



PRODUCT DATA SHEET

LOW COST, LOW DISTORTION LINE MATCHING TRANSFORMER

P3335

Features

- * Low Cost
- * Low Distortion
- * 12.6mm (0.5") Seated Height
- * Industry Standard Pinout
- * IEC 950, UL 1950 and EN 60950 Certified
- * UL Recognized Component
- * BAPT Certificate of Recognition
- * Extended Frequency Response
- * Flat TX and RX Responses
- * Simple Matching
- * Low Insertion Loss
- * High Thermal Stability
- * Directly replaces 9035

Applications

- * V.90 and V.92 Modems
- * V.34 Modems

DESCRIPTION

P3335 is intended for V.90 and V.92 (56kbps) modems and other high-speed applications where ultra-low distortion at moderate power levels and very low voiceband frequencies is required at a most competitive price.

P3335 is offered as a direct replacement for 9035 in existing circuits, without changes to matching components, but re-engineered for significantly improved thermal stability.

P3335 exhibits stable core characteristics over its operating temperature range to maximize data throughput under varying environmental conditions without the need for modem retraining.

P3335 uses patented design and construction methods to achieve excellent signal performance and safety isolation to international standards at truly low cost. P3335 is certified to EN 60950, IEC 950, UL1950 and EN 41003. P3335 is a UL Recognized Component and is supported by a BAPT Certificate of Recognition and an IEC CB Test Certificate.

P3335 has exceptionally flat frequency response from 30Hz to 10kHz, a 3dB bandwidth of over 50kHz and requires only the very simplest of matching to achieve good return loss and transhybrid loss across the voiceband, with very low levels of signal distortion at signal frequencies as low as 150Hz.

FOR NEW DESIGNS
P3356 IS RECOMMENDED

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to Electronic Techniques
(Anglia) Limited

SPECIFICATIONS

Electrical

At T = 25°C and as reference circuit Fig. 2 unless otherwise stated.

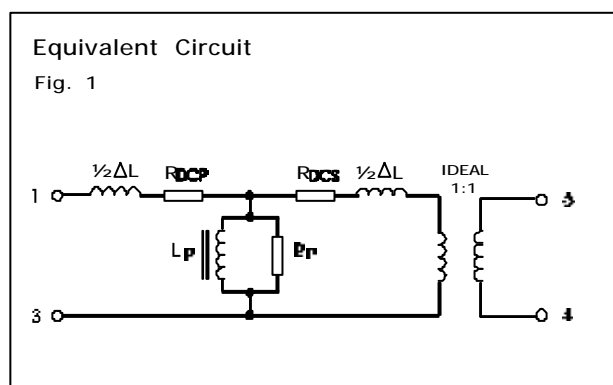
Parameter	Conditions	Min	Typ	Max	Units
Insertion Loss	f = 2kHz, R _L = 600Ω	-	1.4	-	dB
Frequency Response	LF -3dB cutoff	-	10	-	Hz
	HF -3dB cutoff	-	55	-	kHz
	100Hz – 4kHz	-	-	±0.1	dB
Return Loss	200Hz – 4kHz	25	30	-	dB
Third Harmonic Distortion ⁽¹⁾	150Hz -3dBm in line	-	-76	-	dBm
	200Hz -3dBm in line	-	-80	-	dBm
Voltage Isolation ⁽²⁾	50Hz	2.12	-	-	kVrms
	DC	3.0	-	-	kV
Operating Range:	Functional	0	-	+70	°C
	Storage	-40	-	+85	°C

Lumped equivalent circuit parameters as Fig. 1

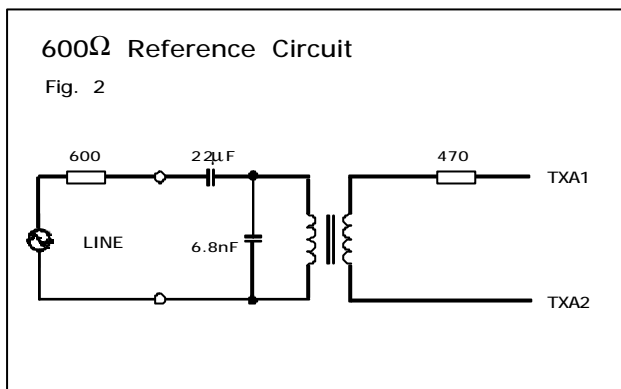
DC resistance, R _{DC} ⁽³⁾					
R _{DCP}	Primary resistance	66	-	80	Ω
R _{DCS}	Secondary resistance	90	-	110	Ω
Leakage inductance, ΔL		2.1	2.9	3.6	mH
Shunt inductance, L _p	200Hz 0.25V	5	12	-	H
Shunt loss, R _p	200Hz 0.25V	10	15	-	kΩ

Notes:

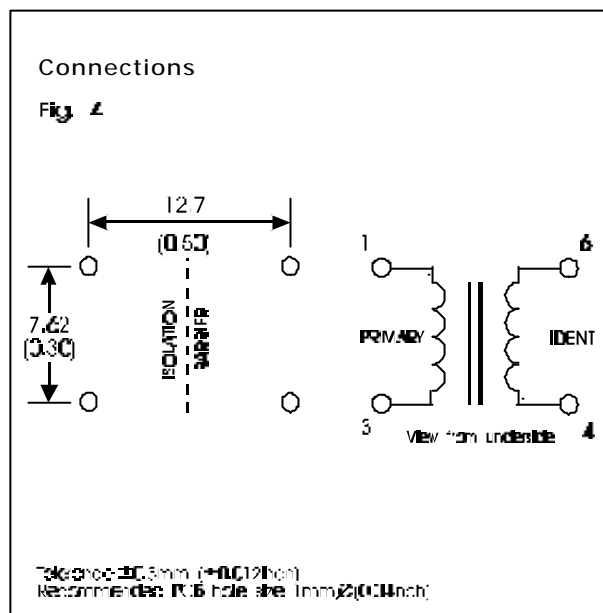
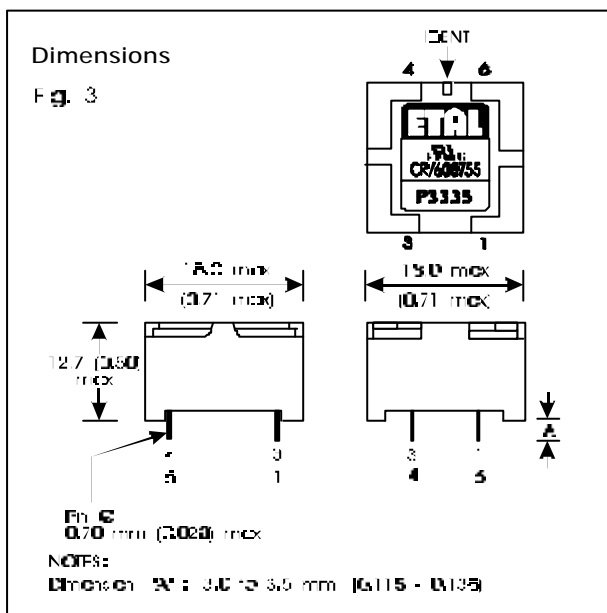
1. Third harmonic typically exceeds other harmonics by 10dB.
2. Components are 100% tested at 3.25kVDC.
3. Caution: do not pass DC through windings. Telephone line current must be diverted using semiconductor line hold circuit or choke.



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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.
Total weight typically 7.4g.

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SAFETY

Constructed in accordance with IEC 950:1991, EN 60950:1992 (BS7002:1992), supplementary insulation, 250Vrms maximum working voltage, flammability class V-0.

There are no special installation requirements (beyond attending to usual PCB track separations) since the integral cover provides supplementary insulation from its external faces to internal core and windings.

CERTIFICATION

Certified under the IEC CB scheme (Certificate GB445W) to IEC 950:1991, up to amendment 4, sub-clauses 1.5, 1.5.1, 1.5.3, 2.2, 2.2.3, 2.2.4, 2.9.2, 2.9.3, 2.9.4, 4.4, 4.4.3.2 (class V-0) and 5.3 for a maximum working voltage of 250Vrms, nominal mains supply voltage not exceeding 300Vrms and a maximum operating temperature of 70°C in Pollution Degree 2 environments.

Recognized under the Component Recognition Program of Underwriters Laboratories Inc. to US and Canadian requirements CAN/CSA C22.2 No. 950-95/UL1950, Third Edition, including revisions through to revision date March 1, 1998, based on Fourth Amendment of IEC 950, Second Edition, maximum working voltage 180Vrms (creepage), 420V peak (clearance), Pollution Degree 2, supplementary insulation.

UL File number E203175.
Approved and certified by BABT to EN 60950 and EN 41003.
BABT Certificate of Recognition 608755

Additionally, Profec Technologies certifies all transformers as providing voltage isolation of 2.12kVrms, 3kV DC minimum. All shipments are supported by a certificate of conformity to current applicable safety standards.

ABSOLUTE MAXIMUM RATINGS

(Ratings of components independent of circuit).

Short term isolation voltage (1s)	2.12kVrms, 3.0 kVDC
DC current	100µA
Storage temperature	-40°C to +85°C
Lead temperature, 10s	260°C

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P3335 design and construction are protected by patents and registered design.
British Patent No. 2333646.
British Patent No. 2340667.
UK Registered Design No. 2077360.
French Registered Design No. 991512.
Germany Registered Design 49902311.0.
United States Registered Design 426, 815.
Other patents and registered designs pending.

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ISO 9001
FM 25326

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