PRODUCT DATA SHEET

PICK-OFF TRANSFORMER P3127

Features

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

Applications

* Potentially explosive atmospheres
* Telecommunications
* Pick-off applications
* Telemetry
* Instrumentation

DESCRIPTION

P3127 is a high impedance 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.

P3127 has a turns ratio of 1.732:1 giving an impedance transformation of 3:1.

P3127 is designed for “listening” applications when placed across a line, presenting a very high impedance to minimize circuit loading.
Signal performance is equivalent to ETAL® P1487.

SPECIFICATIONS

Electrical

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

Parameter	Conditions	Min	Typ	Max	Units
Voltage isolation (1)	50Hz DC	3.88 5.5	- -	- -	kVrms kV
Balance	DC - 5kHz Method TG25	 50	 -	 -	 dB
Input impedance	200Hz – 4kHz, Fig 2	20	-	-	kΩ
Operating range: Functional Storage Humidity	Ambient temperature	 -10 -40 -	 - - -	 +70 +125 95	 ºC ºC %R.H.

Lumped equivalent circuit parameters as Fig. 1

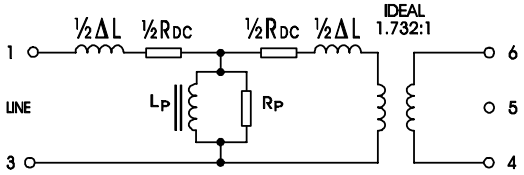
DC resistance, R_{DC} (2)	Sum of windings (Corrected for ratio)	-	-	1860	Ω
Leakage inductance ΔL	Referred to pins 1-3	-	170	-	mH
Shunt inductance Lp	-43dBm 200Hz	3.8	-	67	H
Shunt loss Rp	-43dBm 200Hz	70	-	-	kΩ

Notes:

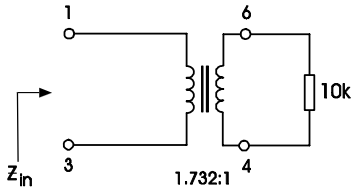
1. Components are 100% tested at 6.5 kVDC.
2. Caution: do not pass DC through windings. Telephone line current, etc must be diverted using choke or semiconductor line hold circuit.

P3127

Equivalent Circuit
Fig 1



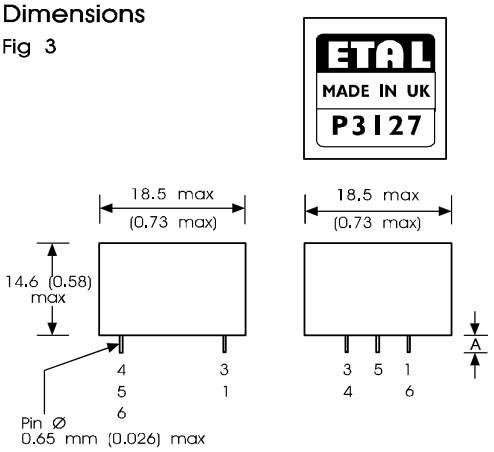
Recommended Circuit
Fig 2



Through "loss" (including voltage ratio) 4.77dB plus less than 0.8dB excluding effect of any DC blocking capacitor.
Response: ± 0.3dB 200Hz - 4kHz

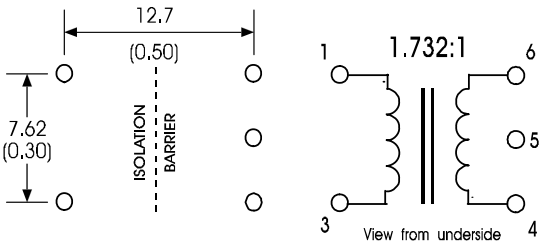
CONSTRUCTION

Dimensions
Fig 3



NOTES:
Dimension "A" : 3.0 to 3.5 mm (0.118 - 0.138)

Connections
Fig 4



Tolerance ±0.3mm (±0.012inch)
Recommended PCB hole size 1mm Ø (0.04inch)

Dimensions shown are in millimetres (inches).
Geometric centres of outline and pin grid coincide within a tolerance circle of 0.6mmØ.

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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