To : DIGI-KEY CORPORATION

Issue No. : 151EYG101014008

Date of Issue : 14.Oct.2010

Classification : ■ New Changed

SPECIFICATION SHEET

Product Description	:	PGS Graphite Sheet
Product Part Number	:	EYGA121807V

Customers Part Number	:	
Country of Origin	:	Japan
Applications	:	

Circuit Components Business Unit
Panasonic Electronic Devices Co.,Ltd.

1037-2 Kamiosatsu, Chitose City, Hokkaido 066-8502 Japan

Engineering Section
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Panasonic

CLASSIFICATION	SPECIFICATION SHEET	No. 151S- EYGA121807V
SUBJECT	Part Number	PAGE 1 of 4
PGS Graphite Sheet	EYGA121807V	DATE 14.Oct.2010

1.Scope

This specification applies to Panasonic's PGS Graphite Sheet

2.Explanation of Part Number

Subject : PGS Graphite Sheet

Part Number : EYGA121807V

E Y G A 1 2 1 8 0 7 V

- E Y G: Product Code
- A: Form
- 1 2: Shorter Side (cm)
- 1 8: Longer Side (cm)
- 0 7: Thickness
- V: Design Number

Code	Form
S	Sheet
M	Multi-layered
A	Tape attached

Code	Thickness
10	0.1mm
07	0.07mm
03	0.025mm
02	0.017mm

3.Operating and storage Temperature Range

Operating Temperature Range : -20 to 150 cels.

Storage Temperature Range : -20 to 80 cels.

4.Performance

4-1.Appearance

Contents	Performance	Test Method
4-1-1 Appearance	There shall be no mechanical scars,tears,hollows which affect the performance	Compared with limit sample
4-1-2 Shape and Dimension	Shown in the figure Page 4 of 4	--

4-2.Initial Performance

Contents	Performance	Test Method
4-2-1 Thermal Diffusivity (PGS)	More than 5.0 cm^2/sec	Test piece;30mm×5mm sheet Testing equipment;"Laser Pit" Model PIT-IM type (The Manufacturer of the Equipment is SINKU-RIKO)

4-3. Reliability Tests

Contents	Performance	Test Method
4-3-1 Damp Heat Test	Shall meet the performance prescribed clause 4-1 and 4-2-1	Test temperature : 85±3 cels. Relative humidity : 85±5 %RH Test period : 1000 hours

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APPROVAL	CHECK	DESIGN
Funaba	Kubo	Kawamura

<table>
<tr><td>4-3-2
Temperature cycle</td><td>Shall meet the performance prescribed clause 4-1 and 4-2-1</td><td>Condition the specimen to each temperature from 1 to 4 for the period shown in the table below.
Regarding this conditions as one cycle, perform 1000 cycles continuously.
<table>
<tr><th>step</th><th>temperature</th><th>period(min)</th></tr>
<tr><td>1</td><td>-20 cels.</td><td>10</td></tr>
<tr><td>2</td><td>Room Temp.</td><td>3 max.</td></tr>
<tr><td>3</td><td>+105 cels.</td><td>10</td></tr>
<tr><td>4</td><td>Room Temp.</td><td>3 max.</td></tr>
</table>
</td></tr>
<tr><td>4-3-3
High Temperature Resistance</td><td>Shall meet the performance prescribed clause 4-1 and 4-2-1</td><td>Test temperature : 150 cels.
Test period : 1000 hours</td></tr>
<tr><td>4-3-4
Low Temperature Resistance</td><td>Shall meet the performance prescribed clause 4-1 and 4-2-1</td><td>Test temperature : -20 cels.
Test period : 1000 hours</td></tr>
</table>

5. Packaging

10 sheets of PGS Graphite Sheets shall be put in a plastic bag and the plastic bag shall be sealed. Maximum 20 plastic bags shall be put in an inner carton and a tag on goods specifying Product Name, Part No., Lot No, Quantity shall be put on the top face of the inner carton.
(Max 200 pcs. per inner carton)

Maximum 5 inner cartons shall be put in an outer packaging box and a label specifying Product Name, Part No., Lot No, Quantity (Max 1,000 pcs.), County of Origin in English shall be put on the side of the outer packaging box.

6. Handling Precautions

6.1 ⚠ Safety Precaution

6.1.1 The PGS shall be used within the specified operating temperature range.

6.1.2 The PGS is soft, do not rub or touch it with rough materials to avoid scratching it.

6.1.3 Lines or folds in the PGS may affect thermal conductivity.

6.1.4 The PGS shall not be used with acid.
The PGS shall not be used in contact with a soldering iron at 400℃ or more.

6.1.5 The PGS shall not be exposed to salt water or direct sunlight during use. The PGS shall not be used in corrosive gases (hydrogen sulfide, sulfurous acid, chlorine, ammonia etc.)

6.1.6 Our PGS has been developed for general industry application. Prior to using the PGS for special applications such as medical, aerospace and aircraft work please contact our engineering staff or the factory.

6.1.7 Never touch a PGS during use because it may be extremely hot.

Note:

6.2 Application notes

6.2.1 Use protective materials when handling and/or applying the PGS, do not use items with sharp edges as they might tear or puncture the PGS.

6.2.2 The PGS dose not work properly if overheated.

6.2.3 Thermal conductivity is dependant on the way it is used.
Test the adaptability of PGS to your application before use.

6.2.4 The PGS has conductivity. If required, the PGS should be provided insulation.

6.2.5 Punching Graphite sheets sends graphite powder; therefore, your check whether or not the **graphite powder fall harms devices is necessary.**

6.2.6 The PGS shall not be stored under severe conditions of salt water, direct sunlight or corrosive gases (hydrogen sulfide, sulfurous acid, chlorine, ammonia etc.).
The PGS shall not be stored near acid.

7.Substance of this product

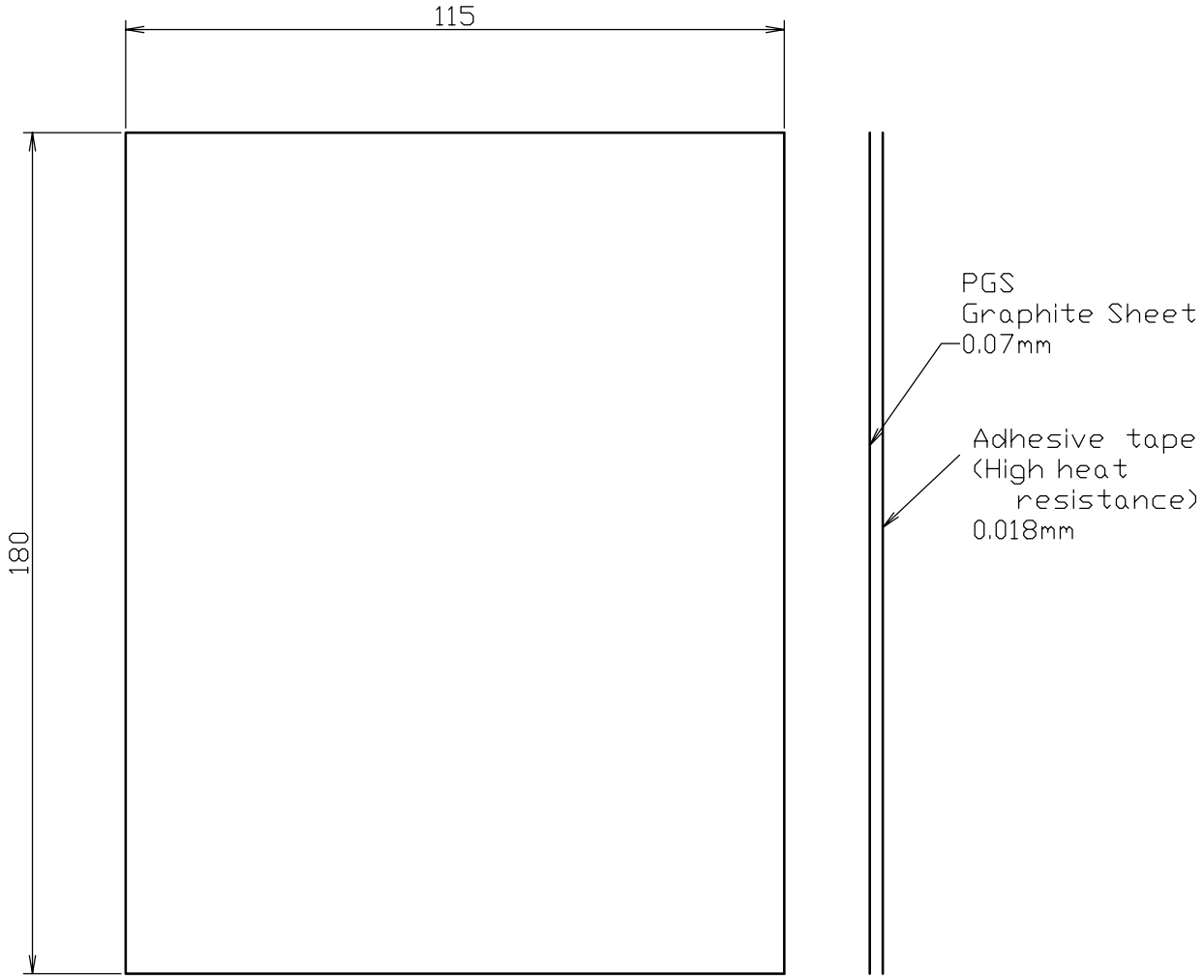
7-1 This product not been manufactured with any ozone depleting chemical controlled under the Montreal Protocol.

7-2 This product comply with RoHS(Restriction of the use of certain Hazardous Substance in electrical and electronic equipment) Directive(2002/95/EC).

7-3 All the materials used in this part are registered material under the Law Concerning the Examination and Regulation of Manufacture,etc.of Chemical Substance.

Note:

RevNo	Revision note	Date	Signature	Checked



Notes :

1. All dimensions are millimeters.
2. Materials ; PGS Graphite Sheet 0.07mm thick
3. Tolerance ; .X±3

Itemref	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference
②	1	Adhesive tape (0.018mm)	
①	1	PGS Graphite Sheet (0.07mm)	

Design	Check	Approval		Scale
N.KAWAMURA	K.KUBO	M.FUNABA		

CIRCUIT COMPONENTS BUSINESS UNIT PANASONIC ELECTRONIC DEVICES CO.,LTD	Name PGS Graphite Sheet	Type No. EYGA121807V
	Drawing No. 4-4 EYGA121807V	