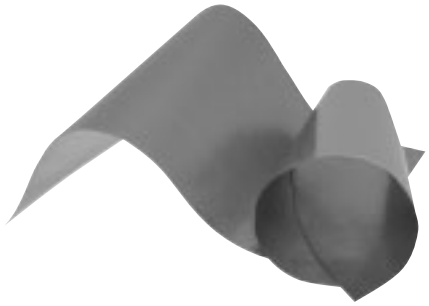
"PGS" Graphite Sheets

Type: **EYG**



PGS (Pyrolytic Graphite Sheet) is a thermal interface material which is very thin, synthetically made, has high thermal conductivity, and is made from a higly oriented graphite polymer film. It is ideal for providing thermal management/heat-sinking in limited spaces or to provide supplemental heat-sinking in addition to conventional means. This material is flexible and can be cut into customizable shapes.

■ Features

- Excellent thermal conductivity (2 to 4 times as high as copper, 3 to 6 time as high as aluminum)
- Lightweight: Specific gravity : 0.85 to 2.1 g/cm^3 (1/4 to 1/10 of copper, 1/1.3 to 1/3 of aluminum in density)
- Flexible and easy to be cut or trimmed. (withstands repeated bending)
- Low thermal resistance
- RoHS compliant

■ Recommended applications

- Cellular phone, DVC, DSC, PC and peripherals, pickup
- Semiconductor manufacturing equipment (Sputtering, Dry etching, Steppers)
- Optical communications equipment

■ Handling Precautions (See Page 182)

■ Explanation of Part Numbers

1	2	3	4	5	6	7	8	9	10	11	12
E	Y	G	S	1	8	2	3	1	0		
Product Code				Dimension X (Short)		Dimension Y (Long)				Suffix	

Style	
S	PGS only
A	Taping
C	Coating
M	Other materials laminated

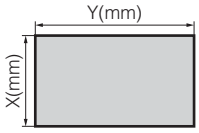
Thickness (mm)	
10	0.1
07	0.07
03	0.025

✻Custom product is suffix.

■ Dimensions in mm (not to scale)

Dimension of representative

Part No.	Dimension X (Short)✻	Dimension Y (Long)✻	Thickness (mm)
EYGS1823 10 07	180±5 mm	230±5 mm	0.10±0.03, 0.07±0.015
EYGS1218 10 07 03	115±5 mm	180±5 mm	0.10±0.03, 0.07±0.015, 0.025±0.010
EYGS0912 10 07 03	90±5 mm	115±5 mm	0.10±0.03, 0.07±0.015, 0.025±0.010



✻Please contact us for other dimensions other than those above.

■ Characteristics

Characteristics		Specification	Specification	Specification
Thickness		0.10 ± 0.03 mm	0.07 ± 0.015 mm	0.025 ± 0.010 mm
Density		0.85 g/cm^3	1.1 g/cm^3	2.1 g/cm^3
Thermal conductivity	a-b plane	600 to 800 W/(m·K)	750 to 950 W/(m·K)	1500 to 1700 W/(m·K)
Electrical conductivity		10000 S/cm	10000 S/cm	20000 S/cm
Extensional strength		19.6 MPa	22.0 MPa	30.0 MPa
Expansion coefficient	a-b plane	9.3 × 10^{-7} 1/K	9.3 × 10^{-7} 1/K	9.3 × 10^{-7} 1/K
	c axis	3.2 × 10^{-5} 1/K	3.2 × 10^{-5} 1/K	3.2 × 10^{-5} 1/K
Heat resistance		400 °C		
Bending(angle 180,R5)		10000 cycles		

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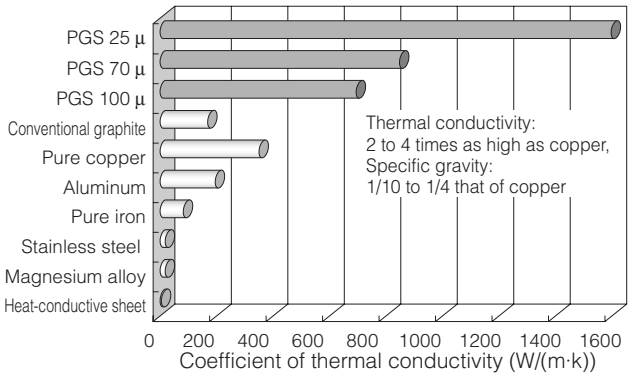
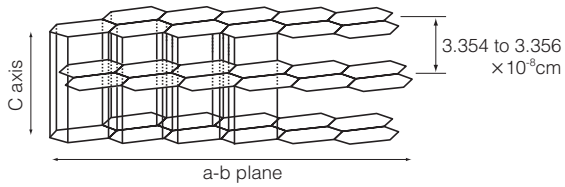
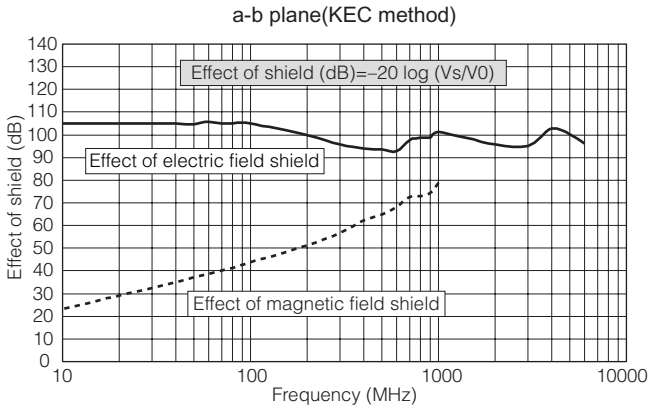
■ Thermal conductivity of PGS compared to other



■ Layered structure of PGS



■ Electric field shield performance



■ Rating and Characteristics

● Thickness : PGS 0.1 mm type

Type	①PGS only	Standard type				Special type				
		②A–P Insulating film type	②A–S Thin insulating film type	③A–A Strong adhesion type	④A–M Thin adhesion type	⑤A–K High heat-resistance insulating film type	⑥A–T High heat-resistance adhesion type	⑦C–C Low thermal resistance type	⑧M–SS Multilayered type (One-side)	⑨M–SW Multilayered type (Double-side)
Structure	PGS	PGS / Polyester tape 0.03 mm	PGS / Polyester tape 0.01 mm	PGS / Acrylic adhesive tape 0.03 mm / Separating paper	PGS / Acrylic adhesive tape 0.01 mm / Separating paper	PGS / Polyimide tape 0.03 mm	PGS / Separating paper / Heat-resistance acrylic adhesive tape 0.03 mm	PGS / Acrylic adhesion 0.01 mm / Separating paper	PGS / Silicon 0.1 mm	PGS / Silicon 0.1 mm
Thickness	0.10 mm	0.13 mm	0.11 mm	0.13 mm	0.11 mm	0.13 mm	0.13 mm	0.11 mm	0.20 mm	0.30 mm
Thermal conductivity	600 to 800 W/(m·K)	500 to 600 W/(m·K)	550 to 650 W/(m·K)	500 to 600 W/(m·K)	550 to 650 W/(m·K)	500 to 600 W/(m·K)	500 to 600 W/(m·K)	550 to 650 W/(m·K)	250 to 350 W/(m·K)	200 to 300 W/(m·K)
Withstand temperature	400 °C	100 °C	100 °C	100 °C	100 °C	180 °C	150 °C	85 °C	180 °C	180 °C
Maximam size	180×230 mm	115×180 mm	115×180 mm	115×180 mm	115×180 mm	115×180 mm	115×180 mm	115×180 mm	115×180 mm	115×180 mm
Part No.	EYGS182310	EYGA121810P	EYGA121810S	EYGA121810A	EYGA121810M	EYGA121810K	EYGA121810T	EYGA121810C	EYGM121810SS	EYGM121810SW
Features	· Usable up to 400 °C · Low Thermal resistance · Electrically Conductive	· High mechanical strength · Insulation	· High mechanical strength · Insulation	· Insulation · Strong adhesion	· Insulation · Thin adhesion	· High mechanical strength · Insulation	· High heat-resistance	· Low thermal resistance	· Cushioning properties	· Cushioning properties

✻ Please contact our engineering section or factory about to special applications.

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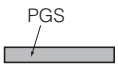
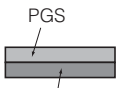
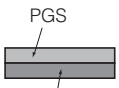
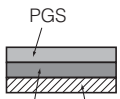
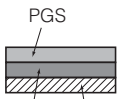
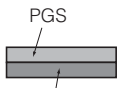
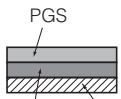
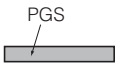
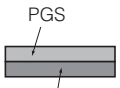
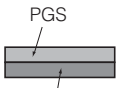
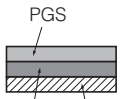
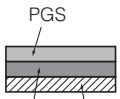
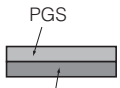
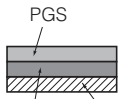
■ Rating and Characteristics

● Thickness : PGS 0.07 mm type

Type	①PGS only	Standard type				Special type	
		②A–P Insulating film type	②A–S Thin insulating film type	③A–A Strong adhesion type	④A–M Thin adhesion type	⑤A–K High heat-resistance insulating film type	⑥A–T High heat-resistance adhesion type
Structure							
Thickness	0.07 mm	0.10 mm	0.08 mm	0.10 mm	0.08 mm	0.10 mm	0.10 mm
Thermal conductivity	750 to 950 W/(m·K)	550 to 700 W/(m·K)	650 to 800 W/(m·K)	550 to 700 W/(m·K)	650 to 800 W/(m·K)	550 to 700 W/(m·K)	550 to 700 W/(m·K)
Withstand temperature	400 °C	100 °C	100 °C	100 °C	100 °C	180 °C	150 °C
Maximam size	180×230 mm	115×180 mm	115×180 mm	115×180 mm	115×180 mm	115×180 mm	115×180 mm
Part No.	EYGS182307	EYGA121807P	EYGA121807S	EYGA121807A	EYGA121807M	EYGA121807K	EYGA121807T
Features	· Usable up to 400 °C · Low Thermal resistance · Electrically Conductive	· High mechanical strength · Insulation	· High mechanical strength · Insulation	· Insulation · Strong adhesion	· Insulation · Thin adhesion	· High mechanical strength · Insulation	· High heat-resistance

✻ Please contact our engineering section or factory about to special applications.

● Thickness : PGS 0.025 mm type

Type	①PGS only	Standard type				Special type	
		②A–P Insulating film type	②A–S Thin insulating film type	③A–A Strong adhesion type	④A–M Thin adhesion type	⑤A–K High heat-resistance insulating film type	⑥A–T High heat-resistance adhesion type
Structure							
Thickness	0.025 mm	0.055 mm	0.035 mm	0.055 mm	0.035 mm	0.055 mm	0.055 mm
Thermal conductivity	1500 to 1700 W/(m·K)	650 to 800 W/(m·K)	1100 to 1250 W/(m·K)	650 to 800 W/(m·K)	1100 to 1250 W/(m·K)	650 to 800 W/(m·K)	650 to 800 W/(m·K)
Withstand temperature	400 °C	100 °C	100 °C	100 °C	100 °C	180 °C	150 °C
Maximam size	115×180 mm	115×180 mm	115×180 mm	115×180 mm	115×180 mm	115×180 mm	115×180 mm
Part No.	EYGS121803	EYGA121803P	EYGA121803S	EYGA121803A	EYGA121803M	EYGA121803K	EYGA121803T
Features	· Usable up to 400 °C · Low Thermal resistance · Electrically Conductive	· High mechanical strength · Insulation	· High mechanical strength · Insulation	· Insulation · Strong adhesion	· Insulation · Thin adhesion	· High mechanical strength · Insulation	· High heat-resistance

✻ Please contact our engineering section or factory about to special applications.

Minimum order

Part Numbers	Size	Minimum order
EYGS182310	180×230 mm	10
EYGS182307	180×230 mm	10
EYGS1218□□	115×180 mm	10
EYGS0912□□	90×115 mm	20
EYGA1218□□A	115×180 mm	10
EYGA1218□□S	115×180 mm	10
EYGA1218□□M	115×180 mm	10
EYGA1218□□T	115×180 mm	10
EYGA1218□□P	115×180 mm	10
EYGA1218□□K	115×180 mm	10
EYGC121810C	115×180 mm	10
EYGM121810SS	115×180 mm	10
EYGM121810SW	115×180 mm	10
EYGA0912□□A	90×115 mm	20
EYGA0912□□S	90×115 mm	20
EYGA0912□□M	90×115 mm	20
EYGA0912□□T	90×115 mm	20
EYGA0912□□P	90×115 mm	20
EYGA0912□□K	90×115 mm	20
EYGC091210C	90×115 mm	20
EYGM091210SS	90×115 mm	20
EYGM091210SW	90×115 mm	20

✻ Please consult if the quantity of orders is little.