PRODUCT DATA SHEET

LOW DISTORTION LINE MATCHING TRANSFORMER

9004

Features

- Low Insertion Loss
- Lead-free (Pb-free)
- RoHS compliant
- 14.6mm Seated Height
- Industry Standard Pinout
- IEC 60950 and UL 60950 Certified
- UL Recognized Component
- Simple Matching
- Low Insertion Loss
- Vacuum encapsulated

Applications

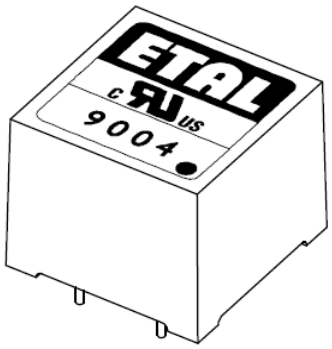
- V.34 Modems
- Fax Machines
- Instrumentation

DESCRIPTION

9004 is intended for medium speed modems to V.34 (33.6kbps).

9004 is completely lead-free, compliant with RoHS Directive 2002/95/EC, and suitable for lead-free and conventional processing.

9004 is certified to IEC 60950 and UL 60950. 9004 is a UL Recognized Component and is supported by an IEC CB Test Certificate.



RoHS COMPLIANT

E203175

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SPECIFICATIONS

Electrical

At T = 25 ℃ and 600Ω source and load unless otherwise stated.

Parameter	Conditions	Min	Typ	Max	Units
Insertion Loss	f = 200Hz – 4kHz	-	1.0	1.1	dB
Frequency Response	200Hz – 4kHz	-	-	±0.4	dB
Return Loss	200Hz – 4kHz, circuit figure 2.	21	-	-	dB
Third Harmonic Distortion[1]	200Hz -3dBm in line	- -	-68	-62	dBm
Voltage Isolation[2]	50Hz DC	2.12 3.0	- -	- -	kVrms kV
Operating Range: Functional Storage		 -25 -40	 - -	 +80 +85	 ℃ ℃

Lumped equivalent circuit parameters as Fig. 1

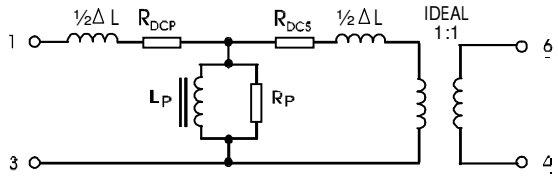
DC resistance[3]	Primary resistance R_{DCP} Secondary resistance R_{DCS}	27 36	32 42	37 48	Ω Ω
Leakage inductance, ΔL		0.7	-	1.6	mH
Shunt inductance, Lp	200Hz 250mV	1.9	4.5	-	H
Shunt loss, Rp	200Hz 250mV	2.0	7.0	-	kΩ

Notes:

1. Third harmonic typically exceeds other harmonics by 10dB.
2. Components are 100% tested at 6.5kVDC.
3. Caution: do not pass DC through windings. Telephone line current must be diverted using semiconductor line hold circuit or choke.

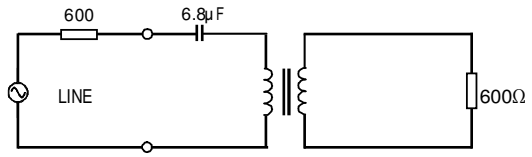
Equivalent Circuit

Fig. 1



REFEFENCE CIRCUIT

Fig. 2



SAFETY

Constructed in accordance with IEC 60950-1:2005, Second Edition, reinforced insulation, 250Vrms maximum working voltage, flammability class V-0. Distances through solid insulation 0.4mm minimum.

CERTIFICATION

Certified under the IEC CB Scheme (Certificate DK-15467) to IEC 60950-1:2005 sub-clauses 1.5, 1.7, 2.9, 2.10, 4.7 and 5.2 (Denmark, Finland, Germany, Norway, Ireland, Korea, Spain, Sweden, Switzerland, USA, Canada and UK national deviations) for a maximum working voltage of 250Vrms, nominal mains supply voltage not exceeding 250Vrms and a maximum operating temperature of +80°C in Pollution Degree 2 environment, reinforced insulation.

Recognized under the Component Recognition Program of Underwriters Laboratories Inc. to US and Canadian requirements CSA C22.2 No. 60950-1/UL60950-1, Second Edition, based on IEC 60950-1, Second Edition, maximum working voltage 250Vrms, Pollution Degree 2, reinforced insulation.

UL File number E203175.

Additionally, ETAL certifies all transformers as providing voltage isolation of 3.88kVrms, 5.5kV DC minimum. All shipments are supported by a Certificate of Conformity to current applicable safety standards.

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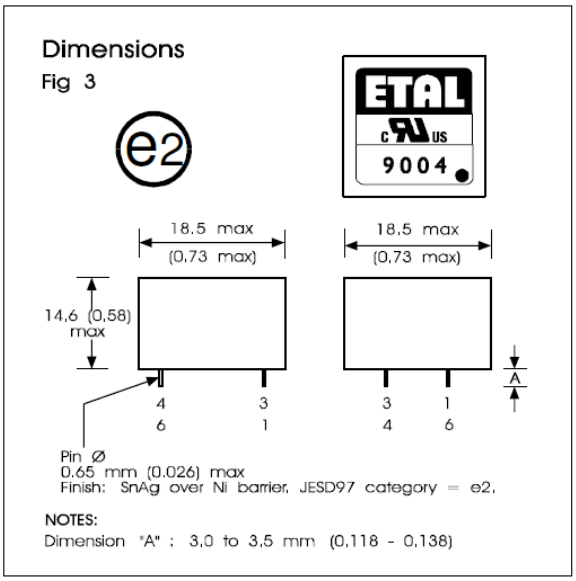
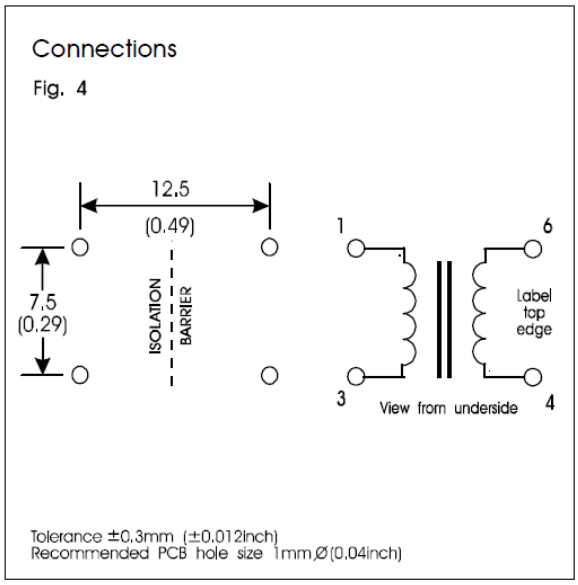
CONSTRUCTION





Dimensions shown are in millimetres (inches).
Geometric centres of outline and pin grid coincide within a tolerance circle of 0.6mmØ.
Windings may be used interchangeably as primary or secondary.

ABSOLUTE MAXIMUM RATINGS

(Ratings of components independent of circuit).

Short term isolation voltage (1s)	3.0kVrms, 4.3kVDC
DC current	100µA
Storage temperature	-40 ℃ to +85 ℃
Lead temperature, 10s	260 ℃

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