

NEW LAYOUT INSULATION REQUIREMENT

A. BREMOND

INTRODUCTION

In order to assume better level of security for telecommunication system users, some new rules have been published. This is the case of the IEC950 standard which dedicates one chapter to this subject. This kind of requirement is beginning to be active in Germany for example.

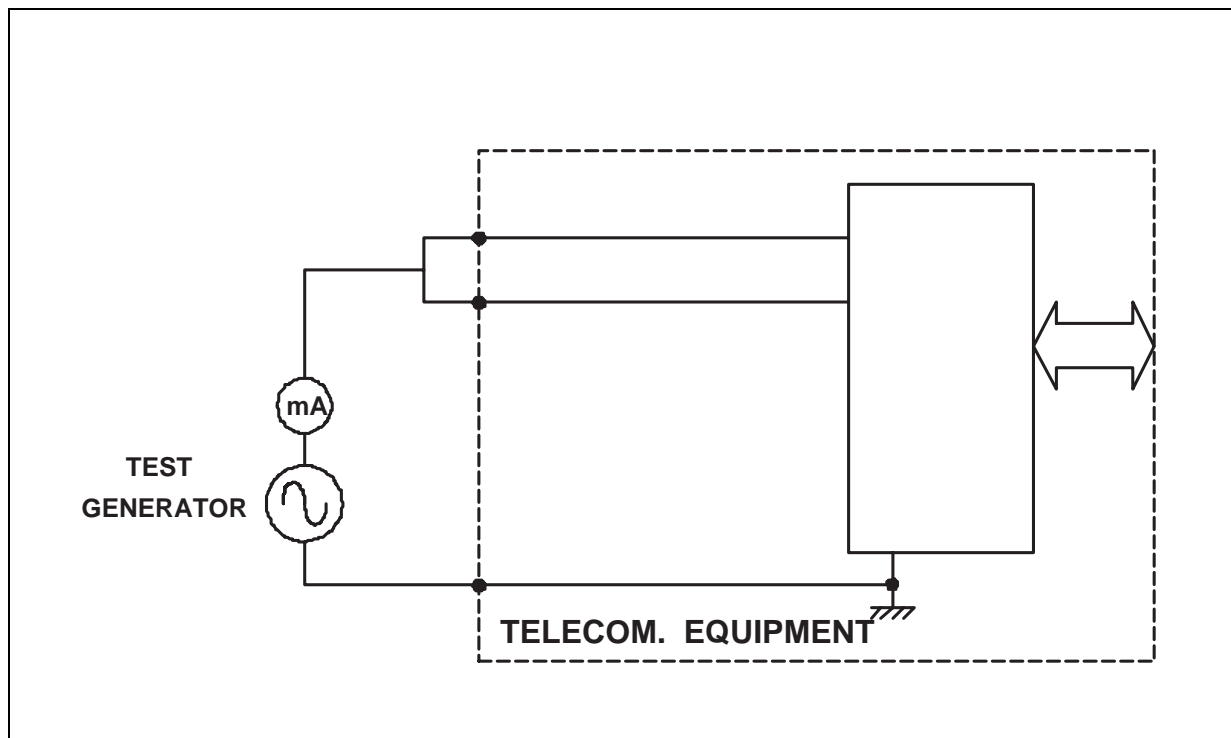
REQUIREMENT

Figure 1 shows the principle of the test circuit. The test consists of the insulation measurement of the telecommunication network and the earth. During

this test it is permitted to remove components. In fact in the field the procedure is done as follow:

- The protection device is removed from the board.
- The telecommunication lines are connected together. Tip and Ring lines from all the subscribers for an exchange equipment, or A and B lines for a telephone set.
- A voltage of 2 kv is applied between the lines and ground.
- The current flowing in the test circuit shall not exceed the requested limit, for example 10 mA in the IEC950 case.

Fig. 1 : Test circuit



APPLICATION NOTE

OUR PROPOSAL

To withstand these new requirements SGS THOMSON proposes an adapted input / output arrangement for the THBT series.

Fig. 2 : SGS-THOMSON Microelectronics proposal

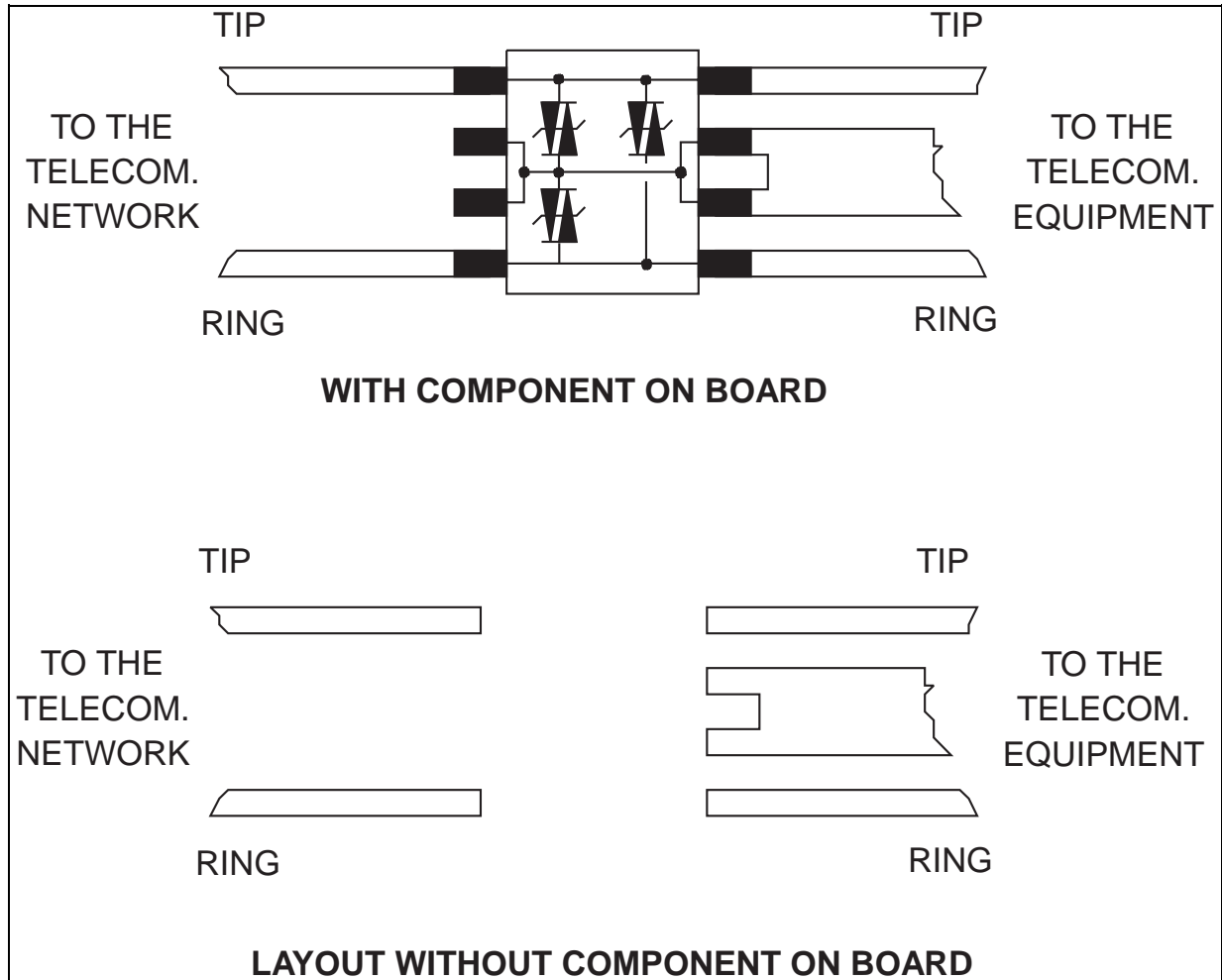


Figure 2 shows our proposal that consists of following points:

- Insulation between inputs and outputs. For example TIP coming from the telecommunication network is isolated from the TIP connected to the sensitive part of the circuit. That means, when the surge suppressor is removed, no current can flow through the telecommunication equipment.
- For the component which has got four ground pins (like the THBT200xx), only two pins are enough to withstand the maximum surge current capability of the component. That means only the two ground pins located on the telecommunication equipment side are connected.

SUMMARY

New standards concerning the protection of the telecommunication network service personnel, and other users of this network, from hazards in the equipment seems to be generalized. SGS THOMSON has taken into account this fact and proposes to meet these requirements by layout like shown in figure 2.

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1996 SGS-THOMSON Microelectronics - Printed in Italy - All rights reserved.

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco -
The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.