

SpreaderShield[™] Heat Spreaders

TECHNICAL DATA SHEET 321

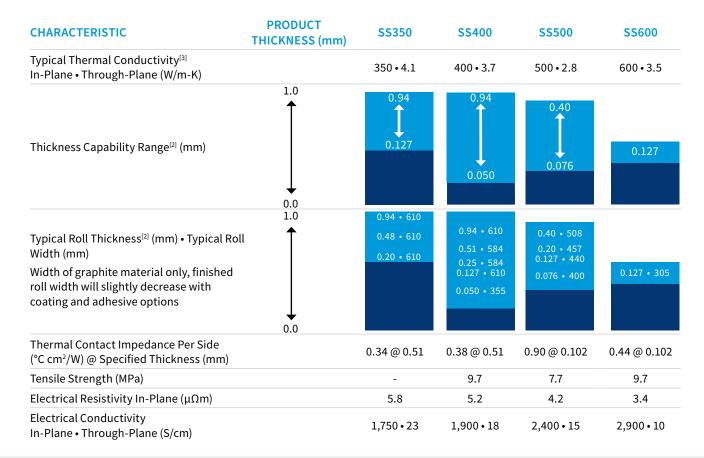
Product Overview

SpreaderShield™ flexible graphite products function as both a passive heat spreader and heat shield. These products offer a variety of in-plane thermal conductivity solutions. The flexible graphite materials can be die-cut, or laminated with plastics and/or adhesives.

Part Designation

Every SpreaderShield flexible graphite heat spreader part number defines the grade and coating options of the material. It is constructed based on the example below. For additional coating information, please reference Technical Data Sheet 322 - SpreaderShield™ Design Options.

SpreaderShield Product Series Characteristics: Natural Graphite Products [1]





SpreaderShield™ HEAT SPREADERS

SpreaderShield Product Grade Characteristics: Natural Graphite Products [1]

CHARACTERISTIC	SS350	SS400	SS500	SS600
Coefficient of Thermal Expansion (ppm/°C) In-Plane • Through-Plane	-0.4 • 27.0	-0.4 • 27.0	-0.4 • 27.0	-0.4 • 27.0
Specific Heat ^[4] (J/g°C) @ 50°C	0.81	0.81	0.81	0.81
Operating Temperature (°C)	-40 to +400	-40 to +400	-40 to +400	-40 to +400
UL Flammability Rating	94V-0	94V-0	94V-0	94V-0
RoHS Compliant	Yes	Yes	Yes	Yes
Lead / Halogen-Free	Yes	Yes	Yes	Yes

SpreaderShield Product Grade Characteristics: Synthetic Graphite Products [1]

CHARACTERISTIC	TG-826ACR	TG-827CR	TG-828CR	TG-829CR
Thickness (mm)	0.017 ±0.003	0.025 ±0.005	0.032 ±0.005	0.040 ±0.005
Typical Roll Dimensions Width (mm)	200	240	240	200
Typical Thermal Conductivity ^[3] (W/m-K) In-Plane • Through-Plane	1600 • 3.4	1500 • 3.4	1400 • 3.4	1350 • 3.4
Electrical Conductivity (S/cm) In-Plane • Through-Plane @0.025mm	19,000 • 5	19,000 • 5	19,000 • 5	19,000 • 5
Coefficient of Thermal Expansion (ppm/°C) In-Plane • Through-Plane	-0.4 • 27	-0.4 • 27	-0.4 • 27	-0.4 • 27
Operating Temperature (°C)	-40 to +400	-40 to +400	-40 to +400	-40 to +400
UL Flammability Rating	94V-0	94V-0	94V-0	94V-0
RoHS Compliant	Yes	Yes	Yes	Yes
Lead / Halogen-Free	Yes	Yes	Yes	Yes

Notes:

- [1] Properties listed are typical and cannot be used as acceptance or rejection criteria. Product characteristics exclude coatings and adhesives.
- [2] Thickness tolerance on natural graphite products up to and including 0.127mm nominal thickness: ±0.013mm; thickness tolerance on material nominal thickness greater than 0.127mm: ±0.025mm.
- [3] In-plane thermal conductivity determined by 'Neograf Standard Method for Determination of Thermal Conductivity'; through-plane thermal conductivity determined using ASTM D5470 Modified method.
- [4] Specific Heat determined by Quasi-Isothermal Modulated Differential Scanning Calorimetry Method.

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