

# MICROPROFILE SMD LINE MATCHING TRANSFORMER

# 100SMD

## Features

- \* Surface Mount
- \* Lead-free (Pb-free)
- \* RoHS compliant
- \* Low Distortion
- \* 7mm Seated Height
- \* IEC 60950 and UL 60950 Certified
- \* UL Recognized Component

## Applications

- \* Telecommunications
- \* V.34 modems
- \* Portable computers
- \* Fax/Modems

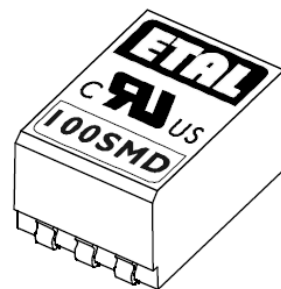
---

## DESCRIPTION

100SMD is a microprofile transformer for applications where high performance and safety isolation to international standards are required in an extremely small case size.

Designed specifically as a surface mount device, the 100SMD features a 7mm seated height and is vacuum encapsulated.

100SMD is certified to IEC 60950 and UL 60950, and is a UL Recognized Component. The part is completely lead-free, compliant with RoHS Directive 2002/95/EC, and suitable for lead-free and conventional processing.



## SPECIFICATIONS

### Electrical

At T = 25 °C and with 600Ω source and load unless otherwise stated.

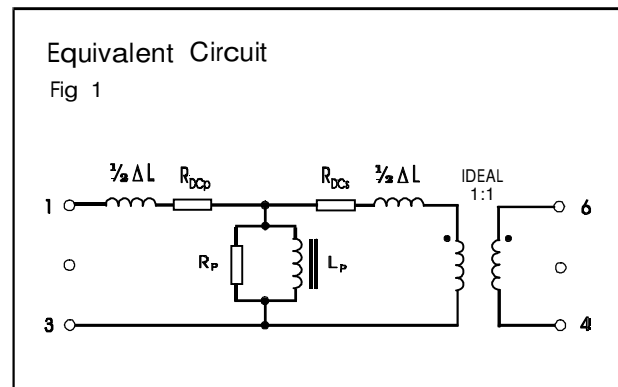
Parameter	Conditions	Min	Typ	Max	Units
Insertion Loss	f = 200Hz – 4kHz	-	-	2.6	dB
Frequency Response	300Hz – 3.4kHz	-	-	±0.1	dB
Return Loss	Circuit figure 2 300Hz – 4kHz	20	-	-	dB
Third Harmonic Distortion <sup>(1)</sup>	200Hz, -3dBm on primary	-	-67	-47	dBc
Voltage Isolation <sup>(2)</sup>	50Hz/60Hz	3.88	-	-	kVrms
	DC	5.5	-	-	kV
Operating Range: Functional Storage <sup>(5)</sup>		-25	-	+80	°C
		-40	-	+125	°C

Lumped equivalent circuit parameters as Fig. 1

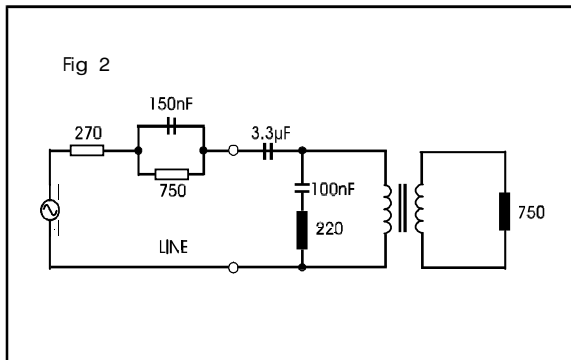
DC resistance <sup>(3)</sup>	Primary resistance $R_{DCp}$	126	148	170	Ω
	Secondary resistance $R_{DCs}$	126	148	170	Ω
Leakage inductance, $\Delta L$		-	7.0	14.4	mH
Shunt inductance, $L_p$ <sup>(4)</sup>	200Hz 250mV	3.0	-	-	H
Shunt loss, $R_p$ <sup>(4)</sup>	200Hz 250mV	8.0	-	-	kΩ

#### Notes:

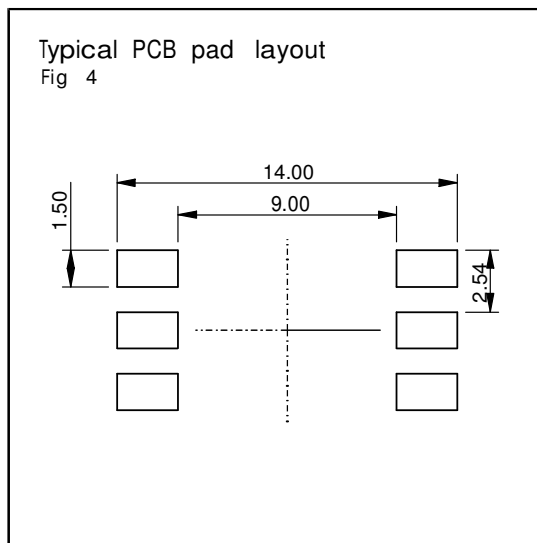
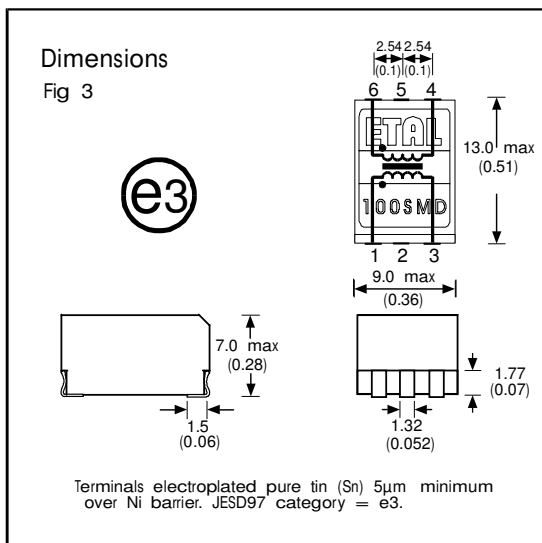
- Third harmonic typically exceeds other harmonics by 20dB.
- Components 100% tested at 6.5 kVDC.
- Caution:** do not pass DC through windings.
- At signal levels greater than 100mV,  $L_p$  will increase and  $R_p$  will decrease slightly but the effect is usually favourable
- Excludes shipping materials. Components are dry-packed and sealed as shipped. Handle in accordance with IPC/JEDEC J-STD-033 procedure for components classified as IPC/JEDEC J-STD-020 Moisture Sensitivity Level 5a.



## REFERENCE CIRCUIT



## CONSTRUCTION



Dimensions shown are in millimetres (inches).  
Geometric centres of outline and pin grid coincide within a tolerance circle of 0.3mmØ.  
Windings may be used interchangeably as primary or secondary.

## ABSOLUTE MAXIMUM RATINGS

(Ratings of components independent of circuit).

Short term isolation voltage (2s) 4.6 kVrms,  
6.5kVDC

DC current  
(avoiding distortion impairment) 100µA

Storage temperature -40 °C to  
+125 °C

Soldering temperature  
Profile peak 260 °C 10s

Recommended peak body temperature 245 °C in  
accordance with IPC/JEDEC J-STD-020.

## SAFETY

Manufactured from materials conforming to  
flammability requirements of UL94V-0.

Distance through reinforced insulation 0.4mm  
minimum.

Construction complies with IEC 60950-1, Second  
Edition, reinforced insulation, 250Vrms maximum  
working voltage.

## 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.

## ORDERING CODE

100SMD□□



TR = Tape and Reel  
(Blank) = Bulk in tubes.

Carrier tape width 24mm,  
500 parts per 13" reel.

## COPYRIGHT

ETAL is the Trade Mark of ETAL Group AB  
(wholly owned by KAMIC GROUP). The Trade  
Mark ETAL is registered at the UK Trade  
Marks Registry.

Etal Group AB is the owner of the design right  
under the Copyright Designs and Patents Act  
1988 and no rights or licences are hereby granted  
or implied to any third party.

British Patent No. 2283195  
US Patent No. 5879598  
European Patent No. 0725719

© 1997 - 2009 ETAL Group AB.  
Reproduction prohibited.