

**SMD BATTERY CONNECTOR**  
**Spring Probe Type**

**1 SCOPE**

**1.1 Content.**

This specification covers the requirements for application of a special \*AMP 2,54mm pitch SMD Battery connector. The outer positions each consist of 2 contacts that will be soldered on 1 mutual solderpad. The connector is designed to make a connection between the Battery cells of a Battery-pack and the system printed circuit board. The contacting-end to the Battery is of the spring probe type, while the connection to the system PC-Board is of the surface-mount soldering-type.

**2 REFERENCE DOCUMENTATION.**

**2.1 For applicable performance requirements see Tyco Product Specification 108-19264**

2.2 For configuration details see customer drawing C-1705130

2.3 For packaging details see packaging instruction I.O. 4.15-24

**3 NOMENCLATURE.**

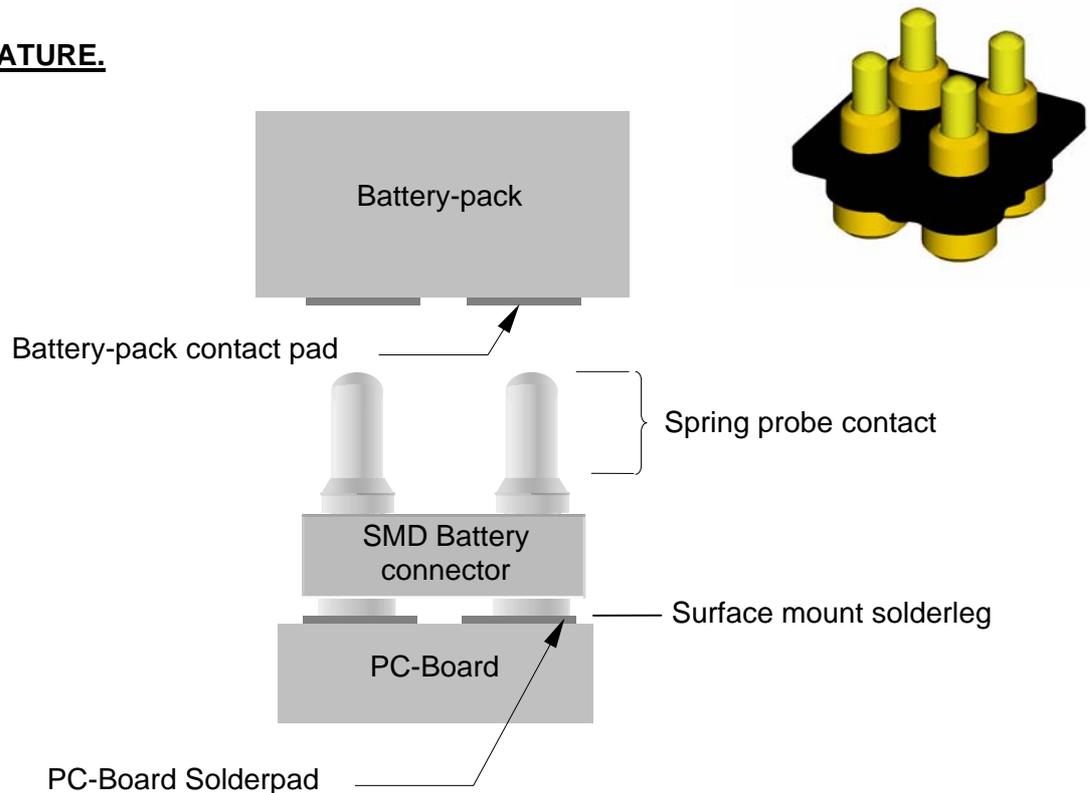


Figure 1

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DATE 30 JUN 03

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DATE ; 08 OCT 04

EC EH10-0256-04

## 4 REQUIREMENTS.

### 4.1 Connector Packaging, Storage and Handling.

Connectors are packaged and shipped in boxed reels of embossed tape packaging that conforms to Electronics Industry Association, EIA 481-B Packaging Standards. Boxes should remain unopened until ready for use to prevent damage to the tape and to prevent contamination of the solderlegs. They should be used on a first-in / first-out basis to prevent possible storage contamination and to insure maximum solderability. For packaging details see specification I.O. 4.15-24

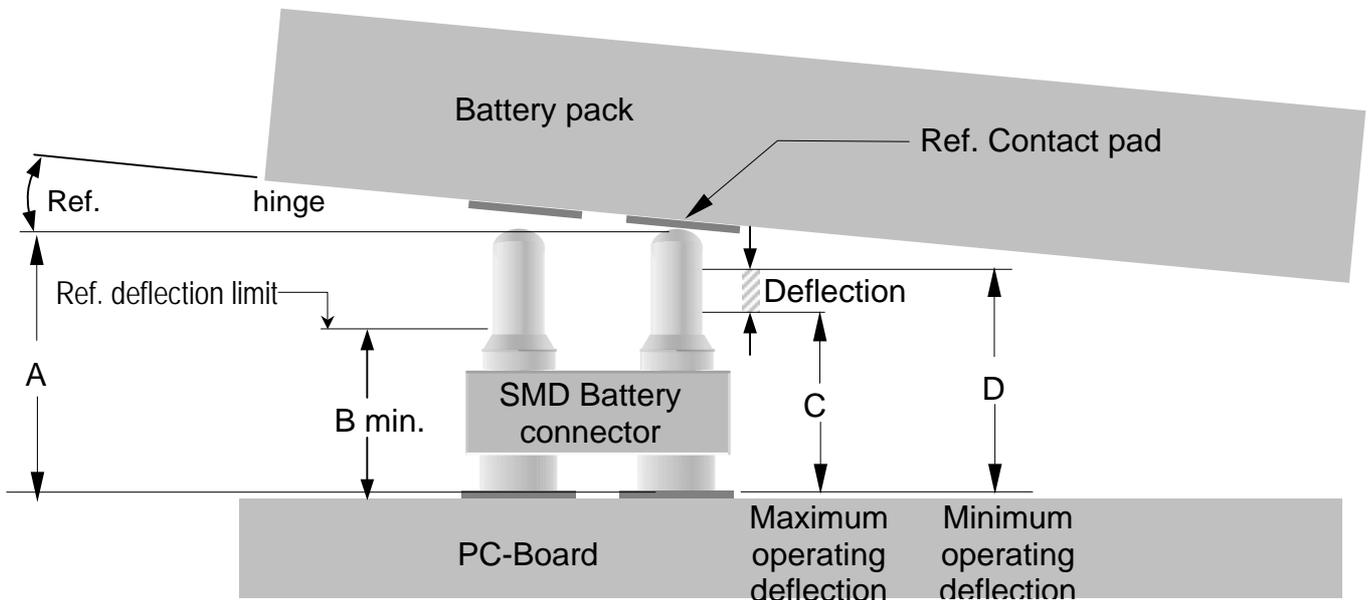
### 4.2 Connection To Interface

#### A. Interface pad layout and plating

The contact position tolerances of the Battery connectors are specified on customer drawing C-1705130. The interface pad layout shall be tuned with the tolerances of the Battery contact positions and the tolerances of all constructions in the applications design (including soldering) that are related to proper interconnection of all spring-probes within the surface area's of the pads. Pads shall be plated: 0,5 $\mu$  min. Au over 1,3 $\mu$  min. Ni

**B. Mating with interface**

The interface pads (contact pads of Battery-pack) shall contact the Battery contact probes straight or with a radius in case of a hinge construction. Once mated, the construction of the application shall assure proper fixation of mated parts within the operating deflection range as specified in Figure 2.



**Figure 2**

partnumber	Dim A	Dim B	Dim C	Dim D
1705130-1	5	3.6	3.9	4.5
1705795-1	5.6	4.2	4.5	5.1

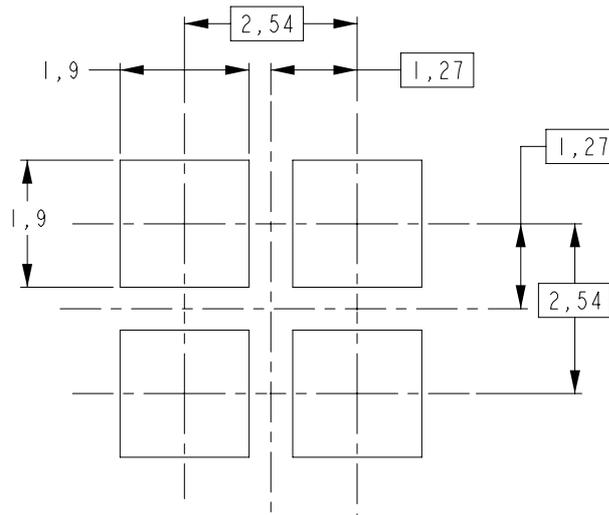
**C. Mechanical stability**

The constructions in the application shall provide mechanical stability of the Battery connector in relation to the interface pads (contact pads of Battery-Pack), in order to comply with the requirements specified in 4.2.A and 4.2.B.

**4.3 Printed Circuit Board.**

**A. Layout**

The PC Board solderpad lay-out shall be as specified in **Figure 3**



RECOMMENDED PCB PAD LAYOUT (REF.)

**Figure 3**

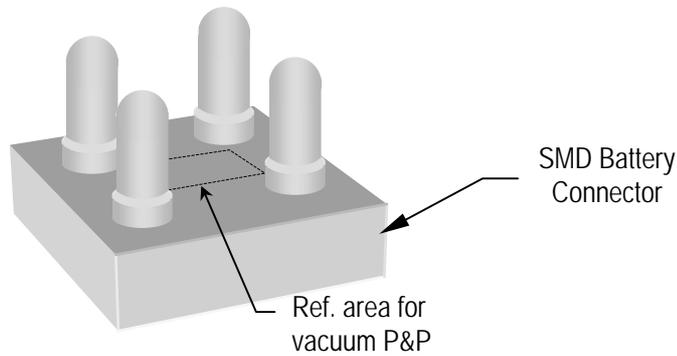
**B. Solderability**

Plated pads on the PC-Board shall be solderable as defined in AMP Specification 109-11-2. Additional information on solderability and soldering variables can be found in AMP Corporate Bulletin 52.

Solderpaste-height shall be 0,2 mm max. (aperture dimensions on the stencil shall be the same as the nominal pad dimensions shown in **Figure 3**).

**4.4 Connector positioning**

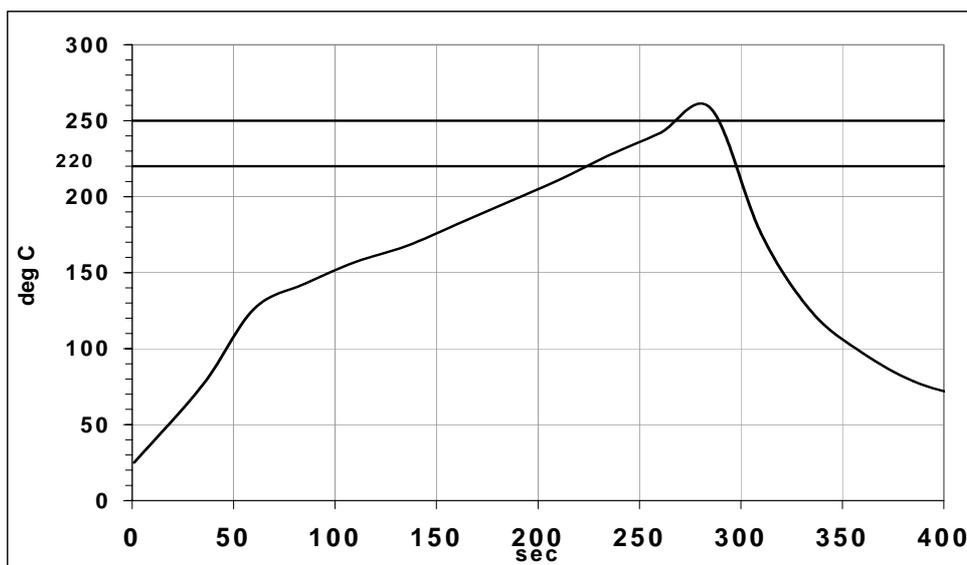
- A. The connectors are pre-positioned in the EIA packaging to accommodate easy robotic Pick & Place (P&P) see figure 2.
- B. Area for vacuum P&P is located symmetric on the connector housing area enclosed by the 5 spring-probe contacts. Available area is 2,2mm x 3,2mm. (See Figure 4)



**Figure 4**

**4.5 Connector soldering**

Connectors shall be soldered with IR-reflow method according to time/temperature curve as specified in **figure 5**



**Figure 5**

**time/temperature curve(continued)**

preheat slope 125 > 220	.4 to 1.0	deg/s
t for T=125 to 220	150 to 210	sec
t at T to 220 degC	60 to 90	sec
t at T to 250 degC	10 to 30	sec
T peak	260 -5/+0	deg C
max. cooling rate for T=250 to160	6	deg/s
t for T=125 to 220	240 to 360	sec

**4.6 Visual Inspection.**

**A. Contact damage**

Probe-spring contacts (see figure 1) shall not be deformed and their plating shall not be scratched by collision with vacuum nozzle during Pick & Place actions or by any other cause during the Pick&Place and soldering process.

**B. Solder connection**

All five solderlegs shall be properly soldered on the appropriate PC-Board pads, and shall not show any cracks in their solderjoints.