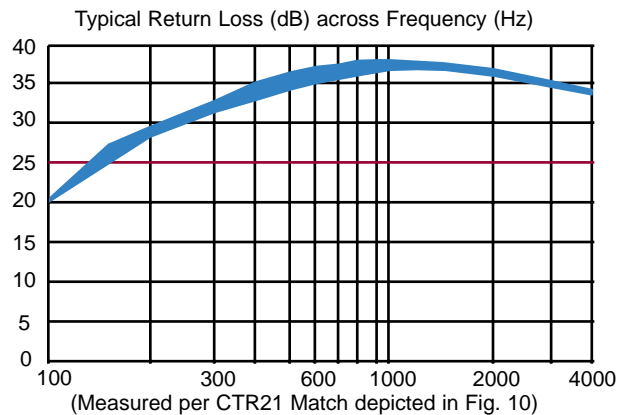
FREQUENCY RESPONSE (Fig. 7)



RETURN LOSS (Fig. 8)



Note y-axis.



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ADDITIONAL DATA

TYPICAL REFLOW PROFILE (Fig. 11)

