



OUR CHIP BONDING SOLUTIONS

For the Embedding of Modules in Smart Cards

OUR SOLUTIONS FOR RELIABLE BONDING

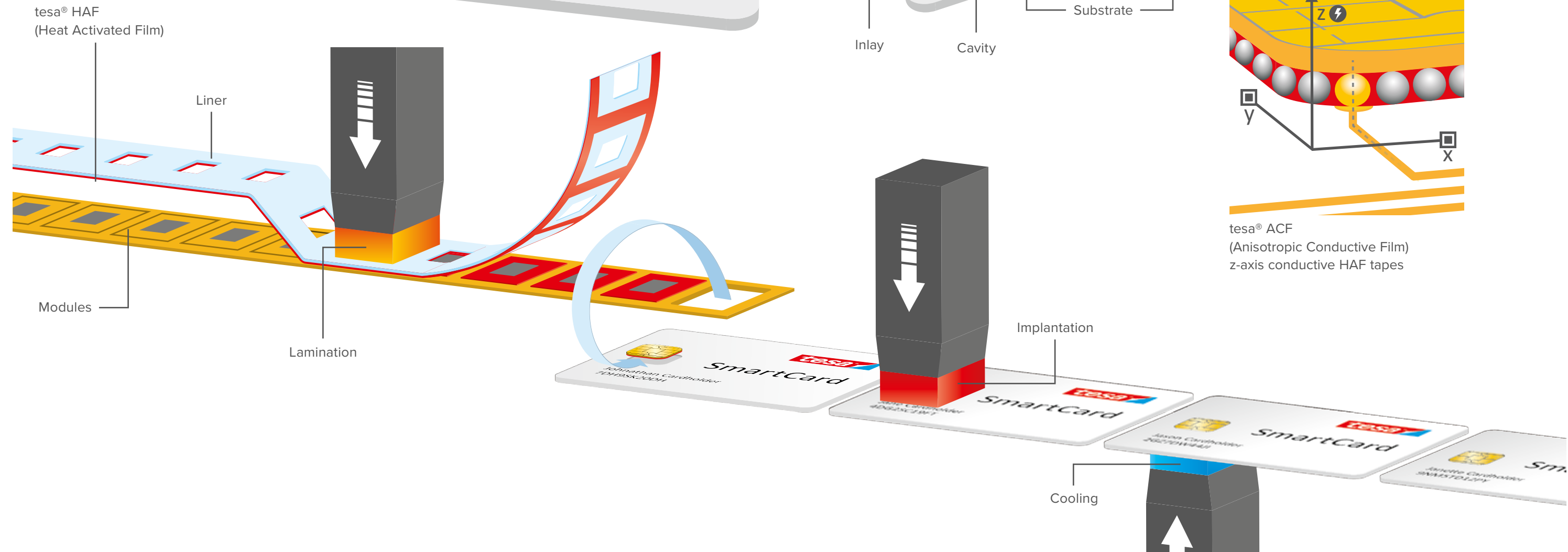
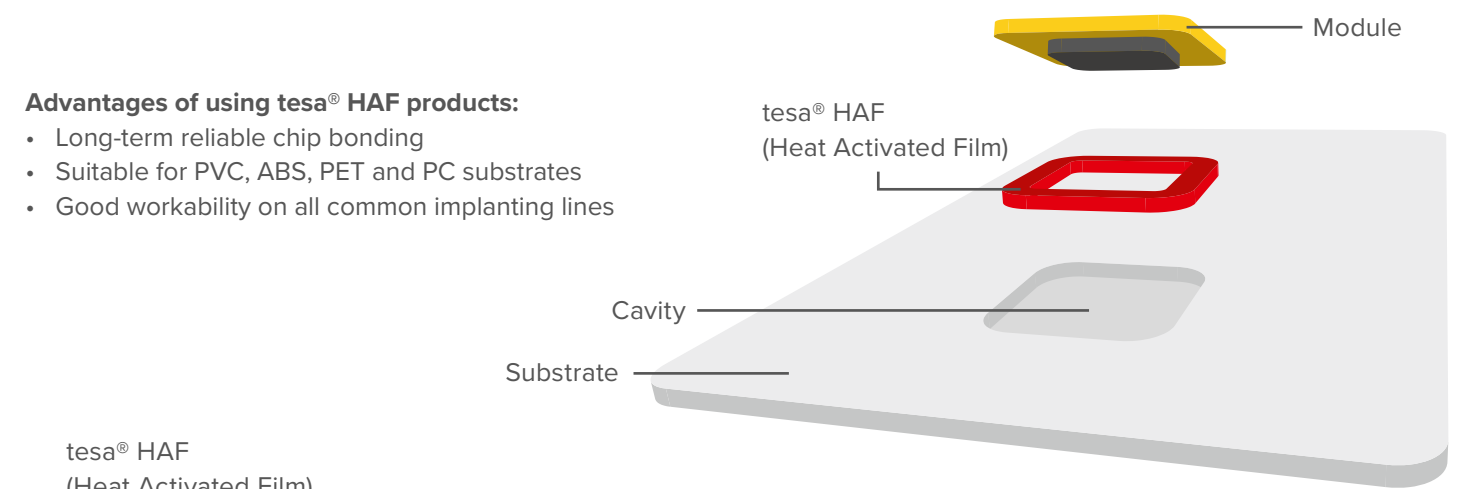
Contact cards

As one of the leading suppliers for adhesive solutions, we have been serving the Smart Card industry for many years with high quality products. Launched in the 1980's, the market of Contact Cards is growing year after year and represents more than 80% of the Smart Card market. SIM, Payment and Identity Cards are used in our daily life.

Permanent bonding of a chip module into the cavity of substrates is crucial for all Smart Card manufacturers to ensure the proper functioning in our daily applications. For Contact Card assembly processes we offer tesa® HAF, a complete range of Heat Activated Films with a high level of bonding strength to a variety of card substrates.

Advantages of using tesa® HAF products:

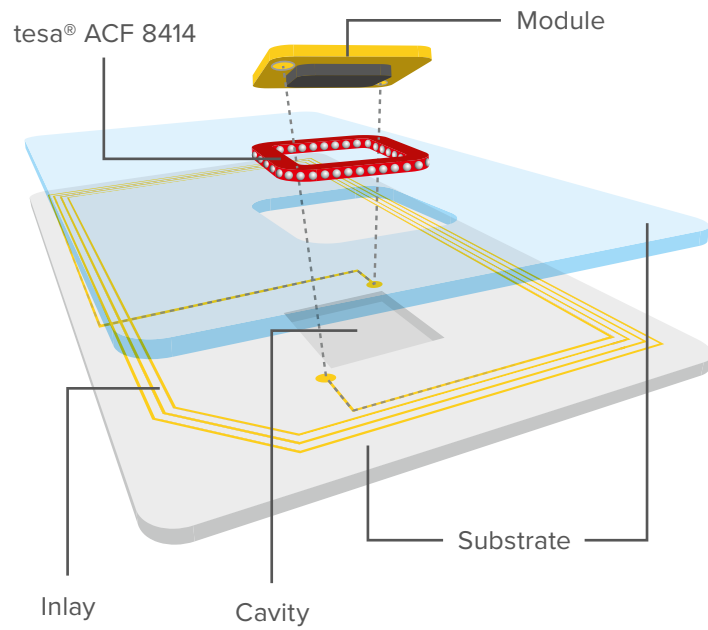
- Long-term reliable chip bonding
- Suitable for PVC, ABS, PET and PC substrates
- Good workability on all common implanting lines



Dual interface cards

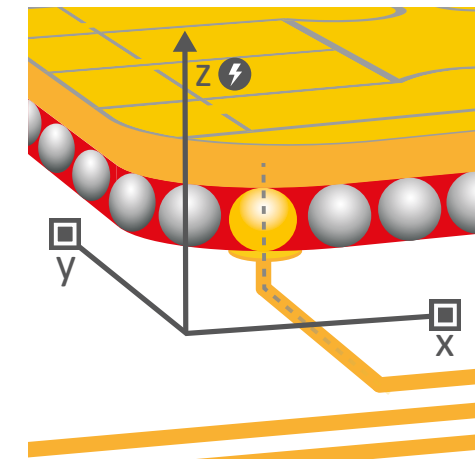
The market of Dual Interface Cards (DI Cards) is booming, especially in Payment and Identity Cards. Dual Interface Cards require a reliable connection between the antenna and the chip module. For Dual Interface Card assembly processes, we offer tesa® ACF 8414, an Anisotropic

Conductive Hotmelt Film adapted to your common implanting lines without investments. Mechanically embedding the module and electrically contacting the antenna are now performed in one single step as easy as the assembling of Contact Cards.



Advantages of using tesa® HAF products:

- Long-term reliable chip bonding and electrical connectivity in one step
- Good workability on all common implanting lines (Any investment in machines dedicated to DI Cards)
- Suitable for PVC, ABS, and PC substrates



tesa® ACF (Anisotropic Conductive Film) z-axis conductive HAF tapes

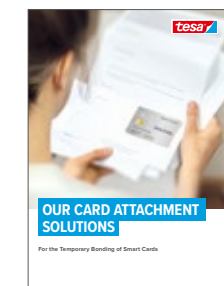
TECHNICAL DATA

HAF (Heat activated film) and ACF (Anisotropic activated film)

	tesa® HAF 8410	tesa® HAF 8430	tesa® HAF 58434	tesa® HAF 8440	tesa® HAF 8414 ACF
Application					
Type of cards	Contact Cards	Contact Cards	Contact Cards	Contact Cards	Contact Cards
Market	Telco/SIM, payment, identity, health, driving, etc.	Telco/SIM, payment, identity, health, driving, etc.	Telco/SIM, payment, identity, health, driving, etc.	Telco/SIM, payment, identity, health, driving, etc.	Payment and identity
Product description					
Adhesive	Nitrile rubber/ Phenolic resin	Nitrile rubber/ Phenolic resin	Nitrile rubber/ Phenolic resin	Copolyamide	Copolyamide/ Electrical conductive particles
Color	Brown	Brown	Black	Translucent	Translucent
Thickness [µm]	60	45	50	40	45
Standard length [m]	100/200	200	200	200/300	100
Standard width [mm]	29	29/29.5	29	29/29.5	29.5
Shelf life at customer site	12 months at 25°C 15 months at 15°C 18 months at 5°C	12 months at 25°C 15 months at 15°C 18 months at 5°C	12 months at 25°C 15 months at 15°C 18 months at 5°C	12 months at 25°C 15 months at 15°C 18 months at 5°C	12 months at 25°C 15 months at 15°C 18 months at 5°C
Lamination*					
Temperature of die [°C]*	120-140	120-140	120-140	130-140	130-150
Time [sec]	1.5-3.0	1.5-3.0	1.5-3.0	1.5-3.0	1.5-3.0
Pressure [N/module]	2.0-3.0	2.0-3.0	2.0-3.0	2.0-3.0	4.0-6.0
Implanting*					
Temperature of die [°C]*	180-200	180-200	180-200	180-200	180-200
Time [sec]	2 x 0.7/3 x 0.5	2 x 0.7/3 x 0.5	2 x 0.7/3 x 0.5	2 x 0.7/3 x 0.5	0.7-1.2 (each step)
Pressure [N/module]	65-75	65-75	65-75	65-75	15-35 bars/module
Performance and card material					
PVC	●●	●●	●●	●●	●●
ABS	●●	●●	●●	●●	●●
PET	●●	●●	●●	●	●
PC	●●	●●	●●	●●	●●

* Time and pressure depend on the type of embedding machines – for implanting, the total time required is 1.5 s – tests requested.

●● very good ● good



For further information about attaching cards to letters we also offer the tesa® Card Attachment Folder.

Exclusive application testing

In our application laboratories, we analyze the customers' materials in combination with several adhesive tape solutions. Depending on customer-specific demands, our analysis includes push-out tests, bending in various conditions, parameter and climate tests, and much more. The result: adhesive tape solutions that perfectly suit any technical application.



tesa® products prove their impressive quality day in, day out in demanding conditions and are regularly subjected to strict controls. All technical information and data above mentioned are provided to the best of our knowledge on the basis of our practical experience. They shall be considered as average values and are not appropriate for a specification. Therefore tesa SE can make no warranties, express or implied, including, but not limited to any implied warranty of merchantability or fitness for a particular purpose. The user is responsible for determining whether the tesa® product is fit for a particular purpose and suitable for the user's method of application. If you are in any doubt, our technical support staff will be glad to support you.



12/2016



Our management system is certified according to the standards ISO 9001, ISO/TS 16949, and ISO 14001.