Package : TQFPXXU

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1.Structure and materials

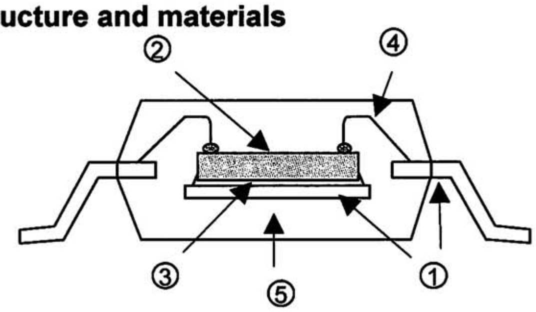

Fig. 1 Structure

No.	Item	Materials
①	Lead Frame	Cu-Alloy (External lead : Pb free solder plating)
②	Die	Silicon
③	Die Attach	Ag Paste
④	Wire	Au
⑤	Molding	Epoxy Resin

2. Tape and Reel information

2. 1. Packing specification

Container	Tray with dry pack
Quantity	See the table on page 4/4

2.2. Tray Dimension and Pin#1/ Tray Orientation

See the table on page 4/4

2.3. Label for Box

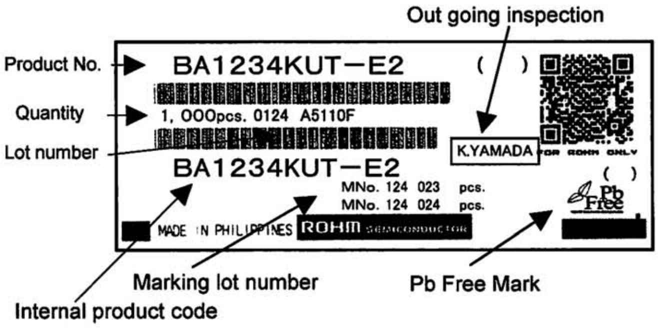

Fig. 2 Label example

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2.4. Packing style

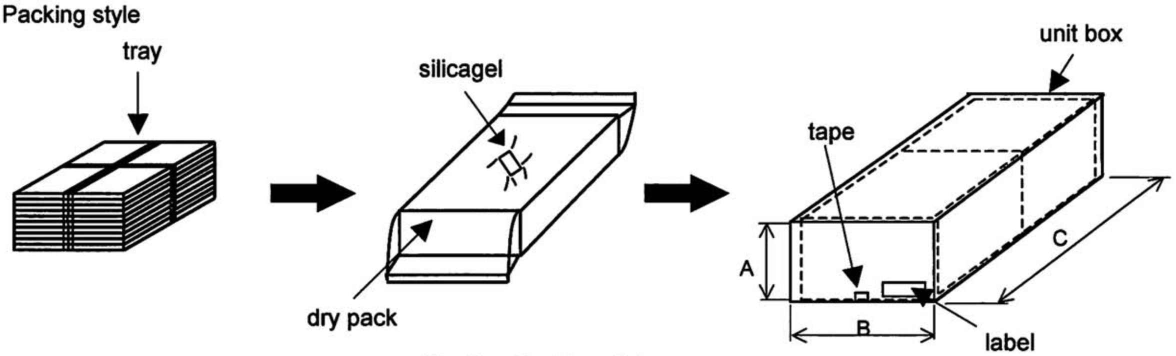


Fig. 3 Packing style

2.5. Shipping style

Shipping box dimensions are as follows;

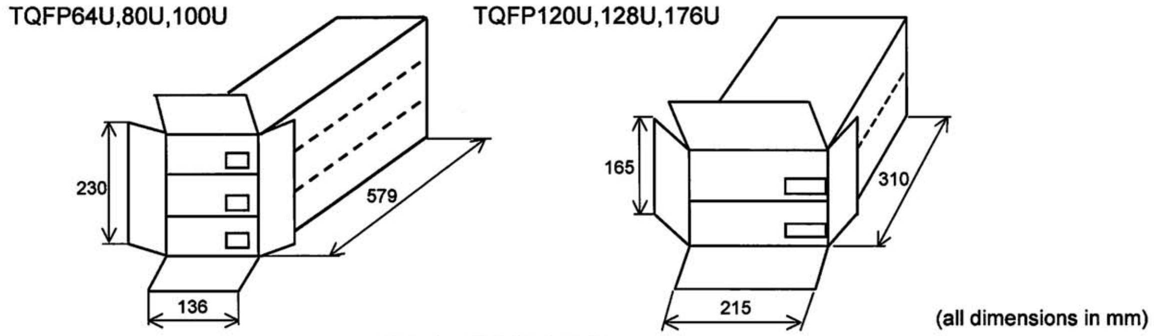


Fig. 4 Packing style

2.6. Packing materials

Item / Package	Tray	Desiccant	Envelope	Unit box	Shipping box
TQFP64U,80U 100U,176U	PPE (Heat resistive)	Silicagel	Aluminume-laminated	Cardboard	Cardboard
TQFP120U,128U	PPE (Heat resistive)	Silicagel	Aluminume-laminated	Cardboard	Cardboard

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 : 1 year

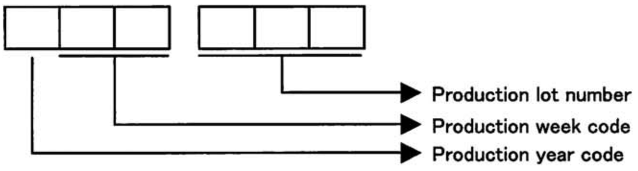
3.3. Specified storage period until soldering

After dry pack is opened , assemble package within 168hours.

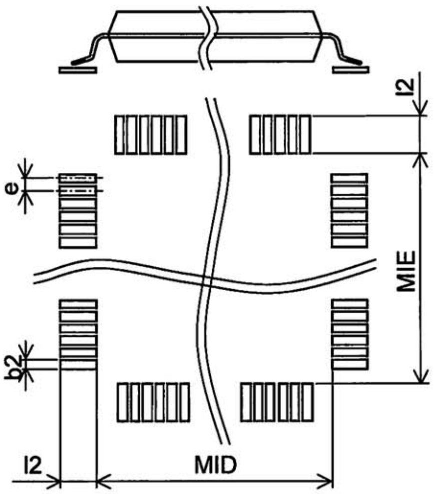
If the storage period has expired , the products must be baked 125℃ for 24hours.

Maximum 2times baking for keeping solderbility.

4. Marking lot number



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

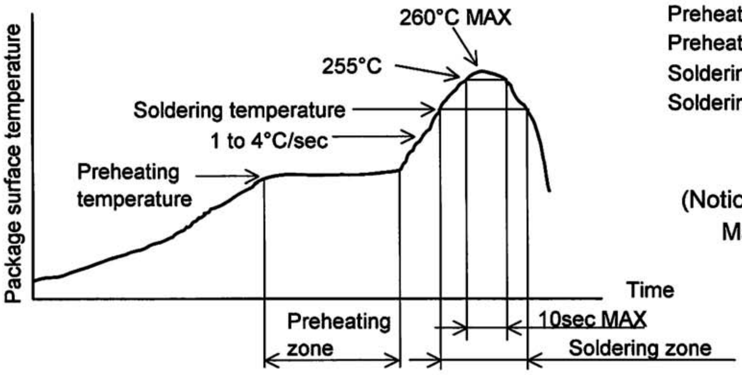


(all dimensions in mm)

Package	Land pitch e	Land space MID	Land space MIE	Land length ≥ l2	Land width b2
TQFP64U	0.40	7.20	7.20	1.20	0.20
TQFP80U	0.40	10.20	10.20	1.20	0.20
TQFP100U	0.40	12.20	12.20	1.20	0.20
TQFP120U	0.40	14.20	14.20	1.20	0.20
TQFP128U	0.40	14.20	14.20	1.20	0.20
TQFP176U	0.40	20.20	20.20	1.20	0.20

6. Soldering conditions

6. 1. Recommended temperature profile for reflow



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

(Notice)
Maximum 2-times soldering

6. 2. Recommended condition for wave soldering

Process	Conditions	
	Temperature	Time
Preheating	120°C to 150°C	60sec MAX
Soldering	260°C ± 3°C	12sec MAX

(Notice) Soldering time is provided for total soldering time in case of dual wave soldering.

6. 2. 1. Notes for wave soldering

(1) Do not use other soldering methods with wave soldering.
(2) Recommend to clean the board to eliminate flux, solder waste, and other impurities for reliability, after soldering.
(3) Optimize soldering condition to prevent solder bridging.

6. 3. Recommended condition for solder iron

Recommended condition for solder iron
-Solder iron temperature : 380°C or less
-Mounting time : 4sec or less

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< Shipping box dimensions >

Pakcage	Quantity (pcs)	Max.Shipping Quantity (box)	Shipping box dimensions (all dimension in mm)		
			A	B	C
TQFP64U	1000	3	70	130	510
TQFP80U	1000	3	70	130	510
TQFP100U	1000	3	70	130	510
TQFP120U	500	2	75	200	290
TQFP128U	500	2	75	200	290
TQFP176U	200	2	75	200	290

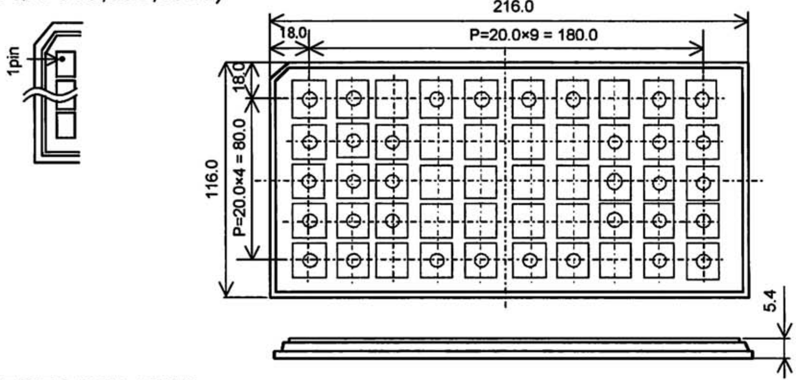
< Dehydrated weight >

Dehydrated weight dimensions in g
0.15
0.29
0.39
0.53
0.53
1.03

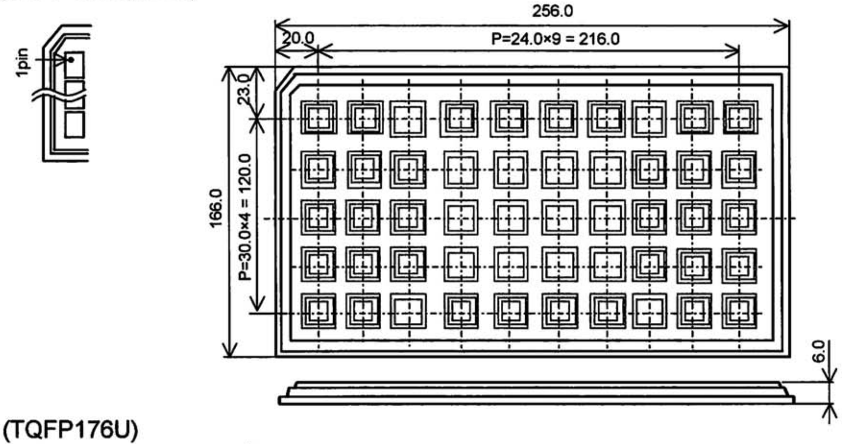
< Tray Dimension and Pin#1/ Tray Orientation >

(all dimensions in mm)

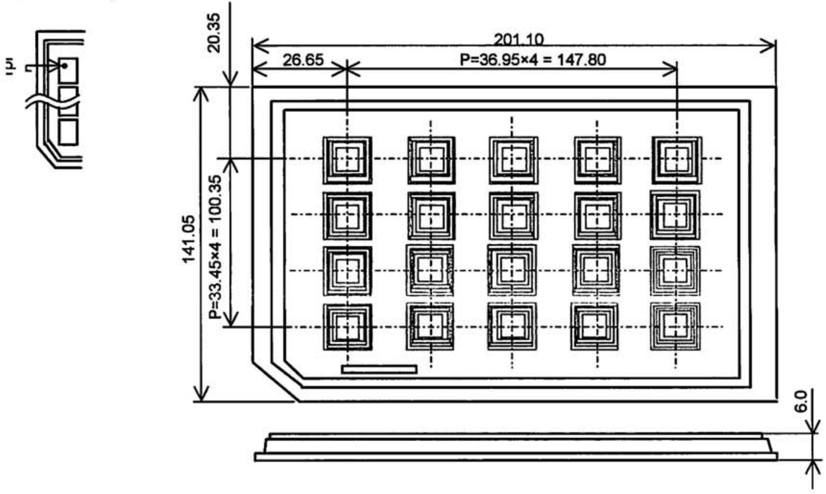
(TQFP64U,80U,100U)



(TQFP120U,128U)



(TQFP176U)



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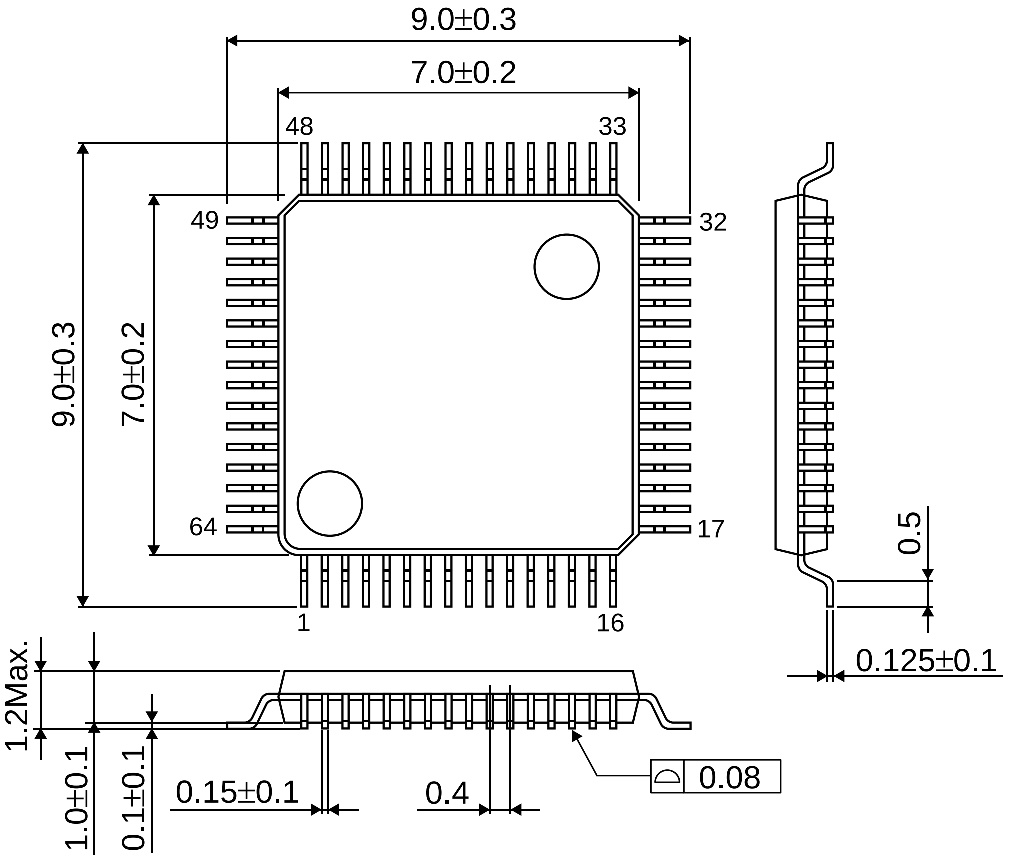
Package Dimensions

TQFP64U



(Unit : mm)

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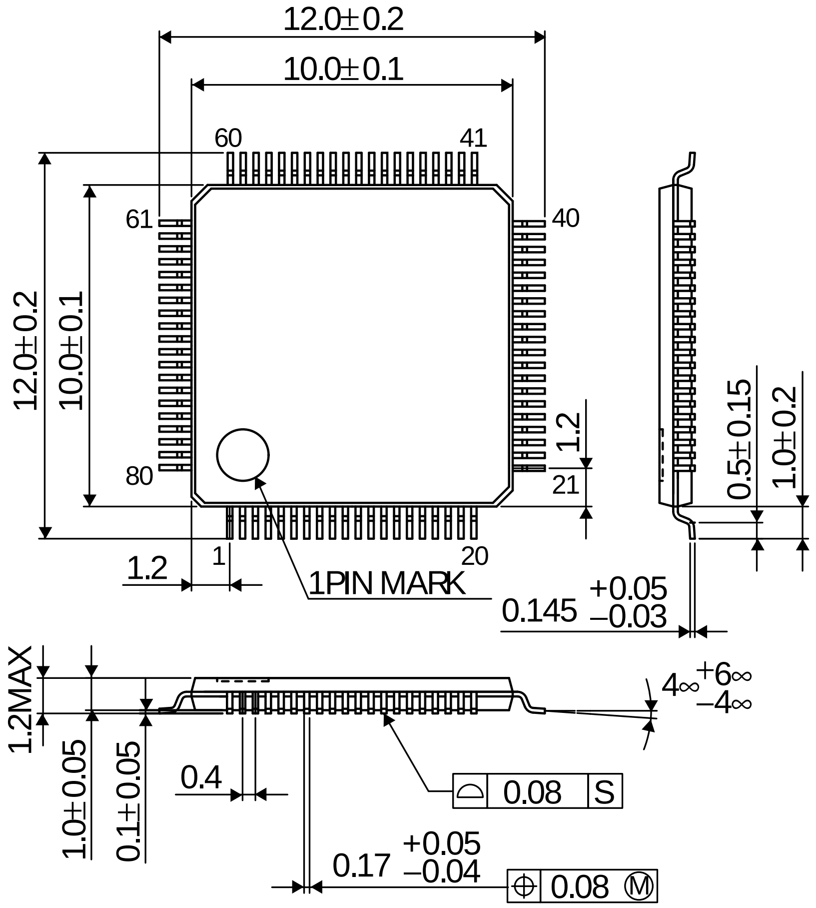
Package Dimensions

TQFP80U



(Unit : mm)

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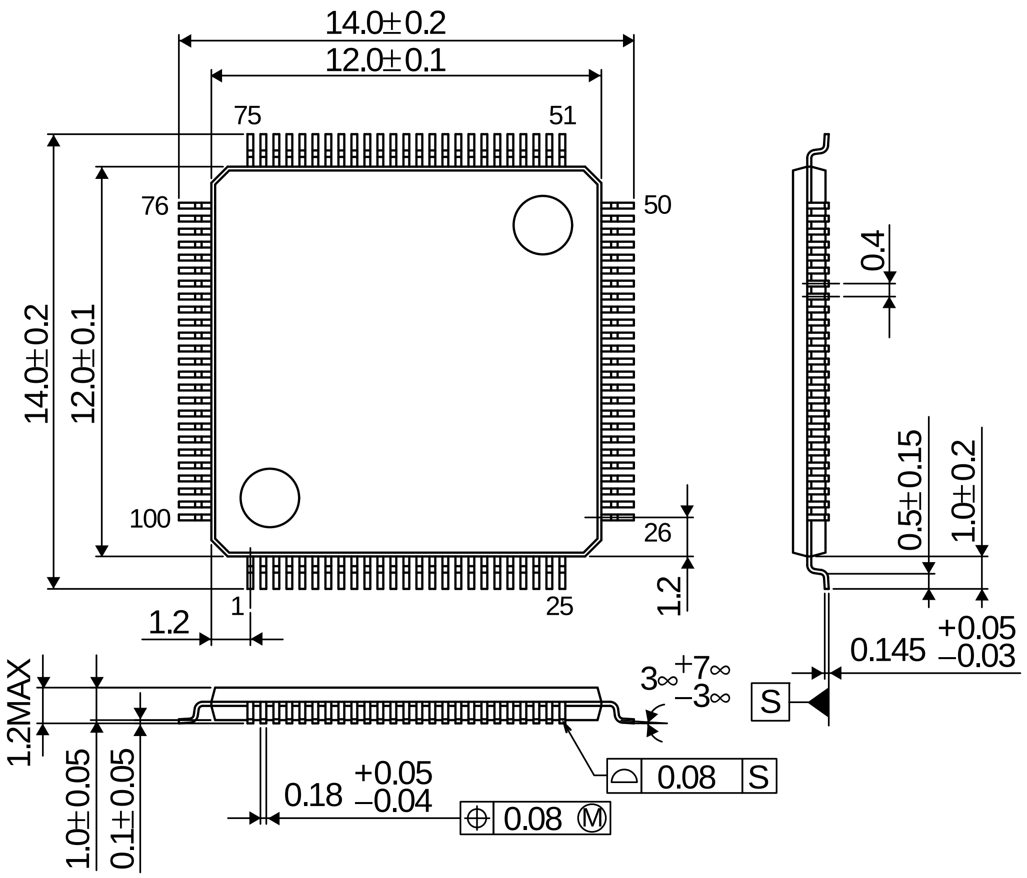
Package Dimensions

TQFP100U



(Unit : mm)

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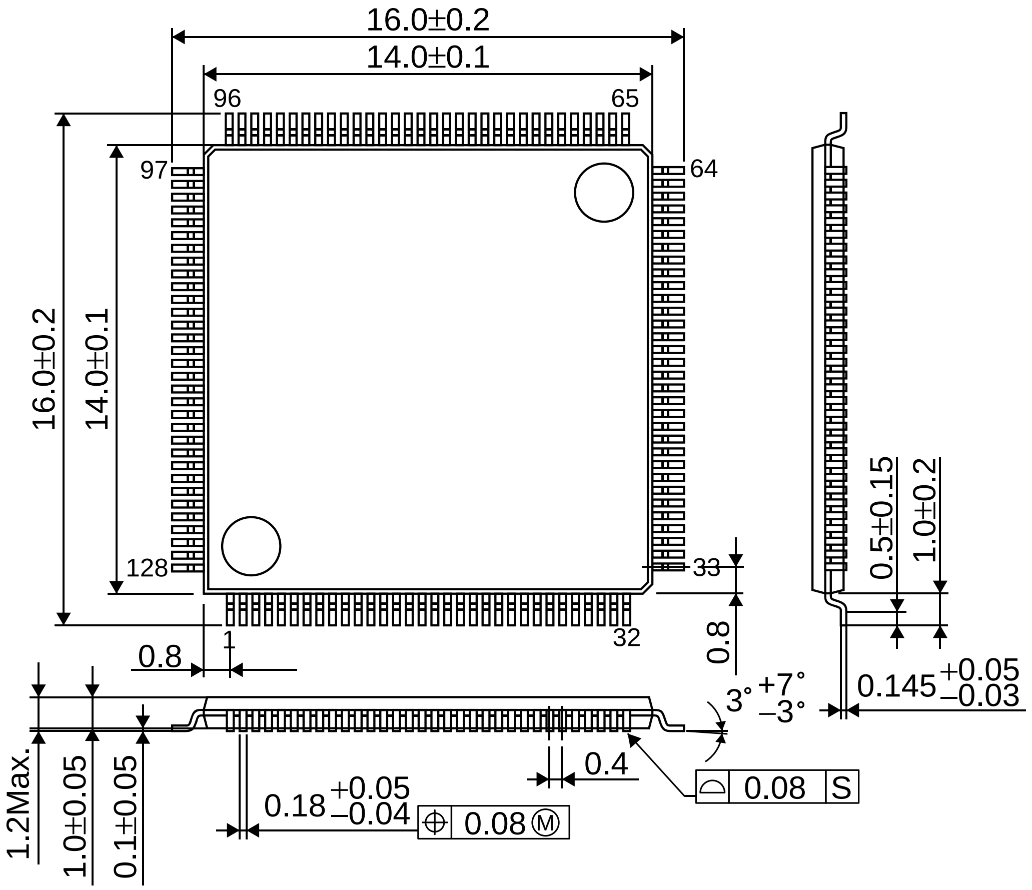
Package Dimensions

TQFP128U



(Unit : mm)

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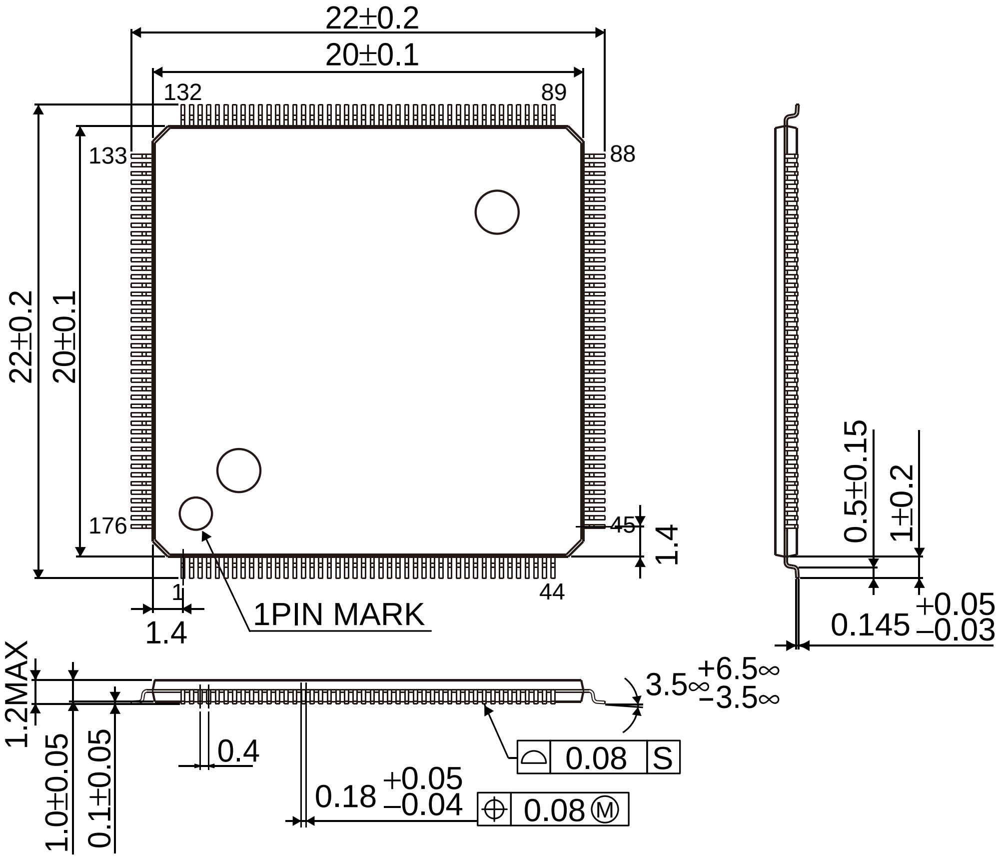
Package Dimensions

TQFP176U



(Unit : mm)

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