EQM08-4KC-F5AS102-00

Preliminary

Messrs. _____

Shock Sensor Specification

Part No. : PSLE382E-R44

RoHS Compliant

Halogen-Free Compliant

16.Dec. 2010

Approved by	Kazuki Shimizu
Checked by	Yasuhiro Nakai
Issued by	Akira Oikawa

KYOCERA CORPORATION

CIRCUIT COMPONENT DIVISION
PIZ SECTION

EQM08-4KC-F5AS102-00

Modification Table

No.	Date	Change	Approved	Checked	Issued
00	16.Dec 2010	The first edition	Kazuki Shimizu	Yasuhiro Nakai	Akira Oikawa

CIRCUIT COMPONENT DIVISION
PIZ SECTION

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1.Scope

This specification shall cover the characteristics of the shock sensor.

2.Kyocera's Type Name

PSLE382E-R44

3.Customer's Type Name

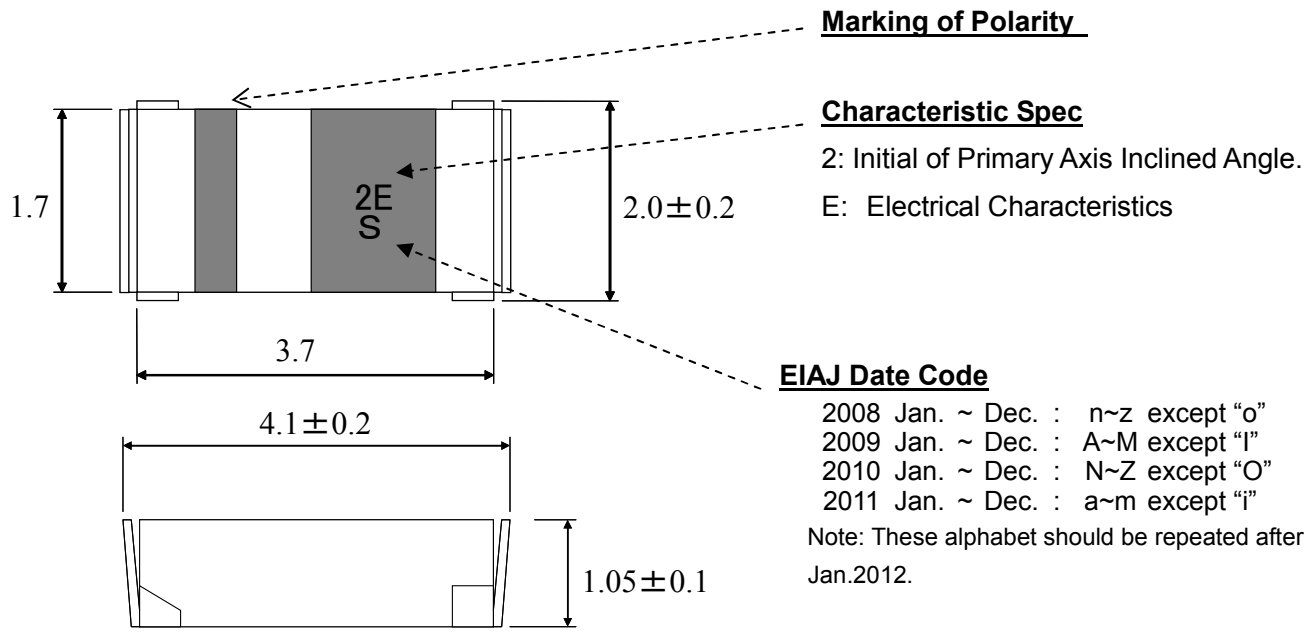
4.Electrical Characteristics

Items	Specifications
4-1 Primary Axis Inclined Angle	25± 3degree
4-2 Capacitance	340 ± 160pF, at 1Vrms, 1kHz
4-3 Charge Sensitivity	0.09 ± 0.035 pC/G , under vibration at 200Hz, 2G
4-4 Insulation Resistance	0.5Gohm minimum, at 10VDC after 1min.
4-5 Resonant Frequency	44 ± 9kHz
4-6 Non-linearity	5% maximum, under vibration at 25G
(Referense only) Voltage Sensitivity	0.265mV/G ,under vibration at 200Hz, 2G

<Measurement Condition>

The reference temperature shall be 25 ºC ±5ºC.

5.Dimensions and Marking



Unit:mm

Fig.1

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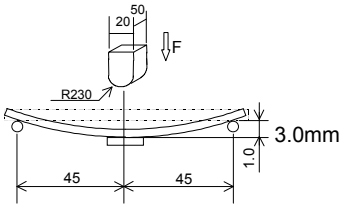
6.Environmental Characteristics

Items	Conditions
6-1.High Temperature Storage Test	Keep in a chamber at 85 ±2°C for 1000 +12/-0 hours, and then keep at room temperature for 1 hour. The characteristics of shock sensor shall meet the specifications.
6-2.Low Temperature Storage Test	Keep in a chamber at –40 ±2°C for 1000 +12/-0 hours, and then keep at room temperature for 1 hour. The characteristics of shock sensor shall meet the specifications.
6-3.Moisture Resistance Test	Keep in a chamber at 90 to 95 % R.H. and 60 ± 2°C for 500 +12/-0 hours, and then keep at room temperature for 1 hour. The characteristics of shock sensor shall meet the specifications.
6-4.Temperature Cycling Test	Apply 100 thermal cycles with the following temperatures: - upper temperature 85°C for 20 minutes and transfer time 10 minutes - lower temperature -40°C for 20 minutes and transfer time 10 minutes - total cycle time is 1hour and then left at room temperature for 1 hour. The characteristics of shock sensor shall meet the specifications.
6-5.Mechanical Shock Test	After applying the acceleration at 29430m/sec^2 {3000G} in each of X, Y and Z axis (each 3 times). The characteristics of shock sensor shall meet the specifications.
6-6.Solderability Test	At first, being soaked in the Methanol solution containing Rosin for 5 seconds and then being dipped in a bath of Pb/Sn solder at 250 ± 5°C for 4 ± 0.5 seconds. The surface of the electrode terminal shall be soldered more than 95%.
6-7.Resistance to Soldering Heat Test	Pre-heat temperature is 150 to 180°C for 1 minute. High temperature is 250 ± 5°C, over 200°C for 20 seconds max.(2times). Then keep at room temperature for 1 hour. The characteristics of shock sensor shall meet the specifications.
6-8.Board Flex Test	After soldered on the circuit board specified as below, then the load which cause 3 mm bend to the board is applied. The characteristics of shock sensor shall meet the specifications. The shock sensor cause no defect in the appearance. (Circuit Board: FR4, 100 x 40 x 1.6) 

<Measurement Condition>

The reference temperature shall be 25°C±5°C.

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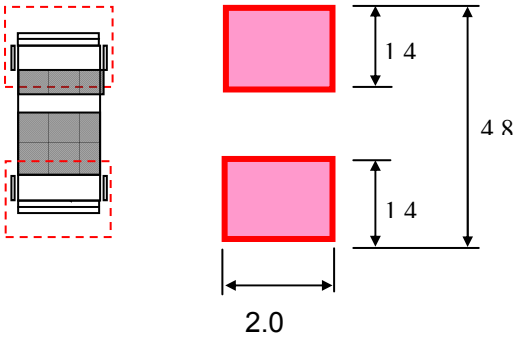
7. Recommended Land pattern



Unit: (mm)

Fig.2 Recommended Land pattern

8. Recommended Convection Reflow profile

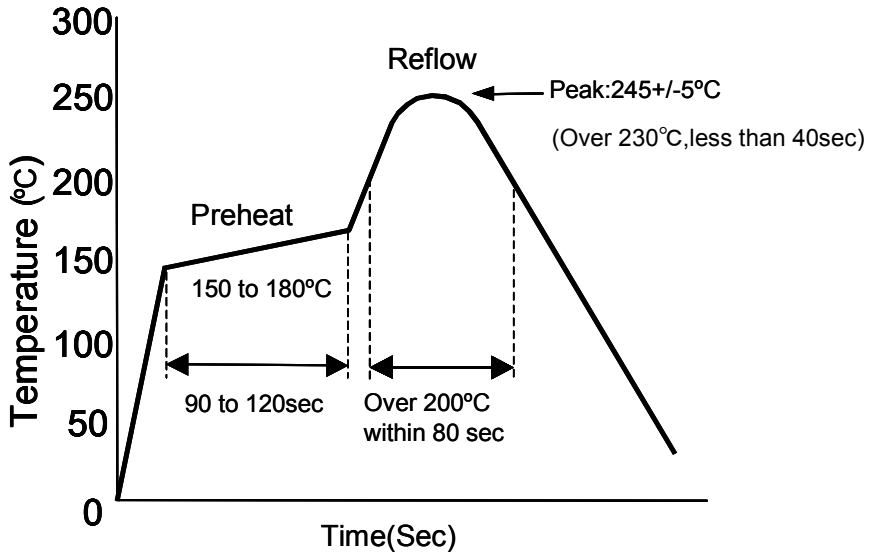
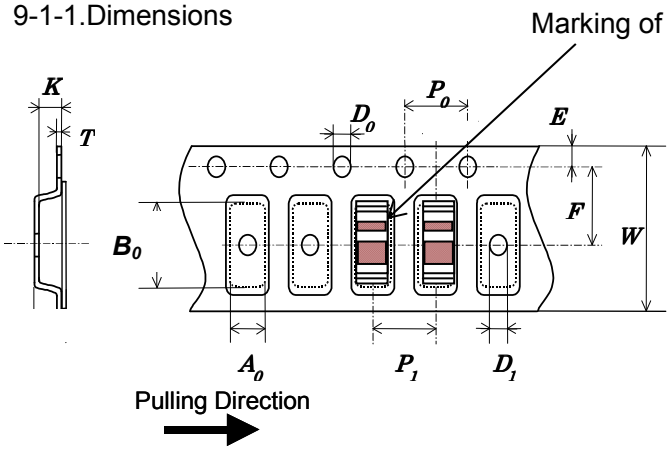


Fig.3 Recommended Convection Reflow profile

9. Taping Specifications

9-1.CarrierTape

9-1-1.Dimensions



Unit: (mm)

Symbol	Dimensions	Symbol	Dimensions
A_0	2.25 ± 0.1	P_0	4.0 ± 0.1
B_0	4.4 ± 0.1	P_1	4.0 ± 0.1
W	12.0 +0.3/-0.1	D_0	1.5 +0.1/-0
E	1.75 ± 0.1	K	1.25± 0.1
F	5.5± 0.05	T	0.3 ± 0.05

Fig.4 Emboss Carrier Tape Dimensions

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9-2. Taping

9-2-1. Taping Quantity

One reel of the carrier tape shall pack 3000 pcs. Shock sensor shall be contained in pocket continuously.

9-2-2. Dimensions

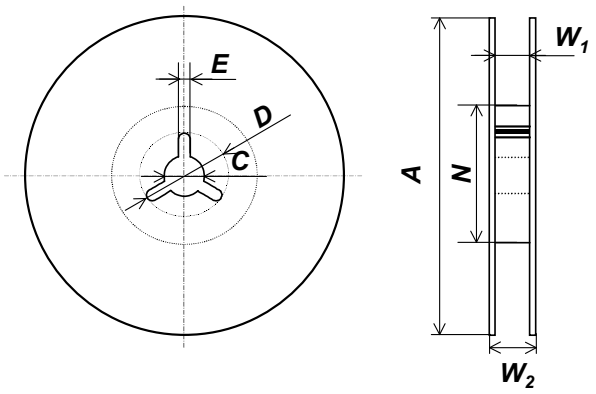


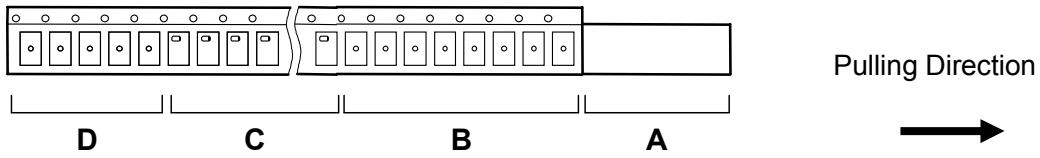
Fig.5 Reel

Unit: (mm)

Symbol	*A*	*N*	W_1	W_2
Dimensions	180±5.0	60min.	12.5 +2.0/-0.0	20.5 max.
Symbol	*C*	*D*	*E*	
Dimensions	13.0±0.2	21.0±0.8	2.0±0.5	

9-2-3. Leader and Blank Pocket

Package shall consist of leader, blank pocket and loaded pocket as follows. (fig.6)



A) Leader

B) Blank Pocket (160mm Min.)

A+B: 400mm to 560mm

C) Load Pocket

D) Blank Pocket (40 to 190mm)

Fig.6 Packing Method

Peeling load of top tape shall be 0.1N {10gf} to 0.7N {70gf} from Carrier Tape.

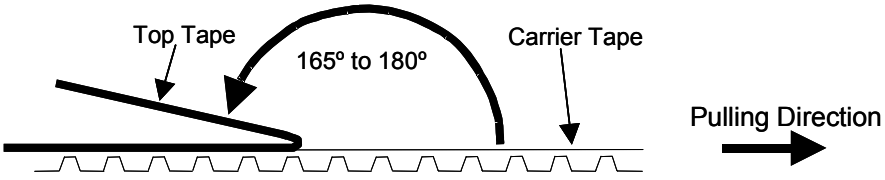


Fig.7 Peeling Strength

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9-2-4. Reel label

A reel label shall be contained as below: (Based on EIAJ C-3 format)

A) Customer P/N
B) Lot No.
C) Quantity
D) Shipping date
E) Vender Name

9-2-5. Exterior Package label

Shock sensor shall be packed properly to avoid defect in transportation and the marking of exterior package shall be contained as below:

A) Name of Customer
B) P/O No.
C) Customer P/N
D) Lot No.
E) Quantity
F) Shipping Date
G) Vender Name

10. The agreement of this specifications

Should any part of the content of this specification become questionable, it shall be settled by mutual deliberations.

11. Remarks on Usage

A) This part can use only reflow soldering.
B) Not washable
C) Maximum temperature is 280 degree.

12.RoHS Compliant

A) Sensor Case: LCP(liquid crystal polymer)
B) Terminal: Bronze with phosphate (thickness 100 um)
Plating: Cu(1-2um), Ag(1-3 um)
C) Elememt: Piezo Ceramic, contains lead-oxide, however, piezo-electronic devices are exempted from RoHS compliant requirement of article 4(1).
(Refer to Annex, Section 7)

All materials meet to RoHS Compliant.

13.Halogen-Free Compliant

A) Bromine（Br） ＜900ppm（0.09%）
B) Chlorine（Cl） ＜900ppm（0.09%）
C)Total concentration of Chlorine（Cl）＋Bromine（Br） ＜1500ppm（0.15%）
D)Antimony Trioxide（Sb2O3） ＜1000ppm（0.1%）
E）Red Phosphorus ＜1000ppm（0.1%）

All materials meet to Halogen-Free Compliant.