		To: DIGI-KEY CORPORATION
Classification : ■ New □ Changed	Date of Issue : 25.Oct.2011	Issue No. : 151EYG111025742

PRODUCT SPECIFICATION FOR APPROVAL

Product Description : PGS Graphite Sheet
Product Part Number : EYGA121802DM

Customers Part Number:

Country of Origin : Japan

Applications :

Approval No :	%If you approve this specification, please fill in and sign the below and return 1copy to us.

Approval Date :

Excecuted by :

Excecuted by

Title

(signature)

. .

Dept.

Circuit Components Business Unit

Panasonic Electronic Devices Co., Ltd.

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

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Prepared by : Engineering Section

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Engineer

K.KUBO

Authorized by Signature

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t) : T.Kimura

Manager of Engineering

Panasonic

SUBJE HUAWEI CLASSIFICATION PGS Graphite Sheet SPECIFICATIONS Part Number **EYGA121802DM** No. 151S- EYGA121802DM PAGE 1 of 4 25.Oct.2011

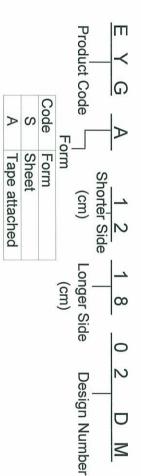
Scope

This specification applies to Panasonic's PGS Graphite Sheet

2. Explanation of Part Number

Subject **PGS Graphite Sheet**

Part Number: EYGA121802DM



3. Operating and storage Temperature Range

Operating Temperature Range: -20 to 100 cels.

Storage Temperature Range : -20 to 80 cels.

4.Performance

4-1.Appearance

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

4-2.Initial Performance

	Thermal Diffusivit	4-2-1	Contents
	~	M	
		More than 5.0 cm ² /sec	Performance
(The Manufacturer of the Equipment is SINKU-RIKO)	Testing equipment;"Laser Pit"	Test piece;30mm×5mm sheet	Test Method

4-3 Reliability Tests (PGS)

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

Panasonic Electronic Devices Co., Ltd. 1037-2 Kamiosatsu, Chitose City, Hokkaido Japan Circuit Components Business Unit

APPROVAL

CHECK DESIGN

4-3-2 Tempe										4-3-3	4-3-3 High T	4-3-3 High To Resista
rature cycle	ardio cyclo										emperature	emperature
Shall meet the performance prescribed clause 4-1 and 4-2-1	מומטו די מומ די מומ די מומ די די									Shall meet the performance	Shall meet the performance prescribed clause 4-1 and 4-2-1	Shall meet the performance prescribed clause 4-1 and 4-2-1 Shall meet the performance
Condition the specir temperature from 1	shown in the table b	Regarding this cond		perform 1000 cycles	perform 1000 cycles step temperatu	step temperatu 1 -20 cels	step temperatu 1 -20 cels Room Terr	step temperatu 1 -20 cels Room Terr 3 +105 ce	Step temperatu	step temperatu step temperatu 1 -20 cels 2 Room Tem 3 +105 ce 4 Room Ten Test temperature : '	step temperatu 1 -20 cels. 2 Room Tem 3 +105 ce 4 Room Tem Test temperature : 1 Test period : 1000 h	step temperatu 1 -20 cels 2 Room Tem 3 +105 ce 4 Room Tem Test temperature: 1 Test temperature: -
men to each to 4 for the perio	pelow.	ditions as one cycle,		s continuously.	s continuously. re period(min)	s continuously. ire period(min) 10	s continuously. Ire period(min) 10 np. 3 max.	s continuously. Ire period(min) 10 10 10 11 11 12 13 13 11 10	s continuously. Ire period(min) 10 np. 3 max. 10 10 10 3 max. 3 max.	s continuously. Ire period(min) 10 np. 3 max. ls. 10 np. 3 max. 100 cels.	s continuously. Ire period(min) 10 np. 3 max. 10 np. 3 max. 10 100 cels. 100 rels.	s continuously. Ire period(min) 10 np. 3 max. Is. 10 np. 3 max. 100 cels. 100 cels. 100 cels.
	mperature cycle	Shall meet the performance prescribed clause 4-1 and 4-2-1	Shall meet the performance Condition the specimen to the speci	Shall meet the performance Condition the specimen to 4 form the cycle prescribed clause 4-1 and 4-2-1 temperature from 1 to 4 form the table below. Regarding this conditions perform 1000 cycles continuous con	Shall meet the performance Condition the specimen to 4 femperature cycle prescribed clause 4-1 and 4-2-1 temperature from 1 to 4 femperature below. Regarding this conditions perform 1000 cycles contents from 1 to 4 femperature from 1 to 4 femper	Shall meet the performance Condition the specimen to 4 from 2 temperature from 1 to 4 from 5 shown in the table below. Regarding this conditions perform 1000 cycles continuous continuou	Shall meet the performance Condition the specimen to 4 f shown in the table below. Regarding this conditions perform 1000 cycles continuous co	Shall meet the performance Condition the specimen to 4 femperature cycle prescribed clause 4-1 and 4-2-1 temperature from 1 to 4 femperature from 1 to	Shall meet the performance Condition the specimen to 4 prescribed clause 4-1 and 4-2-1 temperature from 1 to 4 follows shown in the table below. Regarding this conditions perform 1000 cycles continuous temperature from 1 to 4 follows perform 1000 cycles continuous follows from 1000 cycles continuous follows follows from 1 follows follows follows follows follows follows from 1 follows fol	Shall meet the performance prescribed clause 4-1 and 4-2-1 temperature from 1 to 4 f shown in the table below. Regarding this conditions perform 1000 cycles contains temperature from 1 to 4 f shown in the table below. Regarding this conditions perform 1000 cycles contains temperature from 1 to 4 f shown in the table below. Regarding this conditions perform 1000 cycles contains from 1 to 4 f	Shall meet the performance prescribed clause 4-1 and 4-2-1 temperature from 1 to 4 f shown in the table below. Regarding this conditions perform 1000 cycles cont temperature perform 1000 cycles cont step temperature perform 1000 cycles cont temperature temperature perform 1000 cycles cont temperature temperature temperature temperature performance prescribed clause 4-1 and 4-2-1 Test temperature : 100 cycles cont temperature temper	Shall meet the performance prescribed clause 4-1 and 4-2-1 temperature from 1 to 4 f shown in the table below. Regarding this conditions perform 1000 cycles contisted temperature 100 cycles contisted 1 cells. 2 Room Temp. 3 +105 cels. 4 Room Temp. 1000 cycles contisted temperature 100 cycles contisted 1000 cycles contisted 1 cells. 2 Room Temp. 1000 cycles 1 cells. 1000 cycles 1

5 Packaging

Resistance

Part No., Lot No, Quantity shall be put on the top face of the inner carton. 10 sheets of PGS Graphite Sheets shall be put in a plastic bag and the plastic bag shall be sealed. Maximum 25 plastic bags shall be put in an inner carton and a tag on goods specifying Product Name,

(Max 250 pcs. per inner carton)

outer packaging box. Part No., Lot No, Quantity (Max 500 pcs.), County of Origin in English shall be put on the side of the Maximum 2 inner cartons shall be put in an outer packaging box and a label specifying Product Name

Handling Precautions

- <u>ი</u> ი 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°C 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

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6.2 Application notes

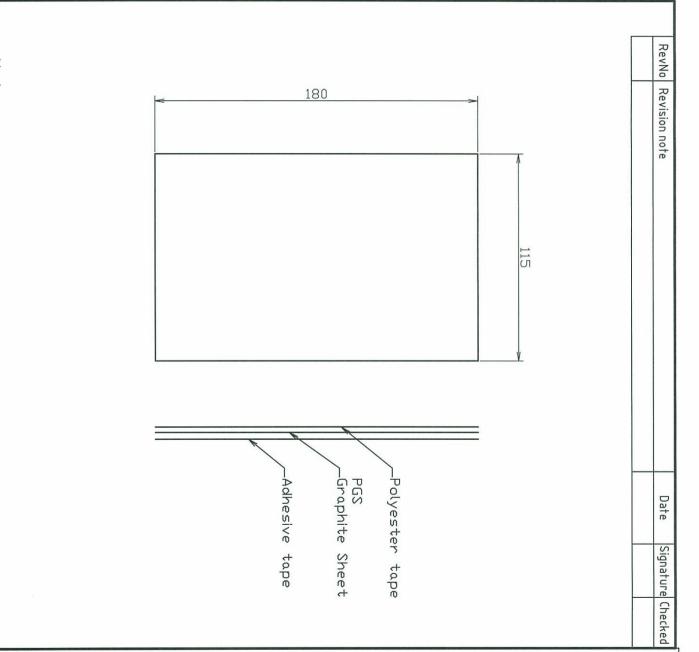
- 6.2.1 Use protective materials when handling and/or applying the PGS, do not use items with sharp edges as they might tear or puncture the PGS.
- 6.2.2 The PGS dose not work properly if overheated.
- 6.2.3 Thermal conductivity is dependant on the way it is used Test the adaptability of PGS to your 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

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- Notes:
 1. All dimensions are millimeters.
 2. Materials , PGS Graphite Sheet
 3. Tolerance , X±3

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				K.KUBO		1	1	1	
CIRCUIT COMPONENTS BUSINESS UNIT PANASONIC ELECTRONIC DEVICES CO.,LTD			Check K.KUBO	Itemref Quantity Title/Name, designation, material, dimension etc	Adhesive tape (0.01mm)	PGS Graphite Sheet (0.017mm)	Polyester tape (0.01mm)(Black)		
151S-EY	Drawing No.	PGS Graphite Sheet	Name	Approval T.KIMURA	aterial, dimension etc	1,01mm)	eet (0.017mm)	(0,01mm)(Black)	
151S-EYGA121802DM		neet EYGA121802DM		Type No. Sheet EYGA1218		Article No./Reference			
		MUSO		Scale 1 : 2	Ф				