



Fraunhofer Institut Zuverlässigkeit und Mikrointegration

Adaption to scientific and technical progress under Directive 2002/95/EC

Stakeholder contribution for exemption 7

"a) Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)

 b) lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunications

c) lead in electronic ceramic parts (e.g. piezoelectronic devices)"

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Piezo-electric ceramics

The levels of Piezoelectric Strain Coefficient (d constant) demanded by in-vehicle equipment

Sound parts actuators and sensors: 100 pm // or more	
Sound parts, actuators, and sensors. 400pm/v or more	
Filter: 100pm/V-400pm/V	Current candidate materials for the alternative
Resonator: 100pm/V-200pm/V	cannot have the same function as a resonator
Curie temperature (Tc) demanded from in-vehicle equipment	and a filter because each characteristic is
260°C ~ 350°C	insufficient for the required performance.



