PRODUCT DATA SHEET

LINE MATCHING TRANSFORMER P3126

Features

* 14.6mm seated height
* Vacuum encapsulated
* Compliant with EN 50020 and EN 60950

Applications

* Potentially explosive atmospheres
* Telecommunications
* Telemetry
* Line matching
* Instrumentation

DESCRIPTION

P3126 is a line matching transformer for applications where high performance and safety isolation to the most exacting international standards are required in a compact case size.

In conjunction with external protection (e.g. fuses, zener diodes, etc.) the device is compliant with EN 50020 for peak rated voltage ≤375V.

Signal performance is equivalent to ETAL® P1200.

SPECIFICATIONS

Electrical

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

Parameter	Conditions	Min	Typ	Max	Units
Insertion loss	f = 2kHz, R_L = 560Ω	-	-	1.5	dB
Frequency response	LF-3dB cutoff	-	-	50	Hz
	HF-3dB cutoff	10	-	-	kHz
	200Hz – 4kHz	-	-	±0.2	dB
Return loss	200Hz – 4kHz	18	-	-	dB
Distortion (1)	0dBm in line, 3rd Harmonic f = 450Hz	-	-72	-60	dBm
Balance	DC - 5kHz Method TG25	80	-	-	dB
Saturation	Excitation 50Hz 250Vrms				
	Output voltage	-	-	10	Vrms
	across line	-	-	65	Vpeak
Voltage Isolation (2)	50Hz	3.88	-	-	kVrms
	DC	5.5	-	-	kV
Operating range:	Ambient temperature				
Functional		-10	-	+70	ºC
Storage		-40	-	+125	ºC
Humidity		-	-	95	%R.H.

Lumped equivalent circuit parameters as Fig. 1

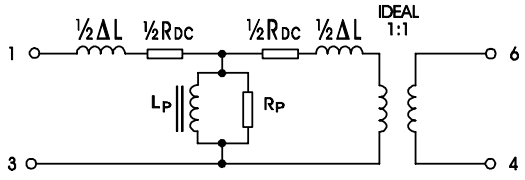
DC resistance, R_{DC} (3)	Sum of windings	120	-	148	Ω
Leakage inductance ΔL		-	17	-	mH
Shunt inductance Lp (4)	-43dBm 200Hz	2.8	4	7	H
	-43dBm 1kHz	-	2	-	H
Shunt loss Rp (4)	-43dBm 200Hz	5	-	-	kΩ
	-43dBm 1kHz	7	-	-	kΩ

Notes:

1. Third harmonic typically exceeds other harmonics by 20dB.
2. Components are 100% tested at 6.5 kVDC.
3. Caution: do not pass DC through windings. Telephone line current, etc must be diverted using choke or semiconductor line hold circuit.
4. At signal levels greater than –20dBm L_P will increase and R_P will decrease slightly but the effect is usually favourable to the return loss characteristic.

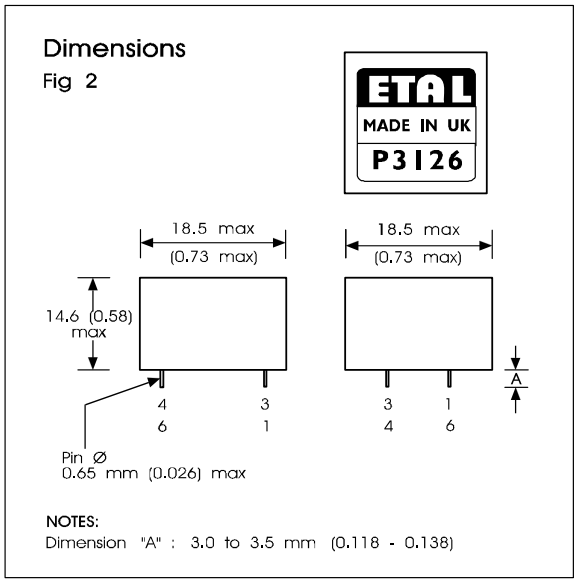
Equivalent Circuit

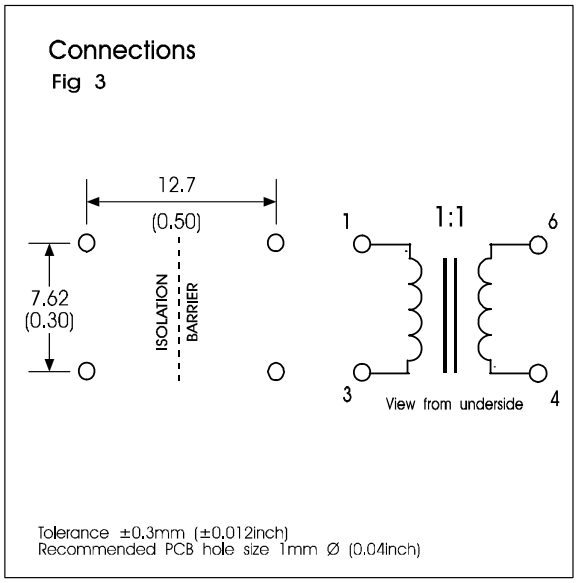
Fig 1



P3126

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.

EN 50020 para 7.1.2 Type 1(a) (side-by-side on separate slots of single piece moulding).

Fully vacuum encapsulated with hard epoxy resin totally enclosing all internal parts.

Critical Distances

(a)	Distance through bobbin dividing fillet.	≥1.0mm
(b)	Distance through bobbin walls to conductive core (Each winding).	≥0.5mm
(c)	Distance between highest point of each winding (including lead-outs) and top of dividing fillet.	≥1.0mm
(d)	Distance between highest point of each winding (including lead-outs) to conductive core through encapsulant.	≥1.0mm
(e)	Distance through potting box to conductive core.	≥0.7mm
(f)	Creepage/clearance (in air).	≥11.0mm

ABSOLUTE MAXIMUM RATINGS

(Ratings of components independent of circuit).

Short term isolation voltage (15s)	4.6kVrms, 6.5 kVDC
DC current	100μA
Storage temperature	-40ºC to +125ºC
Lead temperature, 10s	260ºC

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