

tesa® HAF 8414

Product Information



translucent z-axis conductive heat activated film

Product Description

tesa® HAF 8414 is a translucent heat-activated adhesive film that contains electrically conductive particles.

Product Features

- Chip module bonding and electrical connectivity in one step
- Good workability on all common implanting lines
- Suitable for PVC, ABS and PC cards (Dual Interface (D.I.) and contactless cards)
- Suitable for silver ink substrates and wire antenna
- Mean particle diameter: 40 µm

Application Fields

tesa® HAF 8414 is designed for all applications where reliable electrical connections and strong bonds are required. Lead applications are chip module embedding in Dual Interface (DI) cards and for RFID tags.

Technical Information (average values)

The values in this section should be considered representative or typical only and should not be used for specification purposes.

Product Construction

- | | | | |
|--------------------|-------------|-----------------|-------------|
| • Backing material | none | • Type of liner | glassine |
| • Type of adhesive | copolyamide | • Color | translucent |

Properties/Performance Values

- | | |
|-------------------------------|---------------------|
| • Bonding strength (push-out) | 7 N/mm ² |
|-------------------------------|---------------------|

Additional Information

Processing:

Please note that optimal parameters strongly depend on the type of machine, particular materials for card bodies, antenna material or chip-modules as well as individual customer requirements. The bonding time depends on the heat transition of the used substrates. Additionally we recommend a cooling step directly after the bonding step. Thereby pressure should be applied until film temperature decreases below softening temperature (approx. 110 °C).

The following data are recommendations for the initial set-up of machine parameters.

1. Pre-lamination:

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During pre-lamination, the adhesive tape is laminated onto the module belt. An accurate pre-lamination is in particular important for tesa HAF® 8414 in order to ensure a good adhesion and a good conductivity inside of the final product.

Machine setting:

- Temperature 130 - 150 °C
- Pressure 3 - 4 bar
- Time 2.5 m/min.

2. Conductive Bonding:

During module embedding, the pre-laminated modules are die-cut from the module belt, positioned into the card cavity and permanently bonded to the card body by heat and pressure. Depending on the type of the implanting line, single step or multiple step process can be used. Today, most implanting machines have multiple heat press steps.

Single step process - Machine setting:

- Temperature¹ 160 – 220 °C
- Pressure 65 - 130 N/module
- Time 1.5 s

Multiple step process (2 or more heating stamps) - Machine setting:

- Temperature¹ 180 – 220 °C
- Pressure 65 - 130N/module
- Time 2 x 0,7 s. / 3 x 0.5 s.

¹Temperature recommendations refer to what can be measured inside the heating stamp. Different temperature settings are recommended for different card material:

- PVC 180 – 190 °C
- ABS 180 – 190 °C
- PET 190 – 200 °C
- PC 200 – 220 °C

To reach maximum bonding strength surfaces should be clean and dry. Storage conditions according to tesa HAF® shelf life concept.

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