

COLLECTION OF IECE_x / ExTAG DECISIONS

Standard: IEC 79-11: 1999	Sub clause: 8.6	Sheet n.
Subject: Assessment of infallible safety shunt assemblies Status of document: draft [2001-08-16])	Key words: - safety shunts - safety shunt assemblies - SMD -	Decision of meeting date Originator of proposal: DE / DMT TC / SC involved: IEC SC 31G
<p>Question: Is it necessary to triplicate SMD (surface mounted devices) shunt safety components (e.g. Z-diodes) in infallible safety shunt assemblies?</p> <p>Answers: No</p> <p>Comment: It is certainly the case that IEC60079-11:1999 was not written with any particular concerns regarding surface mount devices even though the technology has been in existence for at least 15 years.</p> <p>SMD's are usually held in position (SMD position can be critical) by some form of 'glue' prior to reflow/wave/IR soldering. The soldering techniques used today for SMD printed circuit boards have practically eliminated dry-joints. The reliability of SMD connection is probably better than some leaded component assemblies.</p> <p>Looking at the requirements of the standard, clause 8.6 permits two parallel shunt devices as an infallible assembly and clause 8.7 permits their parallel connection (8.7c-1) to e.g. a 2mm track (8.7b-2). There are no additional requirements for the actual type of connection between component and track.</p> <p>A shunt assembly of two SMD diodes would therefore meet the requirements of the standard for an infallible assembly, and triplication of the SMD component is unnecessary.</p>		