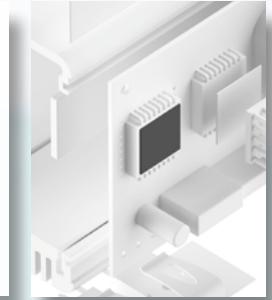


# GRAPHITE FOIL TFO-S-CB

anisotropic



TFO-S-CB consists of more than 98% pure 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 aluminium (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 04 / 2014

### PROPERTIES

- Maximum contact through good surface compliance
- Very low weight
- Silicone-free
- Very high temperature resistance
- EMI-shielding through high electrical conductivity
- Optional with/without UL V0

### AVAILABILITY

- Sheet 300 x 500 mm
- Roll 300 mm x 50 m
- Non adhesive (TFO-SXXX-CB)
- Die cut parts
- Sheet 457 x 609 mm
- Roll 609 mm x 50 m
- Adhesive on one side (TFO-SXXX-CB-UL-A1)
- Die cut parts
- Kiss cut parts on roll or sheet

### APPLICATION EXAMPLES

Thermal link of:

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

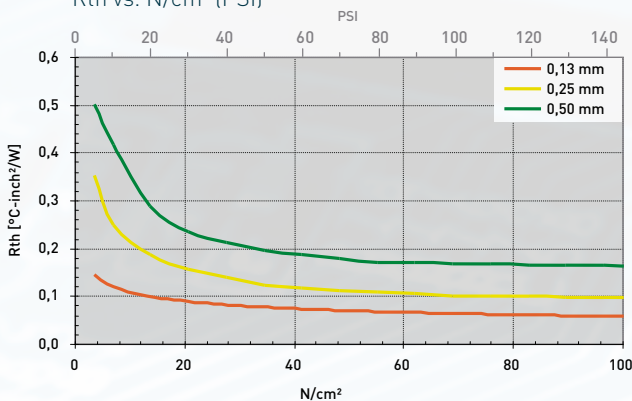
For use in Power inverters / Laptops / Automotive power supplies / Industrial PCs

Property	Unit	TFO-S130-CB	TFO-S250-CB	TFO-S510-CB
<b>Material</b>		Graphite 98%	Graphite 98%	Graphite 98%
Colour		Grey	Grey	Grey
Thickness	mm	0.13	0.25	0.5
Hardness	Shore A	85	85	85
UL Flammability	UL 94	V0 (for TFO-S-CB130-UL-A1)	V0 (for TFO-S-CB250-UL-A1)	V0 (for TFO-S-CB510-UL-A1)
RoHS Conformity	2002/95/EC	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	- 240 to + 300	- 240 to + 300	- 240 to + 300
<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

Test Methods: <sup>1</sup>ASTM D 5470. All data without warranty and subject to change. Please contact us for further data and information.

Thicknesses: 0.13 mm / 0.25 mm / 0.5 mm

Rth vs. N/cm<sup>2</sup> (PSI)



All technical data and information are without warranty and believed to be reliable and accurate. 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.