

tesa® HAF 8414

Product Information



Anisotropic conductive heat activated adhesive film

Product Description

tesa® HAF 8414 ACF is an anisotropic conductive translucent heat activated adhesive film that contains electrically conductive particles.

tesa® HAF 8414 ACF features:

- Anisotropic conductivity after the application
- Mechanical module bonding and electrical connectivity in one step
- Good workability on all common implanting lines
- Suitable for PVC and ABS cards (DI)
- Suitable for silver ink substrates (RFID)

Mean particle diameter: 40 µm

Application Fields

tesa® HAF 8414 ACF 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 strap attachment 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 | • Colour | translucent |

Properties/Performance Values

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

Additional Information

Technical Recommendations:

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).

Example for Embedding DI-Card Modules:

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. This step can be performed inline or offline. An accurate pre-lamination is in particular important for HAF 8414 ACF in order to ensure a good adhesion and a good conductivity inside of the final product.

Machine setting:

- Temperature 130 - 150 °C
- Pressure 4 - 6 bar
- Time 1,5 - 3,0 s

2. Conductive Bonding:

The pre-laminated modules are die cut from the module belt, positioned and then permanently bond to the substrate by heat. For this step, the exact handling depends on the type of the implanting line used. Today, two different ways are most common:

Single step process - Machine setting (low temperature):

- Temperature¹ 160 – 180 °C
- Pressure 15 - 35 bar
- Time 2,0 – 4,0 s

Single step process - Machine setting (high temperature):

- Temperature¹ 180 – 200 °C
- Pressure 15 - 35 bar
- Time 1,0 – 1,5 s

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

- Temperature¹ 170 – 200 °C
- Pressure 15 - 35 bar
- Time (for each step) 0,7 – 1,2 s

¹ Temperature as measured inside the heating stamp

Storage Recommendations:

The product should be stored in a dry environment at room temperature. The shelf life under recommended storag

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