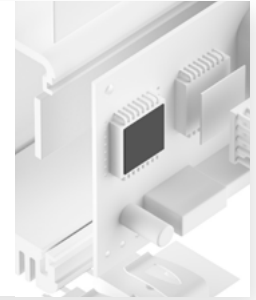


# GRAPHITE FOIL TFO-S-CB

anisotropic



TFO-S-CB consists of more than 98% pure natural graphite. Due to the flake-like shape they show anisotropic thermal conductivities in-plane (x-y-plane) and in through direction (z-direction). Their softness allows for a good compliance to the contact surfaces. Thus the total thermal resistance is minimised. Their low densities compared to copper (15%) or aluminum (50%) make them ideal for applications where low weight is required. The very high temperature resistance allows for the use in extreme hot environments.



Release 07 / 2021

### PROPERTIES

- Maximum contact through good surface compliance
- Very low weight
- Silicone-free
- Very high temperature resistance
- EMI-shielding through high electrical conductivity

### AVAILABILITY

- Sheet 300 x 500 mm
- Roll 300 mm x 50 m
- Die cut parts
- Non adhesive (TFO-SXXX-CB)
- Adhesive on one side (TFO-SXXX-CB-A1)

### APPLICATION EXAMPLES

Thermal link of:

- CPUs to heat sinks
- Power modules
- Semiconductors
- IGBTs

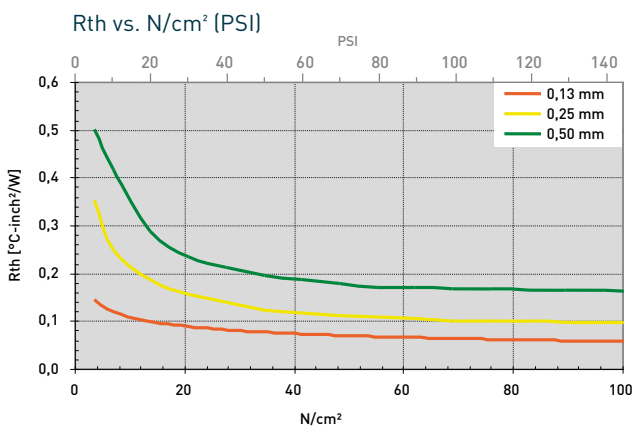
For use in Power inverters / Laptops / Automotive power supplies / Industrial PCs

Technical Data Sheet

| PROPERTY                             | UNIT                    | TFO-S130-CB             | TFO-S250-CB             | TFO-S500-CB             |
|--------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>MATERIAL</b>                      |                         |                         |                         |                         |
|                                      |                         | Natural Graphite 98%    | Natural Graphite 98%    | Natural Graphite 98%    |
| Colour                               |                         | Grey                    | Grey                    | Grey                    |
| Thickness                            | mm                      | 0.13 ±0.03              | 0.25 ±0.03              | 0.5 ±0.05               |
| Hardness                             | Shore A                 | 85                      | 85                      | 85                      |
| UL Flammability                      | UL 94                   | V0                      | V0                      | V0                      |
| RoHS Conformity                      | 2015 / 863 / EU         | Yes                     | Yes                     | Yes                     |
| <b>THERMAL</b>                       |                         |                         |                         |                         |
| Resistance <sup>1</sup> @ 150 PSI    | °C-inch <sup>2</sup> /W | 0.06                    | 0.10                    | 0.16                    |
| Resistance <sup>1</sup> @ 30 PSI     | °C-inch <sup>2</sup> /W | 0.09                    | 0.16                    | 0.23                    |
| Resistance <sup>1</sup> @ 10 PSI     | °C-inch <sup>2</sup> /W | 0.12                    | 0.24                    | 0.40                    |
| Thermal Conductivity (Z Direction)   | W/mK                    | 8                       | 8                       | 8                       |
| Thermal Conductivity (X-Y Direction) | W/mK                    | 140                     | 140                     | 140                     |
| Operating Temperature Range          | °C                      | - 250 to + 400          | - 250 to + 400          | - 250 to + 400          |
| <b>ELECTRICAL</b>                    |                         |                         |                         |                         |
| Volume Resistivity                   | Ohm - cm                | 11.0 x 10 <sup>-4</sup> | 11.0 x 10 <sup>-4</sup> | 11.0 x 10 <sup>-4</sup> |
| Dielectric Constant                  | @ 1 MHz                 | < 0.001                 | < 0.001                 | < 0.001                 |

Measurement technique according to: 'ASTM D 5470. All data without warranty and subject to change. Please contact us for further data and information. Shelf life adhesive: 6 months when stored in original packaging at room temperature and 50% relative humidity.

Thicknesses: 0.13 mm / 0.25 mm / 0.5 mm



All technical data and information are without warranty and believed to be reliable and accurate, corresponding to the latest state of the art. Since the products are not provided to conform with mutually agreed specifications and their use and processing are unknown we cannot guarantee results, freedom from patent infringement, or their suitability for any application. Product testing by the applicant is recommended. We reserve the right of changes.