

## DESCRIPTION

The REMtech Magnetics EMIT-2165 is a “Dry” Encapsulated Modem Isolation Transformer suitable for up to V.90 (56 kbps) consumer and internet analog modem applications compliant with International safety norms.

EMIT-2165 provides a popular smaller package alternative to other products such as EMIT-2020L.

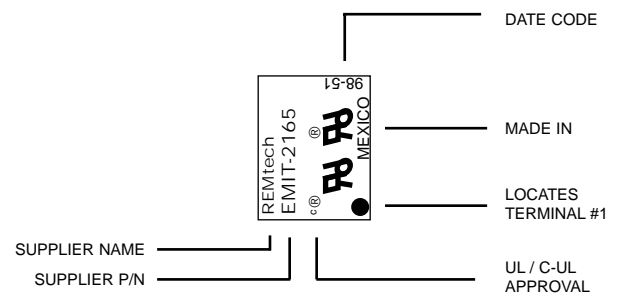
## FEATURES

- Suitable for modem speeds up to V.90 (56 kbps).
- Total Harmonic Distortion rated -90 dB typ. @ 600 Hz, -10 dBm and -68 dB typ. @ 150 Hz, -3 dBm.
- Insertion Loss rated 1.65 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 (19.2 mm x 15.0 mm).
- Very Low-Profile (11.3 mm).
- Industry-standard pin configuration.

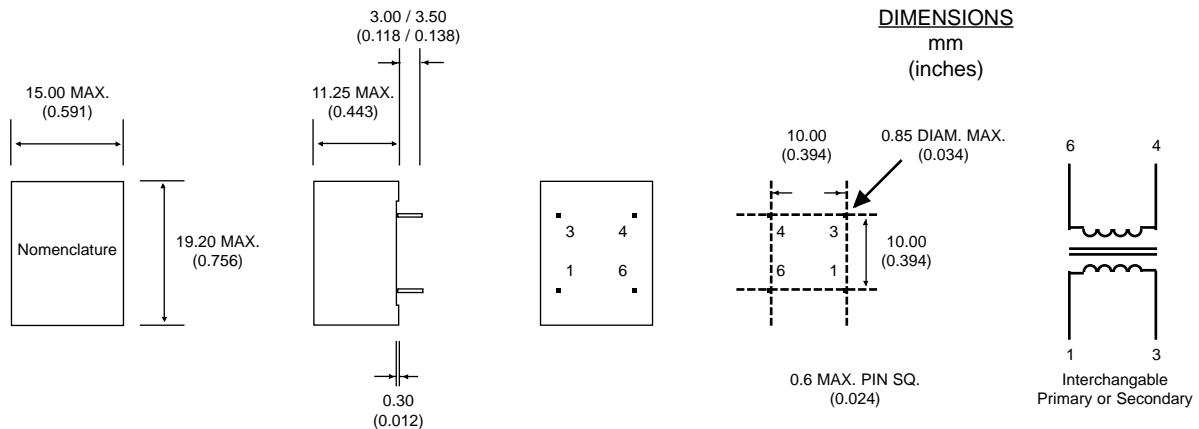
## PRODUCT COMPLIANCE

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

## NOMENCLATURE (Fig. 1)



## MECHANICAL DIMENSIONS (Fig. 2)



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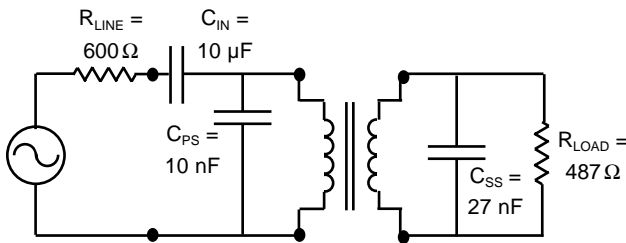
Analog Telephony / Modem Couplers

ELECTRICAL PERFORMANCE SPECIFICATIONS

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

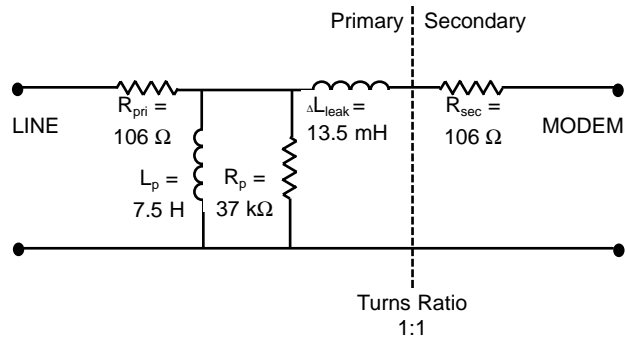
PARAMETERS	CONDITIONS	MIN	TYP	MAX	UNITS
Impedance	Reflected on Primary With Load on Secondary	-	600	-	Ohms
		-	487	-	Ohms
Total Harmonic Distortion	@ 600 Hz, -10 dBm @ 150 Hz, -3 dBm	-	-90	-82	dB
		-	-68	-60	dB
Insertion Loss	Per IEEE method; @ 2000 Hz	-	1.65	2.00	dB
Return Loss	200 Hz - 4000 Hz Per 600 Ohm Match (Fig. 3) Per CTR21 Pan-Euro Match (Fig. 10)	18	-	-	dB
		21	-	-	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	$\mu\text{A}$
Frequency Response	200 Hz - 4000 Hz	-	$\pm 0.35$	-	dB
Longitudinal Balance	Per FCC part 68.310 60 Hz - 1000 Hz 1000 Hz - 4000 Hz	60	-	-	dB
		40	-	-	dB
DC Resistance @ $20^\circ\text{C}$ , $\pm 10\%$	Primary Winding Secondary Winding	-	106	-	Ohms
		-	106	-	Ohms
DC Current in Primary	-	-	0	-	mADC
Turns Ratio	Primary to Secondary; $\pm 2\%$	-	1:1	-	Turns
Operating Temperature	-	-40	-	105	$^\circ\text{C}$
Storage Temperature	-	-40	-	125	$^\circ\text{C}$
Soldering Temperature	10 Sec. Max.	-	-	260	$^\circ\text{C}$

600 OHM MATCH (Fig. 3)



SCHEMATIC EQUIVALENT (Fig. 4)

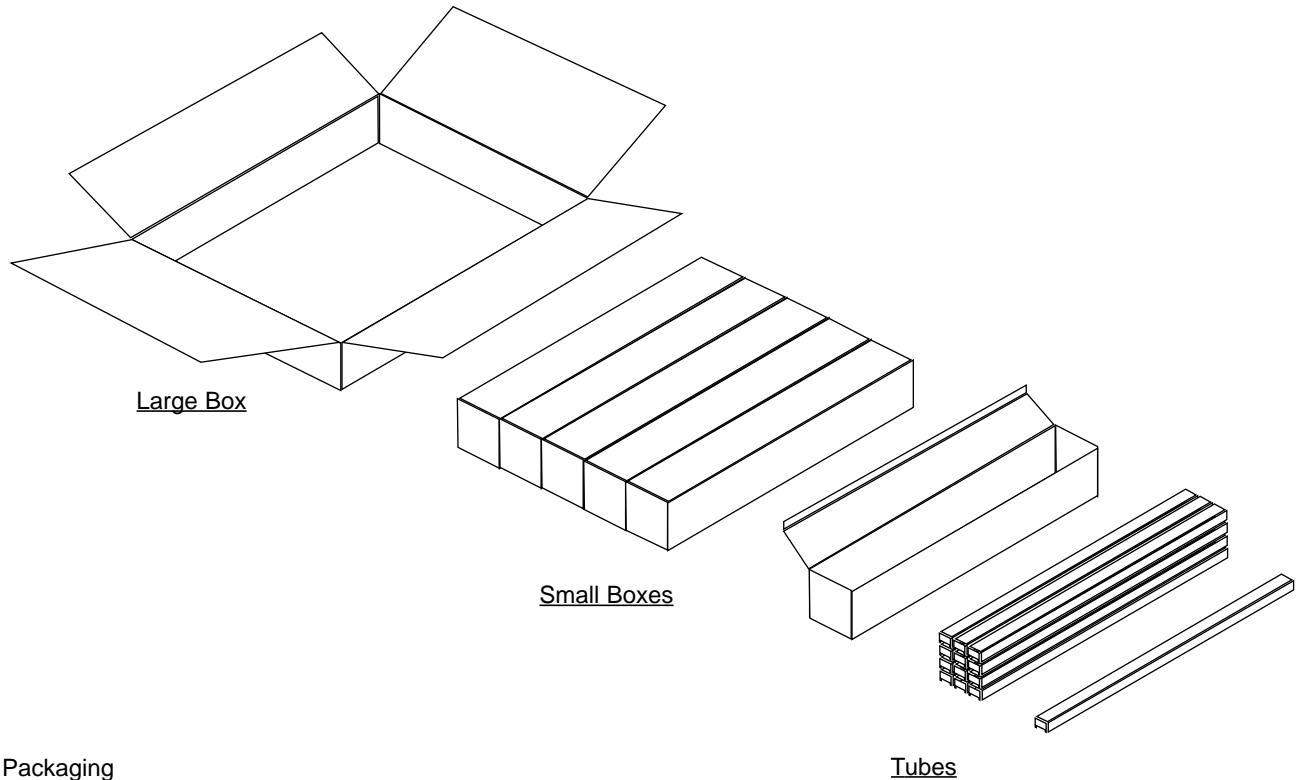
(Typical Transformer Model @ 1 V, 1 kHz)



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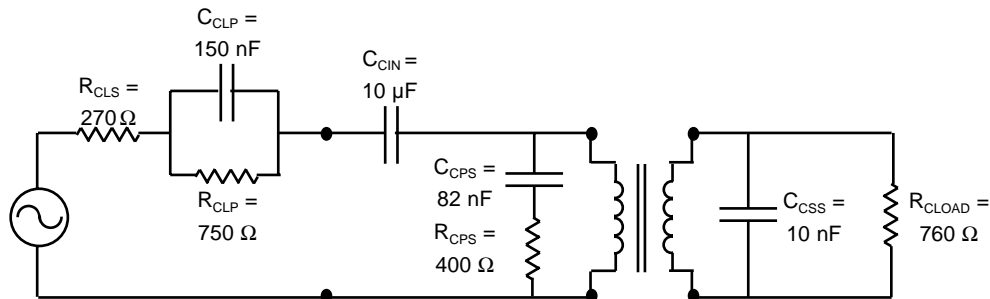
STANDARD PACKAGING (Fig. 9)



Packaging	Material	Contents	#Transformers
	Large Box	5 Small Boxes	1860
	Small Box	12 Tubes	372
	Tube	31 Transformers	31
	---	Transformer	1

PAN-EUROPEAN CTR21 MATCH (Fig. 10)

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

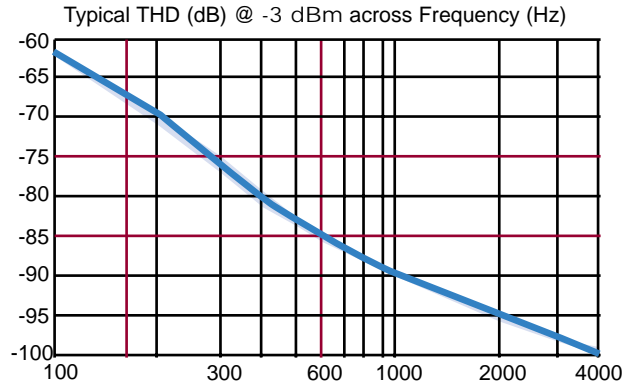
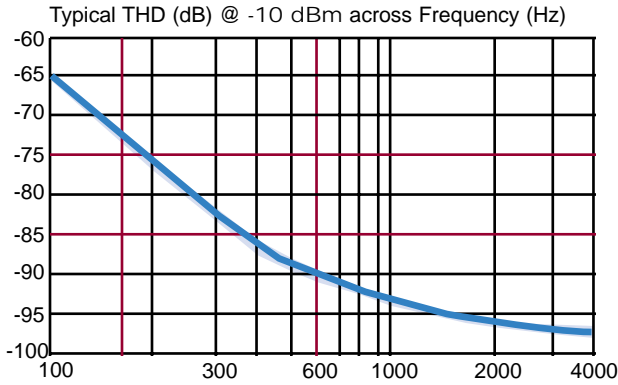


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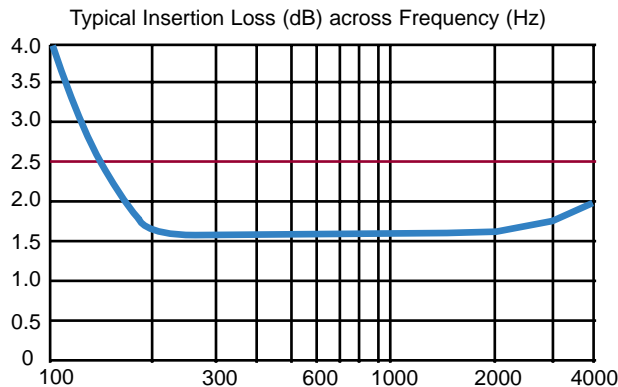
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PERFORMANCE DATA

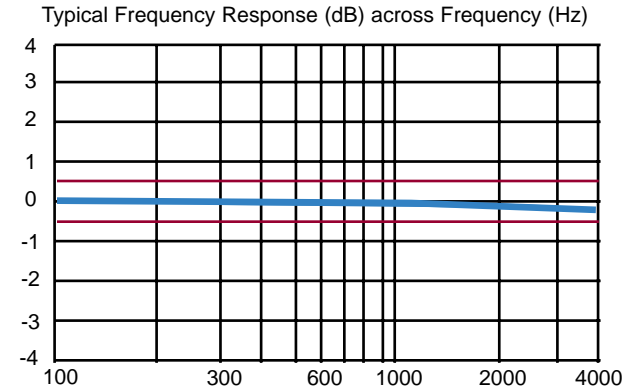
TOTAL HARMONIC DISTORTION (Fig. 5)



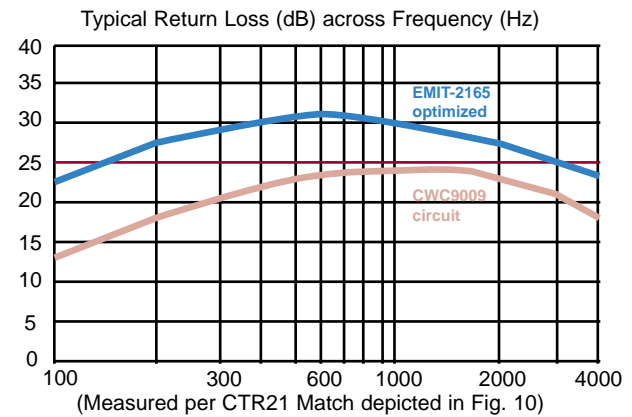
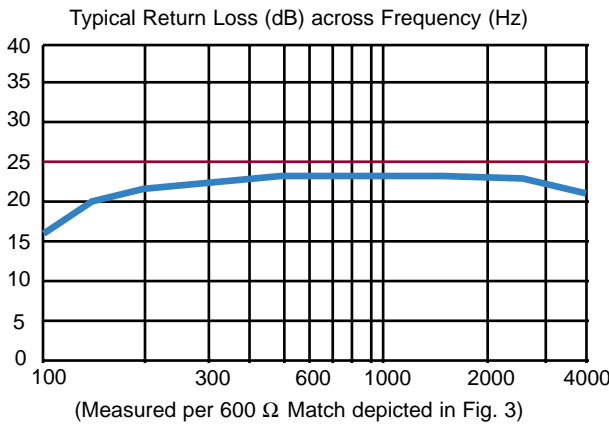
INSERTION LOSS (Fig. 6)



FREQUENCY RESPONSE (Fig. 7)



RETURN LOSS (Fig. 8)



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