SLIDING SIM CONNECTOR LOW PROFILE

1. SCOPE .

1.1 Content.

This specification covers the requirements for application of a special Tyco Electronics Sliding SIM connector Low Profile. The connector is designed to make a connection between a Subscriber Identity Module (SIM) according to ISO 7816-2 and a printed circuit board.
The physical characteristics of the SIM card connector are in accordance with GSM 11.11.

2. REFERENCE DOCUMENTATION.

2.1 For applicable performance requirements see *Tyco electronics* Product Specification 108-19241

2.2 For configuration details see customer drawing(s):

C-6483856 Customer drawing of “Sliding SIM connector Low Profile, 6 positions”
C-1705615 Customer drawing of “Scalable Sliding SIM connector two piece clip”

3. NOMENCLATURE.

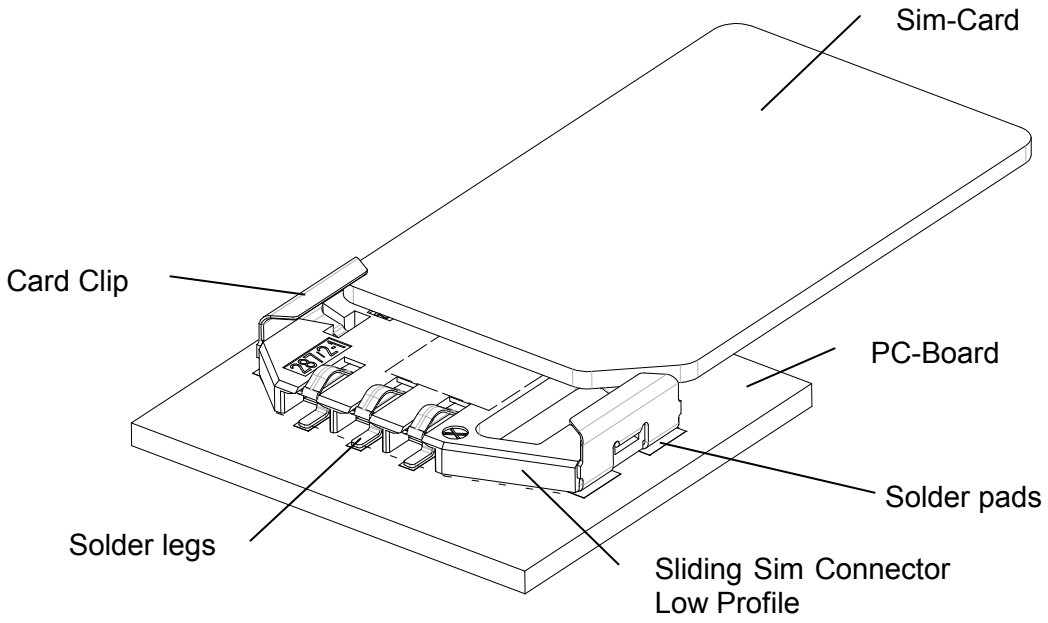

Figure 1.

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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.

The leading end of each new reel starts with 25 empty covered pockets, followed by 1300 covered pockets containing connectors (see customer drawing), 10 empty covered pockets and a certain length of plain covertape fixed to the core of the reel. (see figure 2.)

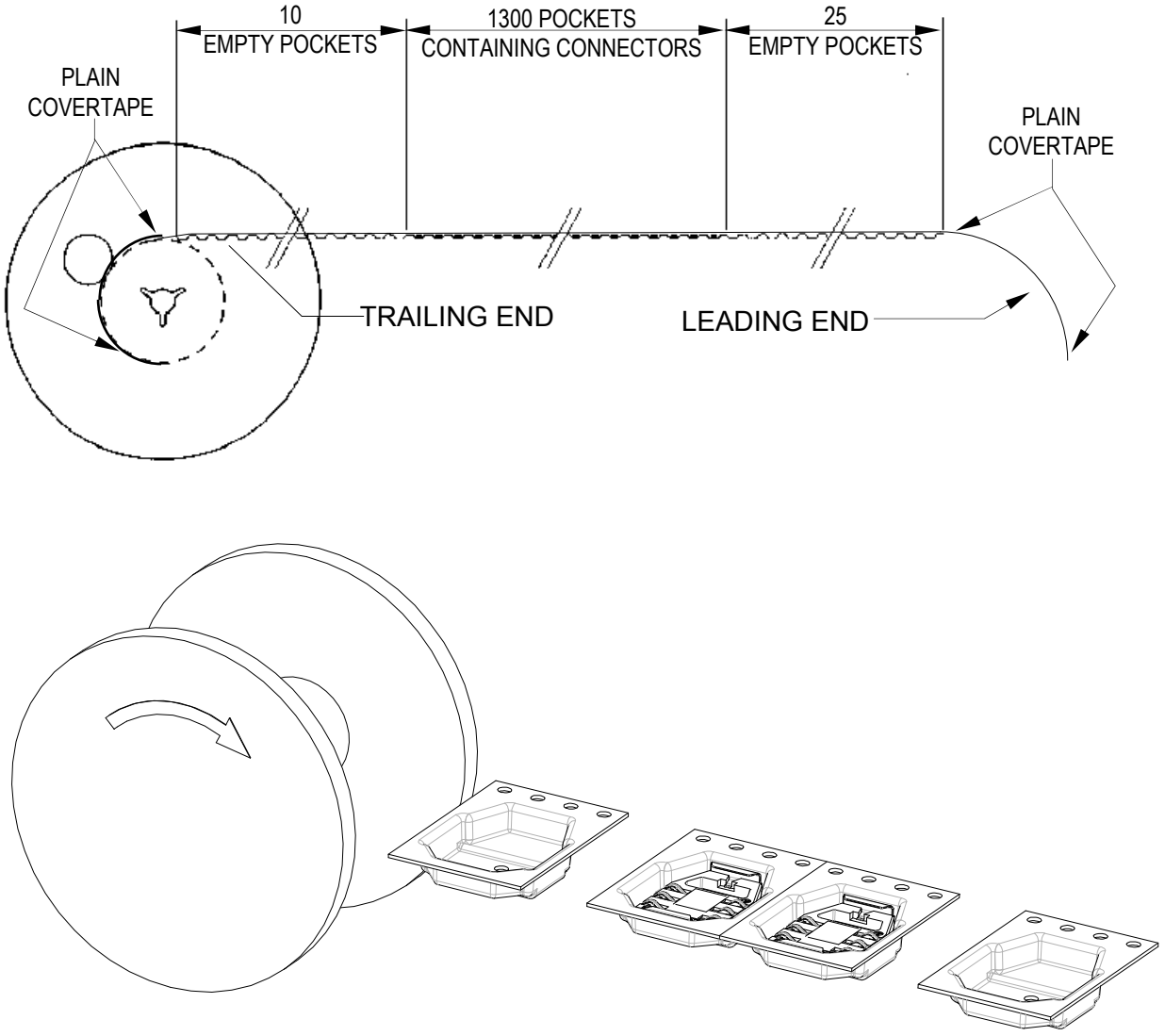

Figure 2

4.2 Product Selection.

For product selection see updated customer drawing C- 6483856/ 1705615 (see Figure 2)

4.3 Connector Interface.

A. Interface pad layout and plating

SIM-Cards contact-pads layout shall be in accordance with ISO 7816-2.

B. Mating with interface

Mounting of SIM card shall be as showed in figure 3. The arrow indicates the SIM Card Insertion and withdrawal direction.
Once mated, a stop in the construction of the application shall assure the proper position of the SIM card regarding the contact spring.

Figure 3.

C. Mechanical stability

The constructions in the application shall provide mechanical stability of the SIM Card module in relation to the interface pads (contact pads of SIM card), in order to comply with the requirements specified in 4.3.A and 4.3.B.

This is to avoid unacceptable force load on the Card Guide and therefore on the connector as well as on the SMD solder joints and to prevent deformation of the SIM-card.

D. Precautions related to known abuse or misuse of the SIM card

The construction in the application shall assure straight card insertion handling.
The maximum angle to insert and extract the SIM card under the Card Guide is 5,0°.

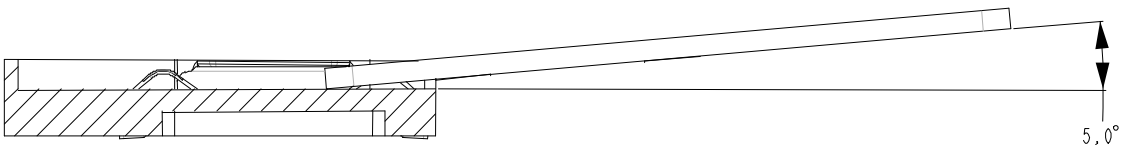

Figure 4.

4.4 Printed Circuit Board.

A. Lay-out

The PC-Board solder pad layout shall be as specified on the Customer print 6483856/ 1705615

B Solderability

Plated parts on the PC-Board shall be solderable as defined in Tyco specification 109-11-2. Additional information on solderability and soldering variables can be found in Tyco Electronics AMP Corporate Bulletin 52.
Solder paste-height shall be 0.2 mm max. (aperture dimensions on the stencil shall be the same as the nominal pad dimensions shown on the customer print 6483856/ 1705615).

4.5 Component 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 on the connector mating surface.
Minimum available area is 5 mm x 4 mm. See figure 5 and c-print 6483856/ 1705615.

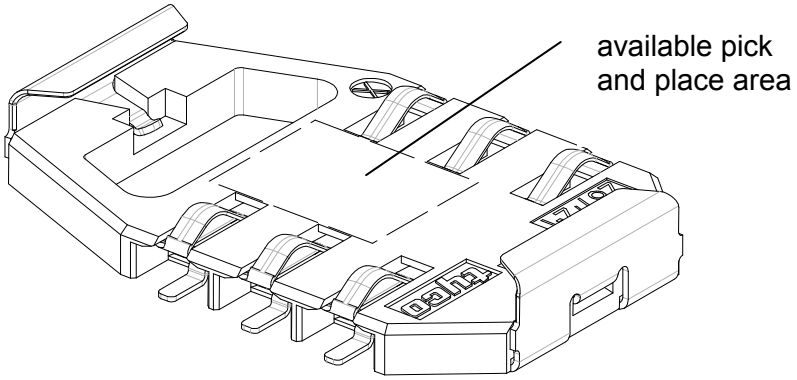

Figure 5.

4.6 Soldering process

Resistance to soldering-heat test shall cover the Forced hot air convection (reflow) heat curve as indicated in figure 6.
ref. IPC/JEDEC J-STD-020B with increased T peak (T_P).

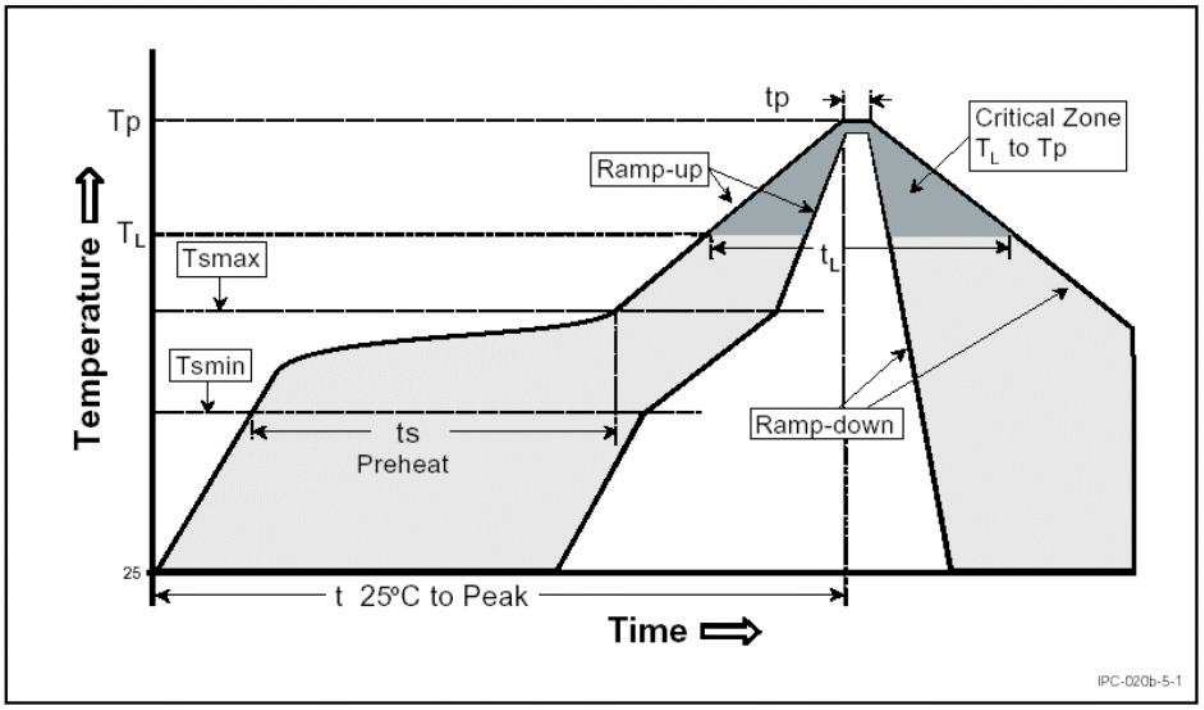

Figure 6. Forced hot air convection (reflow) heat curve

Profile feature	Pb-Free Assembly Small Body
Average ramp-up rate (T_L to T_P)	3°C /second max.
Preheat - Temperature Min ($T_{S\ min}$) - Temperature Max ($T_{S\ max}$) - Time (min to max) (t_S)	 150°C 200°C 60-180 seconds
$T_{S\ max}$ to T_L - Ramp-up Rate	 3°C /second max.
Preheat - Temperature Min (T_L) - Time (t_L)	 217°C 60-150 seconds
Peak temperature (T_P)	260 +0/-5°C
Time within 5°C of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6°C /second max.
Time 25°C to Peak Temperature	8 minutes max.

Note: All temperatures refer to topside of the package, measured on the package body surface.

4.7 Handsoldering during removal and replacement.

A. Connector removal from PC-Board

Manual hotgas soldering method shall be used to remove battery connector from board. Damaging of the removed connector is allowed. Solder conditions shall be as follows:

Max. air temperature	+ 300° C
Max. air velocity	10 m/s
Max. exposure time	30 s

B. Connector replacement on PC-Board

Manual soldering iron method shall be used to solder the replacing connector to the PC-Board. Damage to the replacing connector is not allowed. Care shall be taken here not to melt the connector housing. Solder conditions shall be as follows:

Tip diameter	Selected to fit application
Max. tip temperature when iron is removed from heater	+ 370° C
Max. tip temperature when applied to connector solderleg	below 250° C
Antistatic protection	Required
Max. exposure time	3 s

4.8 Visual examination

A. Contact damage

Sliding SIM connector (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, soldering process and assembly process in the final product.

B. Solder connection

All ten solderlegs shall be properly soldered on the appropriate PC-Board pads, and shall not show any cracks in their solderjoints.
The criteria mentioned in Tyco Workmanship specification 101-21 must be fulfilled.