

Package : VBGA×××W series

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1.Structure and materials

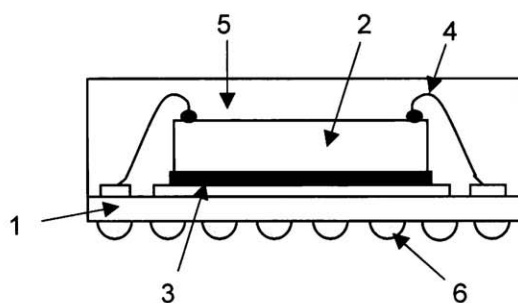


Fig. 1 Structure

No.	Item	Materials
1	Interposer	Glass-epoxy resin
2	Die	Silicon
3	Die Attach	Non-conductive Paste
4	Wire	Au
5	Molding	Epoxy Resin
6	External Lead	Solder Ball (Sn-3.0Ag-0.5Cu)

2.Tape and Reel information

2.1. Packing specification

Tape	Embossed carrier tape with dry pack
Quantity	See the table on page 4/4
Direction of feed	E2(See Fig.2)

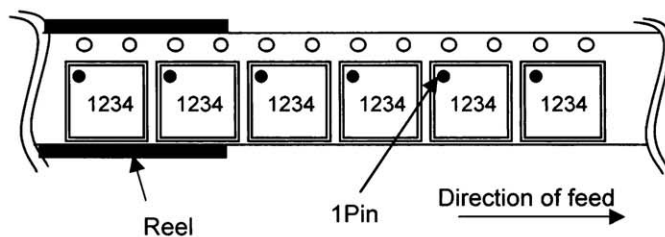


Fig. 2 Typical Tape and Reel configuration

2.2. Tape and Reel specification

2.2.1. Tape and reel dimensions(See the table on page4/4)

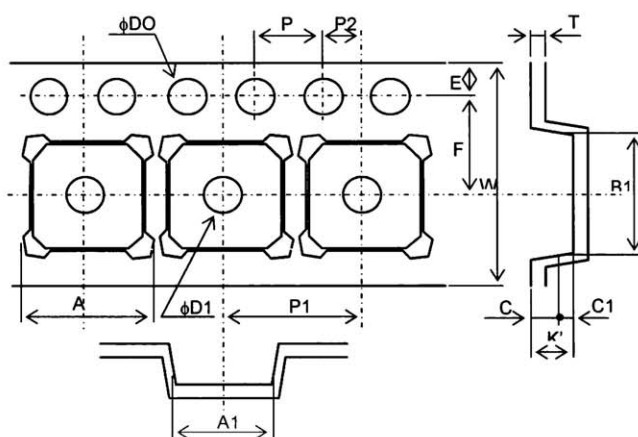


Fig. 3 Tape dimensions

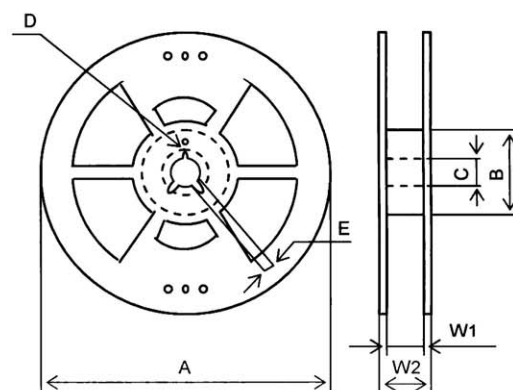


Fig 4 Reel dimensions

2.3. Leader and Trailer

2.3.1. Leader

No component pockets are 25 pockets or more.

2.3.2. Trailer

No component pockets are 10 pockets or more.

Tape is free from reel.

2.4. Label for Reel and Box

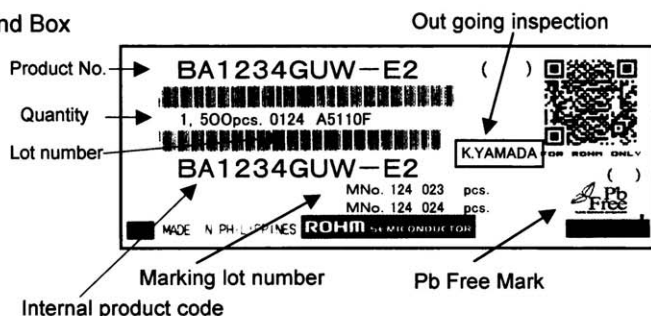


Fig. 5 Label example

2.5. Packing style

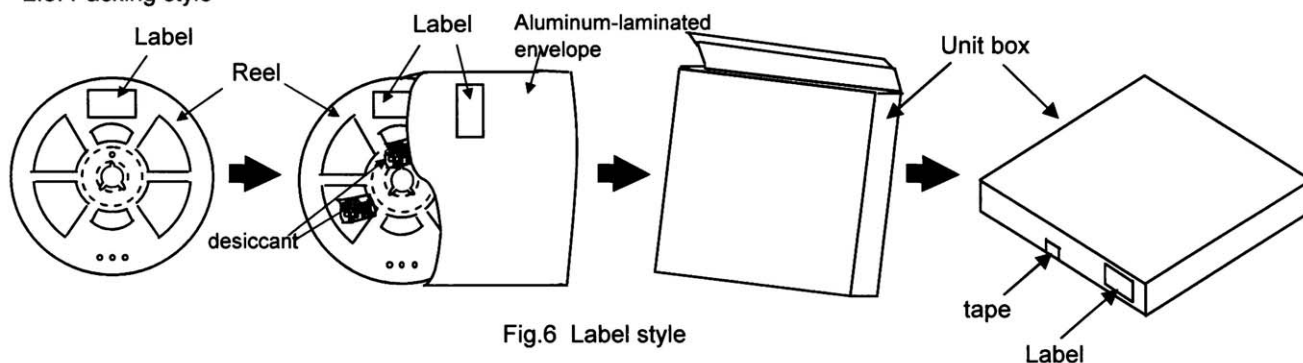
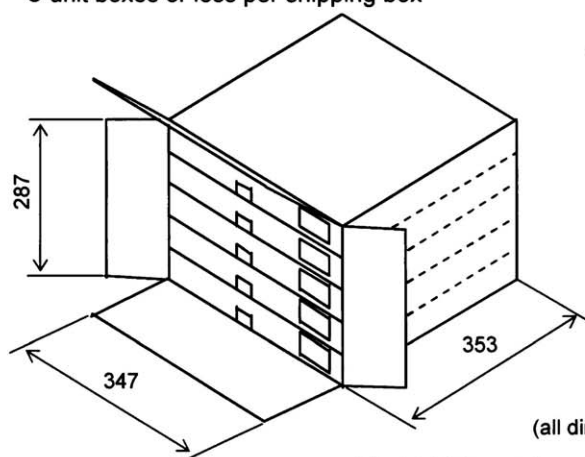


Fig.6 Label style

2.6. Shipping style

5 unit boxes or less per shipping box



(all dimensions in mm)

Fig. 7 Shipping bpx dimensions and Shipping style

2.7. Packing materials

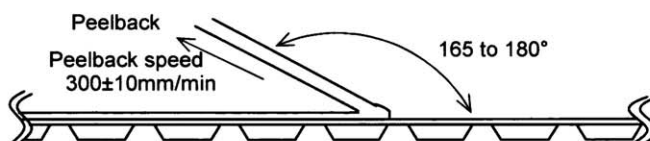
Item	Material
Embossed carrier tape	PS
Cover tape	PET+PE
Reel	PS
Desiccant	Silicagel
Envelope	Aluminume-laminated
Unit box	Cardboard
Shipping box	Cardboard

2.8. Others

2.8.1. Peelback strength

Cover tape peelback strebght is 0.2 to 0.7N.

Fig. 8 Test method



2.8.2.Missing ICs

- (1)No consecutive dropouts.
- (2)A maximum 0.1% of specified number of products in each packing may be missing.

3.Storage conditions

3.1.Storage environment

Recommended storage conditions are as follows:

- Temperature : 5 to 30°C
- Humidity : 40 to 70%RH

3.2.Storage period

- Specified storage period until soldering : 1 year

3.3.Specified storage period until soldering

Dry process before mounting is necessary in the following two case.

- 1.After the package is opened , the product is left unused over 168 hours.
- 2.Before the package is opened , the product is left in the package unused over 1 year.

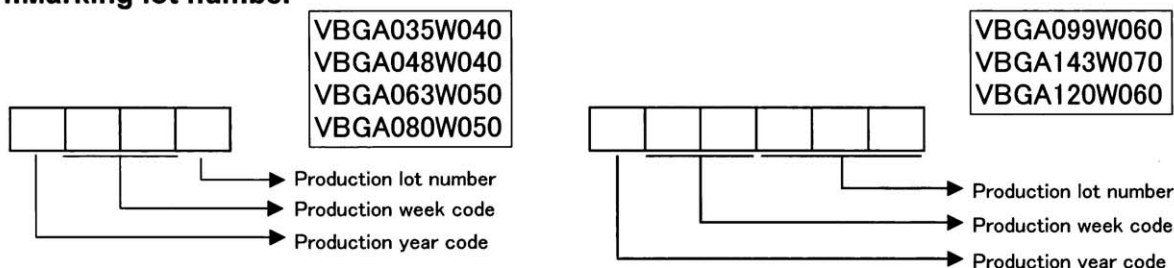
Please excute dry processing in a reel state with 60°C for 48 hours.

At this time, peelback strength of cover tape become 0.2N - 0.9N.

Case of transferring to heatproof container such as trays, excute dry processing with 125°C for 24 hours.

In addition, the dry processing should be max, 2 times due to influence on the product's solderability.

4.Marking lot number

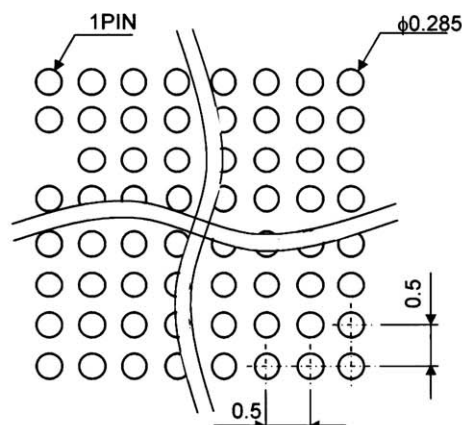
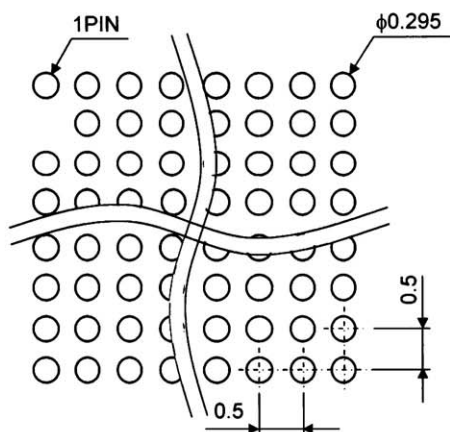


5.Footprint dimensions (Optimize footprint dimensions to the board design and soldering condition)

VBGA035W040
VBGA048W040
VBGA063W050
VBGA080W050

VBGA099W060
VBGA143W070
VBGA120W060

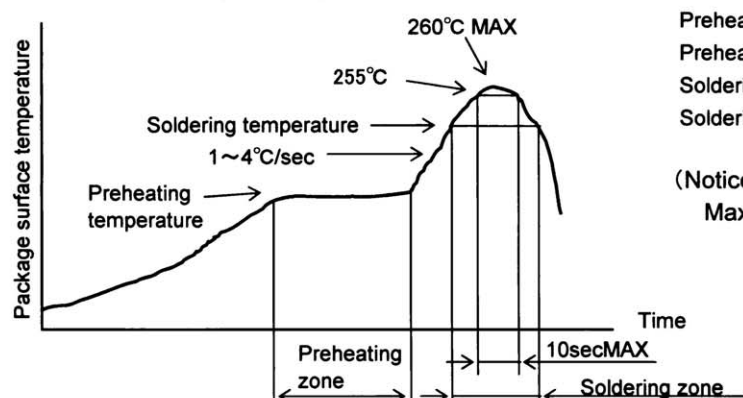
(all dimensions in mm)



*Since the height of solder ball as terminal is low, pay attention to the excessive amount of solder and over-pressing at amounting.

6. Soldering conditions

6. 1. Recommended temperature profile for reflow



Preheating temperature ; 130°C~190°C
 Preheating zone ; 120sec MAX
 Soldering temperature ; 220°C~230°C
 Soldering zone ; 60sec MAX

(Notice)
 Maximum 2-times soldering

6.2. About mounting with Sn-Pb solder paste.

Mounting with Sn-Pb solder paste is not recommended because it has a possibility of reducing reliability to connect with Sn-3.0Ag-0.5Cu solder balls.

6.3. The wave soldering method is not supported.

6.4. Underfill

To apply underfill is recommended because it has a possibility of reducing reliability to connect by drop impact or bent stress of board.

< Tape dimensions >

Package	Quantity (pcs)	Tape dimensions (all dimensions in mm)													
		A1	B1	C	C1	D0	D1	E	F	K'	P0	P1	P2	T	W
VBGA035W040	2500	4.2	4.2	(1.15)	(0.65)	φ1.5	φ1.5	1.7	5.5	1.8	4.0	8.0	2.0	0.3	12.0
VBGA048W040	2500	4.4	4.4	—	—	φ1.5	φ1.5	1.7	5.5	1.2	4.0	8.0	2.0	0.3	12.0
VBGA063W050	2500	5.2	5.2	(1.15)	(0.65)	φ1.5	φ1.5	1.75	5.5	1.8	4.0	8.0	2.0	0.3	12.0
VBGA080W050	2500	5.2	5.2	(1.15)	(0.65)	φ1.5	φ1.5	1.75	5.5	1.8	4.0	8.0	2.0	0.3	12.0
VBGA099W060	2000	6.2	6.2	(1.15)	(0.65)	φ1.5	φ1.5	1.75	5.5	1.8	4.0	8.0	2.0	0.3	12.0
VBGA120W060	2000	6.45	6.45	—	—	φ1.5	φ1.5	1.75	5.5	1.15	4.0	8.0	2.0	0.3	12.0
Tolerance		±0.05	±0.05	—	—	$\begin{smallmatrix} +0.1 \\ -0 \end{smallmatrix}$	±0.1	±0.1	±0.05	±0.1	±0.1	±0.1	±0.05	±0.05	±0.2

Package	Quantity (pcs)	Tape dimensions (all dimensions in mm)													
		A1	B1	C	C1	D0	D1	E	F	K'	P0	P1	P2	T	W
VBGA143W070	1500	7.2	7.2	(1.15)	(0.65)	φ1.5	φ1.5	1.75	7.5	1.8	4.0	12.0	2.0	0.3	16.0
Tolerance		±0.05	±0.05	—	—	$\begin{smallmatrix} +0.1 \\ -0 \end{smallmatrix}$	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05	±0.3

< Reel dimensions >

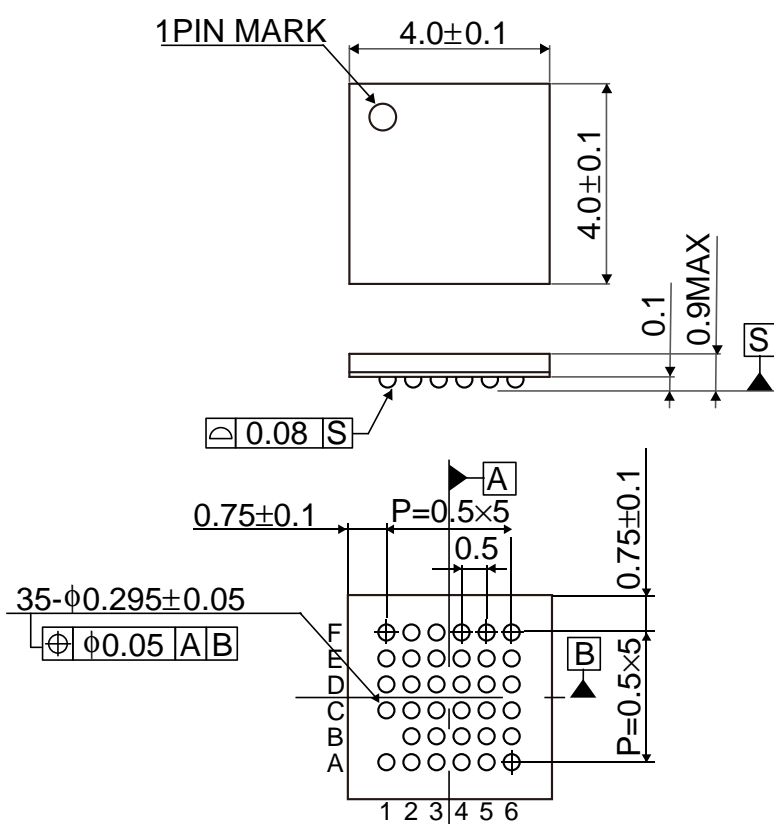
Package	Reel dimensions (all dimensions in mm)						
	A	B	C	D	E	W1	W2
VBGA035W040	φ330	50	13.0	20.2	1.5	13.4	17.4
VBGA048W040	φ330	50	13.0	20.2	1.5	13.4	17.4
VBGA063W050	φ330	50	13.0	20.2	1.5	13.4	17.4
VBGA080W050	φ330	50	13.0	20.2	1.5	13.4	17.4
VBGA099W060	φ330	50	13.0	20.2	1.5	13.4	17.4
VBGA120W060	φ330	50	13.0	20.2	1.5	13.4	17.4
VBGA143W070	φ330	50	13.0	20.2	1.5	13.4	17.4
Tolerance		—	MIN	±0.2	MIN	MIN	±1.0

< Dehydrated weight >

Dehydrated weight dimensions in g
0.02
0.03
0.04
0.04
0.06
0.06
0.08

Package Dimensions

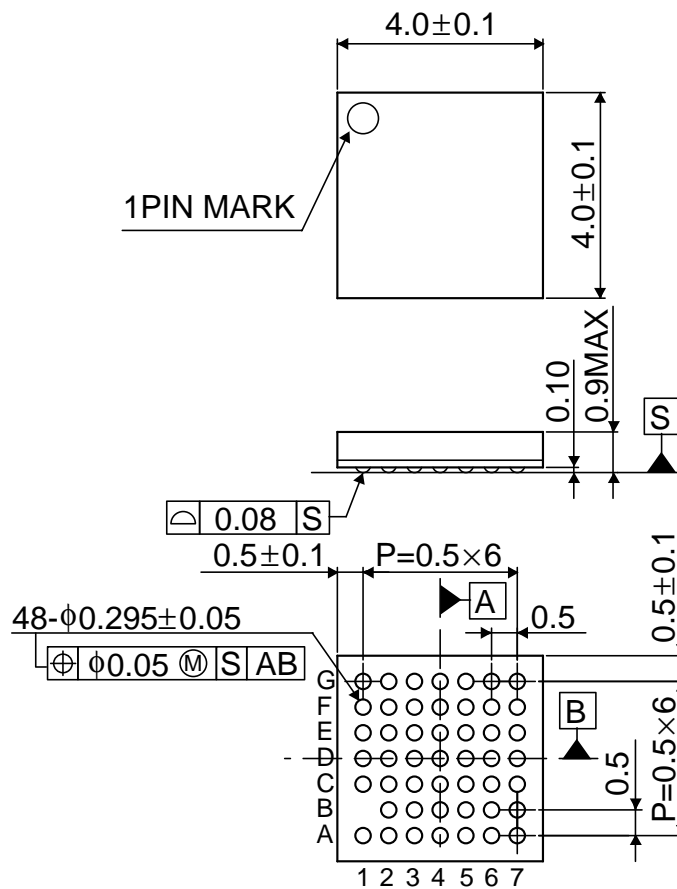
VBGA035W040



(Unit : mm)

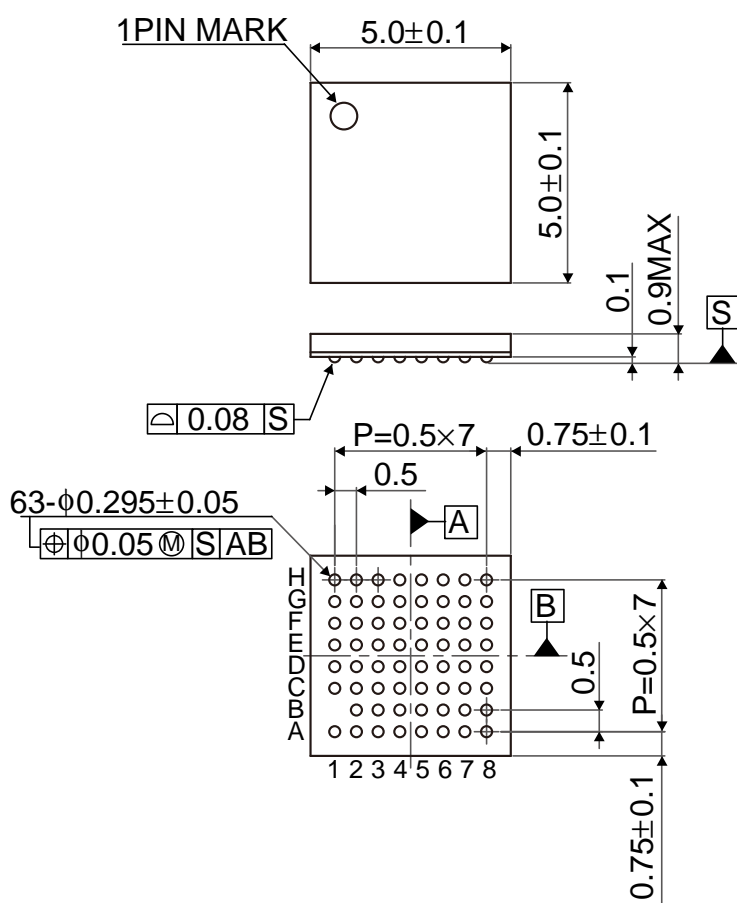
Package Dimensions

VBGA048W040



(Unit : mm)

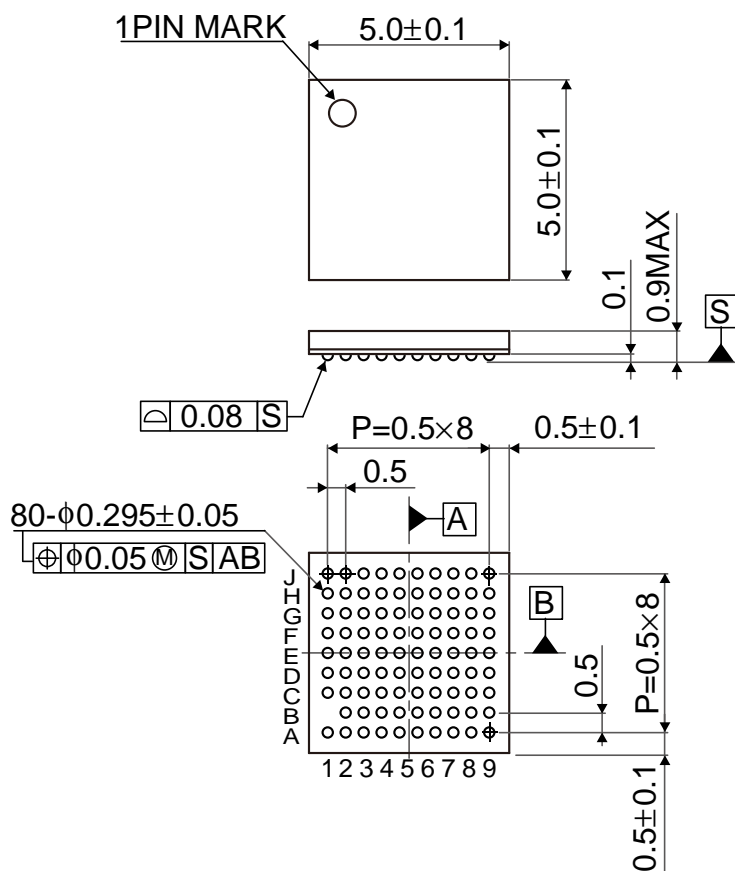
Package Dimensions

VBGA063W050

(Unit : mm)

Package Dimensions

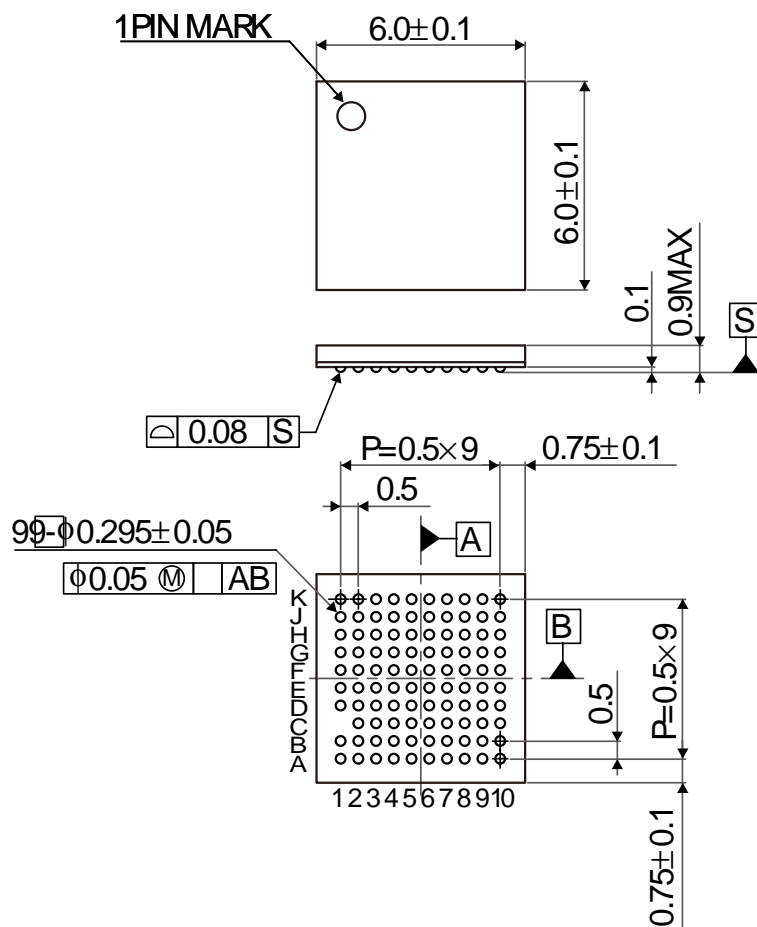
VBGA080W050



(Unit : mm)

Package Dimensions

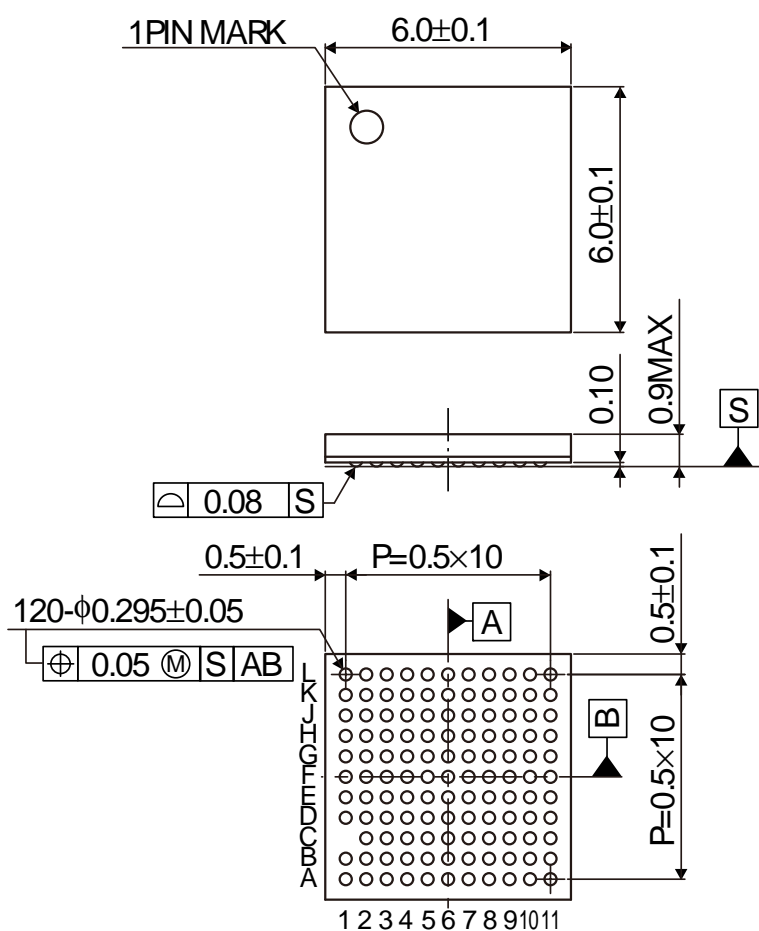
VBGA099W060



(Unit : mm)

Package Dimensions

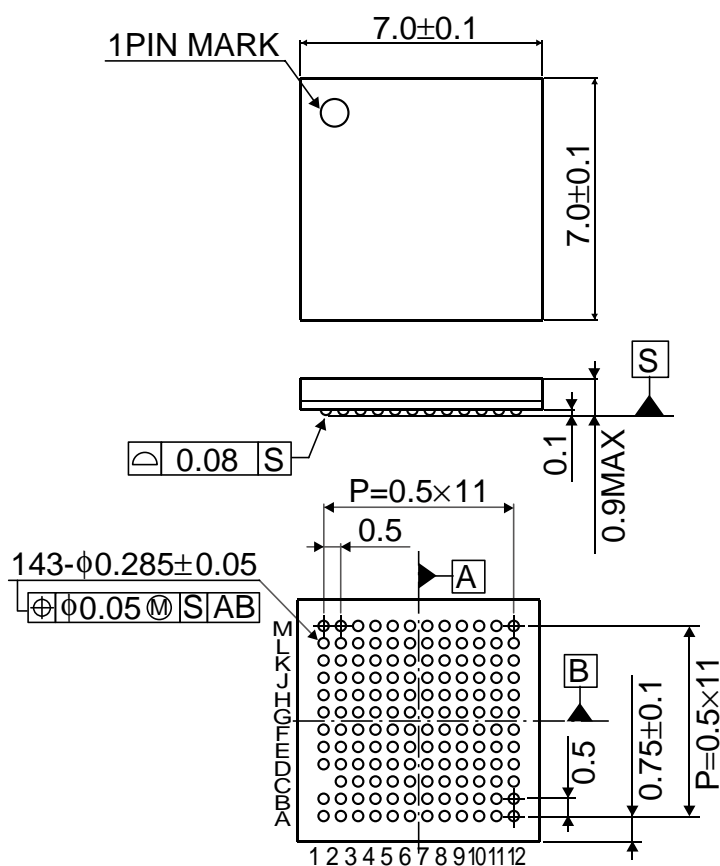
VBGA120W060



(Unit : mm)

Package Dimensions

VBGA143W070



(Unit : mm)

Notes

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