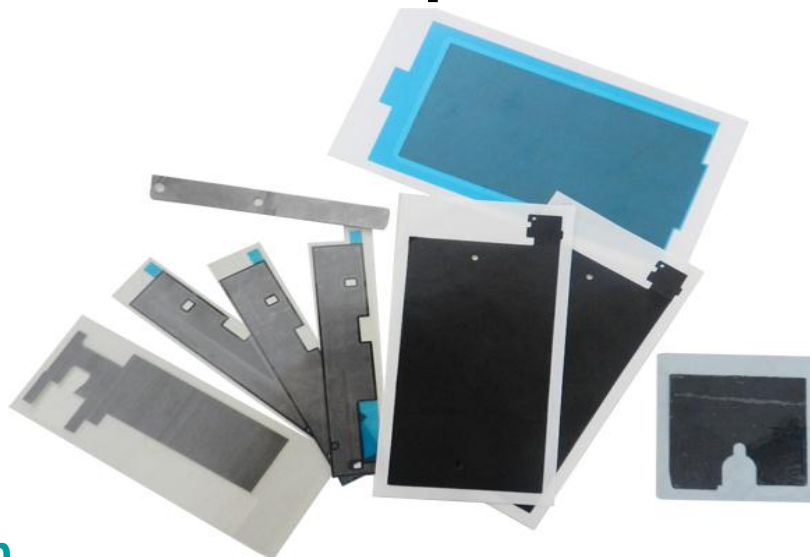




# VANOC Synthetic Graphite Heat Spreader Film



## Product Description

Jones VANOC synthetic graphite film is an extremely light and flexible material synthesized from polymer precursor by a high temperature heat treatment process. Derived from the crystal structure of graphite, the synthetic graphite features an anisotropic and overall high thermal conductance. It possesses unique functions such as eliminating hot spots, shielding components and reducing skin temperature of electronic devices. It is an ideal heat spreader for thermal management in limited space. It can also function as a thermal interface material for applications requiring low contact resistance and high thermal conductivity.

V100 series and V200 Series of Jones VANOC synthetic graphite film are designed for use as heat spreader. Comparing to conventional copper or aluminum heat spreader, the synthetic graphite films have a much higher in-plane thermal conductivity and a much lower density. The films are supplied in sheet or die-cut form and can be laminated with plastics, foams and adhesives.

## Features and Benefits

- Anisotropic and over all high thermal conductivity
- High thermally stability
- Lightweight
- Flexible and conformable
- RoHS compliant

## Typical Applications

- Smart phone
- Notebook
- Ultrabook
- Tablet
- Other consumer electronics
- Optical communication equipments

## Technical Data

CHARACTERISTICS	SPECIFICATIONS					TEST METHOD
	V100 Series		V200 Series			
	21-690-0013	21-690-0017	21-670-0025	21-670-0032	21-670-0040	
Color	Dark Grey	Dark Grey	Dark Grey	Dark Grey	Dark Grey	Visual
Thickness (mm)	0.013	0.017	0.025	0.032	0.040	ASTM D374
Thickness Tolerance (mm)	0.005	0.005	0.005	0.005	0.010	
Density (g/cm <sup>3</sup> )	2.2	2.2	1.9	1.95	1.75	ASTM D2638 Modified
Continuous Working Temperature (°C)	-55~400					
<b>Thermal</b>						
Thermal Conductivity (W/m-K) Thru-thickness	about 15	about 15	about 15	about 15	about 15	ASTM D5470
Thermal Conductivity (W/m-K) In-plane	1800	1700	1500	1300	1200	Angstrom Method
<b>Electrical</b>						
Electrical Conductivity( S/m)	2X10 <sup>6</sup>	2X10 <sup>6</sup>	2X10 <sup>6</sup>		2X10 <sup>6</sup>	ASTM C611
<b>Mechanical</b>						
Repeat Bending@ 180°, R5 (cycle)	10000	10000	10000		10000	

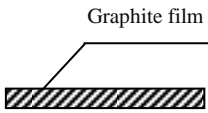
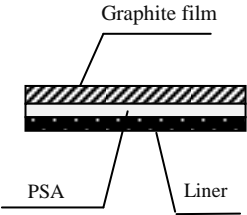
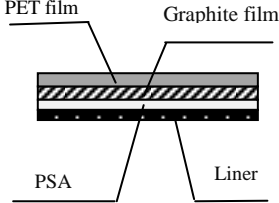
## Ordering Information

**21-6XX-XXXX-XXXX**

Product code Thickness Index Dimension

0013	0.013 mm
0017	0.017 mm
0025	0.025 mm
0032	0.032 mm
0040	0.040 mm

## Product Constructions

TYPE	GRAPHITE FILM ONLY	ADHESIVE TYPE	INSULATION & ADHESIVE TYPE
<b>Part Number</b>	21-6XX-XXXX-XXXX	21-6XXA-XXXX-XXXX	21-6XXB-XXXX-XXXX
<b>Construction</b>			
<b>Features</b>	<ul style="list-style-type: none"> <li>• High thermal conductivity</li> <li>• High working temperature</li> <li>• Electrically conductive</li> </ul>	<ul style="list-style-type: none"> <li>• With adhesive on one side to provide adhesion and insulation</li> <li>• Easy to apply to working surface</li> <li>• Withstand Voltage: 1 kV</li> </ul>	<ul style="list-style-type: none"> <li>• With PET film on one side to provide insulation and protection</li> <li>• With adhesive on the other side to provide adhesion and insulation</li> <li>• Easy to apply to working surface</li> <li>• Withstand Voltage: 4 kV</li> <li>• High heat resistance version (with PI, PEEK film) available upon request</li> </ul>
<b>Working Temperature</b>	400 °C	100 °C	100 °C
<b>Standard Size</b>	220mm X 320mm	220mm X 320mm	220mm X 320mm

## Contact Information

JONES TECH PLC

ADD: 3 DongHuanZhong Road, Beijing Economical & Technological Development Area

Beijing 100176 China

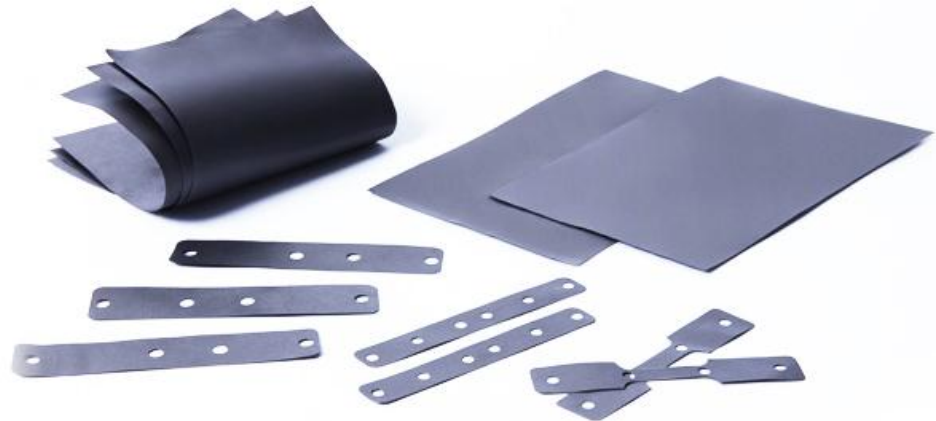
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# VANOC Synthetic Graphite Heat Spreader Film



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V-100 series and V200 Series of Jones VANOC synthetic graphite film are designed for use as heat spreader. Comparing to conventional copper or aluminum heat spreader, the synthetic graphite films have a much higher in-plane thermal conductivity and a much lower density. The films are supplied in sheet or die-cut form and can be laminated with plastics, foams and adhesives.

## Features and Benefits

- Anisotropic and over all high thermal conductivity
- High thermally stability
- Lightweight
- Flexible and conformable
- RoHS compliant

## Typical Applications

- Smart phone
- Notebook
- Ultrabook
- Tablet
- Other consumer electronics
- Optical communication equipments

## Technical Data

CHARACTERISTICS	SPECIFICATIONS				TEST METHOD
	V300 Series				
	21-660-0070	21-650-0100	21-655-0150	21-655-0200	
Color	Dark Grey				Visual
Thickness (mm)	0.07	0.10	0.15	0.20	ASTM D374
Thickness Tolerance (mm)	0.01	0.01	0.02	0.02	
Density (g/cm <sup>3</sup> )	0.85	0.75	0.65	0.55	ASTM D2638 Modified
Continuous Working Temperature (°C)	-55~400				
<b>Thermal</b>					
Thermal Conductivity (W/m-K) Thru-thickness	20	16	12	10	ASTM D5470
Thermal Conductivity (W/m-K) In-plane	700	650	550	450	Angstrom Method
Thermal Resistance(in <sup>2</sup> °C/W) @20psi	0.063	0.092	0.113	0.131	ASTM D5470
<b>Electrical</b>					
Electrical Conductivity( S/m)	0.96X10 <sup>6</sup>				ASTM C611
<b>Mechanical</b>					
Repeat Bending@180°, R5 (cycle)	10000				

## Ordering Information

**21-6XX-XXXX-XXXX**

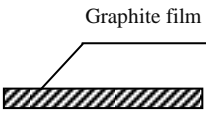
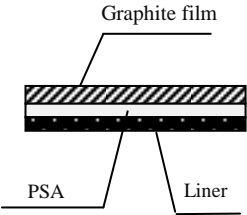
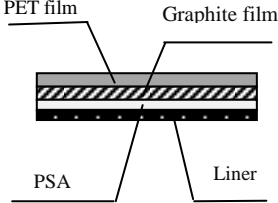
Product code ————

Thickness Index

Dimension

0070	0.07 mm
0100	0.1 mm
0150	0.15 mm
0200	0.2 mm

## Product Constructions

TYPE	GRAPHITE FILM ONLY	ADHESIVE TYPE	INSULATION & ADHESIVE TYPE
<b>Part Number</b>	21-6XX-XXXX-XXXX	21-6XXA-XXXX-XXXX	21-6XXB-XXXX-XXXX
<b>Construction</b>			
<b>Features</b>	<ul style="list-style-type: none"> <li>• High thermal conductivity</li> <li>• High working temperature</li> <li>• Electrically conductive</li> </ul>	<ul style="list-style-type: none"> <li>• With adhesive on one side to provide adhesion and insulation</li> <li>• Easy to apply to working surface</li> <li>• Withstand Voltage: 1 kV</li> </ul>	<ul style="list-style-type: none"> <li>• With PET film on one side to provide insulation and protection</li> <li>• With adhesive on the other side to provide adhesion and insulation</li> <li>• Easy to apply to working surface</li> <li>• Withstand Voltage: 4 kV</li> <li>• High heat resistance version (with PI, PEEK film) available upon request</li> </ul>
<b>Working Temperature</b>	400 °C	100 °C	100 °C
<b>Standard Size</b>	220mm X 320mm 210mm X160 mm	220mm X 320mm 210mm X160 mm	220mm X 320mm 210mm X160 mm

## Contact Information

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