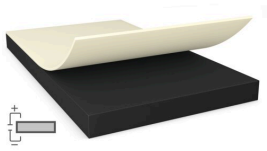
tesa® HAF 58451

Product Information



30 µm black electrically conductive (XYZ) reactive HAF mounting tape

Product Description

tesa HAF® 58451 is a reactive heat activated film based on phenolic resin and nitrile rubber with electrically conductive properties. This black double sided tape has no backing. It is protected by a 50 µm PET liner.

At room temperature tesa HAF® 58451 is not tacky. It is activated by heat and pressure applied during the assembly process.

Product Features

- Extremely high performance, even on small bonding areas and thin design gaps
- Excellent electrical conductivity in XYZ-direction
- Superior anti-repulsion properties even at elevated temperatures
- Outstanding chemical resistance

Application Fields

tesa HAF® 58451 is especially recommended for bonding of various metal surfaces, e.g. SUS or AL.

- Grounding applications with structural bonding requirements
- Narrow and small bonding areas but still need very strong bonding strength
- High repulsion force applications such as curved or bended bonds
- Grounding applications exposed to high temperature and humidity

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	none	• Total thickness	30 µm
• Type of adhesive	nitrile rubber / phenolic resin	• Color	black
• Type of liner	PET		

Properties/Performance Values

• Bonding strength (dynamic shear)	5 N/mm^2	• Contact resistance z-direction	30 mOhm

Additional Information

Electrically conductive performance for small bonding applications (x-y-z-direction, see below)

For latest information on this product please visit http://l.tesa.com/?ip=58451

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Additional Information

Contact resistance 1 evaluates electrical resistance through an x-y-z-directional current path under a small bonding configuration.

Unlike conventional contact resistance, which primarily evaluates the z-direction, this method reflects conductivity through the x-, y-, and z-directional path.

- Contact resistance 1: 50 mohm
- Sample dimensions: 10 mm × 10 mm
- Contact area: 0.5 mm × 10 mm

Joint resistance 1 evaluates electrical resistance when the tape forms a conductive bridge between two separated electrodes or conductive components.

- Joint resistance 1: 500 mohm
- Sample dimensions: 30 mm × 10 mm
- Contact area: 0.5 mm × 10 mm

Technical recommendations: tesa HAF® 58451 is not self adhesive. It is activated by heat and pressure over a certain interval. The following values are recommendations for bond line parameters to start with.

1. Pre-lamination: During pre-lamination, the tape is laminated onto one component.

Setting:

- Temperature[1]: 85-120 °C
- Pressure[2]: ≥5 bar
- Time: 5-10 s

2. Bonding: Remove the liner from the tape after pre-lamination step. Place the pre-laminated component onto the substrate to bond with. Apply sufficient temperature while applying pressure for the bonding time to reach sufficient bonding strength.

Setting:

- Temperature[1]: 120-250 °C
- Pressure[2]: 5-30 bar
- Time: 5 s – 3 min

[1] 'Pre-lamination' and 'Bonding' temperature refer to the data that is measured in the bond line. [2] 'Pre-lamination' and 'Bonding' pressure refer to the force that is transformed from jig surface directly to the bonding area. Bonding strength values were obtained under standard laboratory conditions. (Material: SUS test specimen / bonding conditions: temperature = 180 °C; pressure = 30 bar; time = 30 sec). To reach maximum bonding strength surfaces should be clean and dry.

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Disclaimer

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