

Package : TO252 , TO252S

< A table of contents >

1. Structure and materials	1/4 page
2. Tape and Reel information	1/4 to 3/4 page
3. Storage conditions	3/4 page
4. Marking lot number	3/4 page
5. Footprint dimensions	3/4 page
6. Soldering conditions	3/4 to 4/4 page

1. Structure and materials

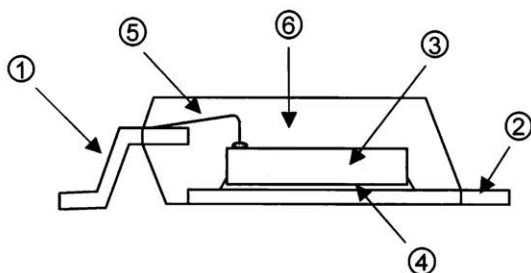


Fig. 1 Structure

No.	Item	Materials
①	Lead Frame	Cu-Alloy (External lead : Pb free solder plating)
②	Heatsink	Cu-Alloy (External heatsink : Pb free solder plating)
③	Die	Silicon
④	Die Attach	Solder
⑤	Wire	Au
⑥	Molding	Epoxy Resin

2. Tape and Reel information

2. 1. Packing specification

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

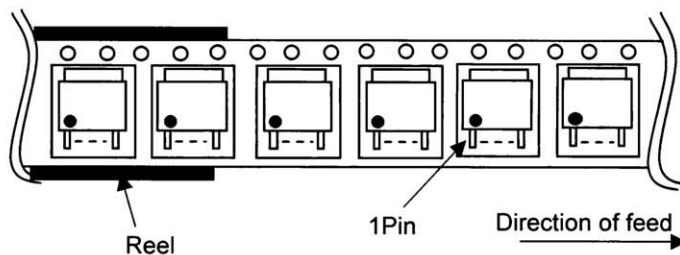


Fig. 2 Typical Tape and Reel configuration

2. 2. Tape and Reel specification

2. 2. 1. Tape and reel dimensions (See the table on page 4/4)

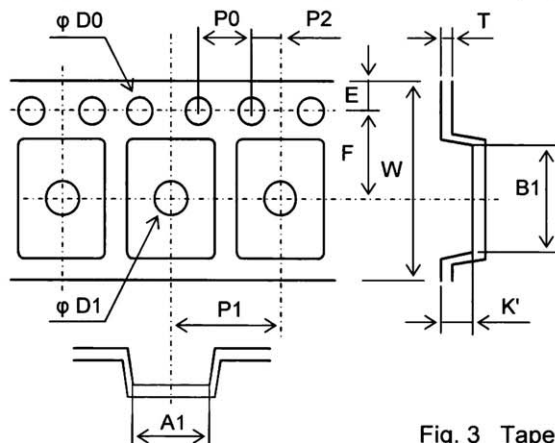


Fig. 3 Tape dimensions

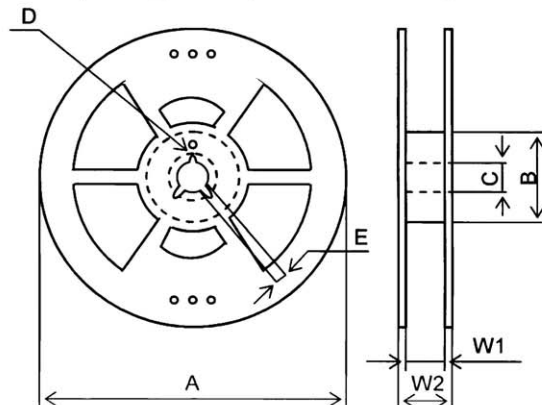


Fig. 4 Reel dimensions

2. 3. Leader and Trailer

2. 3. 1. Leader

No component pockets are 40 pockets or more.

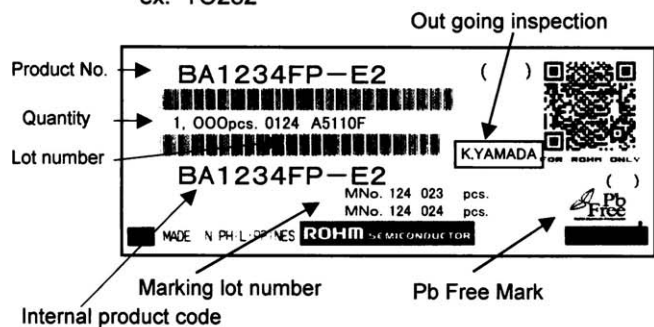
2. 3. 2. Trailer

No component pockets are 10 pockets or more.

Tape is free from reel.

2. 4. Label for Reel and Box

ex. TO252



ex. TO252S

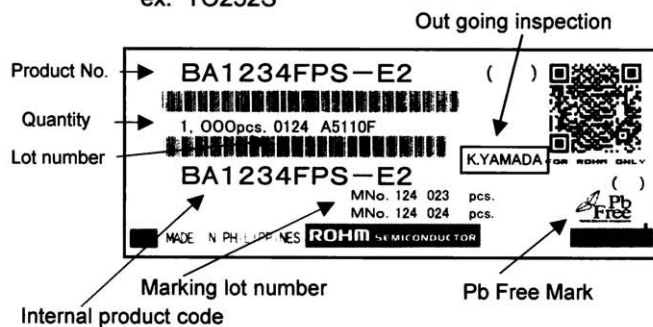


Fig. 5 Label example

2. 5. Packing style

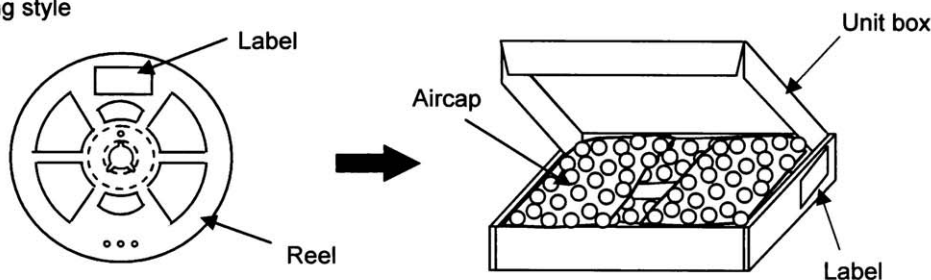
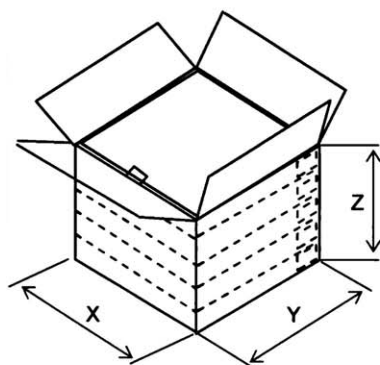


Fig. 6 Packing style

2. 6. Shipping style

5 unit boxes or less per shipping box



Package	box dimensions (all dimensions in mm)		
	X	Y	Z
TO252-3	372	368	305
TO252-5	372	368	305
TO252S-3	372	368	305
TO252S-3+	372	368	305
TO252S-5	372	368	305
TO252S-5+	372	368	305

(all dimensions in mm)

2. 7. Packing materials

Item	Material
Embossed carrier tape	PS
Cover tape	PET + PE
Reel	PS
Air cap	Polyethylene
Unit box	Cardboard
Shipping box	Cardboard

* Please obey the indication of top side in a shipping box.

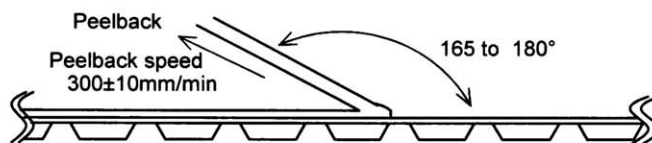
Fig. 7 Shipping box dimensions and Shipping style

2. 8. Others

2. 8. 1. Peelback strength

Cover tape peelback strength is 0.2 to 0.7N.

Fig. 8 Test method



2. 8. 2. Missing lcs

- (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

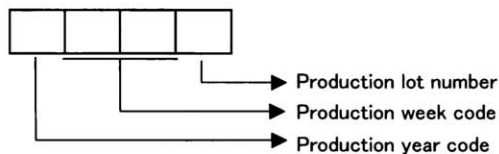
Recommended storage conditions are as follows :

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

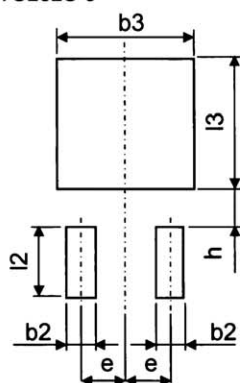
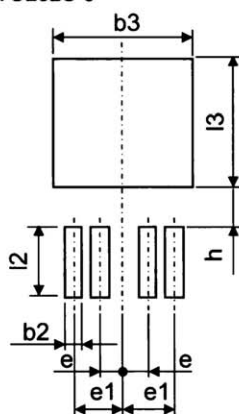
3. 2. Storage period

- Specified storage period : 1 year

4. Marking lot number



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

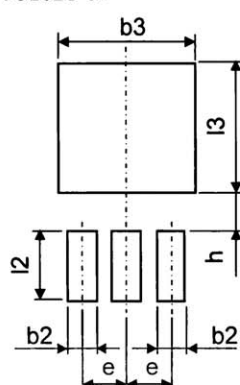
TO252-3
TO252S-3TO252-5
TO252S-5

(all dimensions in mm)

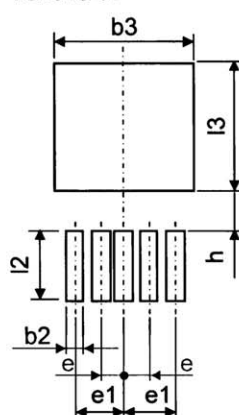
Package	Land pitch		Land space h
	e	e1	
TO252-3	2.30	-	1.50
TO252-5	1.27	2.54	1.50
TO252S-3	2.30	-	1.50
TO252S-5	1.27	2.54	1.50

Package	Land length		Land width	
	≥ l2	≥ l3	b2	b3
TO252-3	2.50	7.00	1.50	7.00
TO252-5	2.50	7.00	0.76	7.00
TO252S-3	2.50	7.00	1.50	7.00
TO252S-5	2.50	7.00	0.76	7.00

TO252S-3+



TO252S-5+

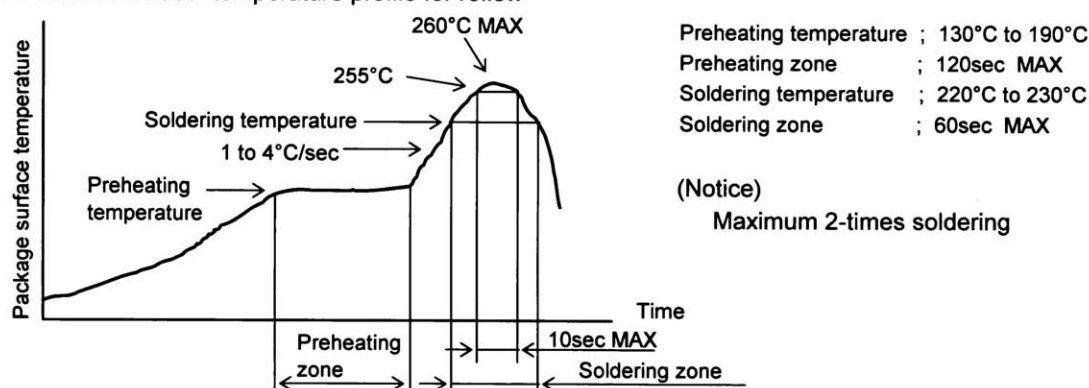


Package	Land pitch		Land space h
	e	e1	
TO252S-3+	2.30	-	1.50
TO252S-5+	1.27	2.54	1.50

Package	Land length		Land width	
	≥ l2	≥ l3	b2	b3
TO252S-3+	2.50	7.00	1.50	7.00
TO252S-5+	2.50	7.00	0.76	7.00

6. Soldering conditions

6. 1. Recommended temperature profile for reflow



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

< Tape dimensions >

Package	Quantity (pcs)	Tape dimensions (all dimensions in mm)											
		A1	B1	D0	D1	E	F	K'	P1	P2	T	W	P0
TO252-3	2000	6.85	10.5	φ1.5	φ1.5	1.75	7.5	2.6	8.0	2.0	0.3	16.0	4.0
TO252-5	2000	6.85	10.5	φ1.5	φ1.5	1.75	7.5	2.6	8.0	2.0	0.3	16.0	4.0
TO252S-3	2000	6.80	10.45	φ1.5	φ1.5	1.75	7.5	1.5	8.0	2.0	0.3	16.0	4.0
TO252S-5	2000	6.80	10.45	φ1.5	φ1.5	1.75	7.5	1.5	8.0	2.0	0.3	16.0	4.0
TO252S-3+	2000	6.80	10.45	φ1.5	φ1.5	1.75	7.5	1.5	8.0	2.0	0.3	16.0	4.0
TO252S-5+	2000	6.80	10.45	φ1.5	φ1.5	1.75	7.5	1.5	8.0	2.0	0.3	16.0	4.0
Tolerance		±0.1	±0.1	^{+0.1} ₋₀	MIN	±0.1	±0.1	±0.1	±0.1	±0.1	-	±0.3	±0.1

< Reel dimensions >

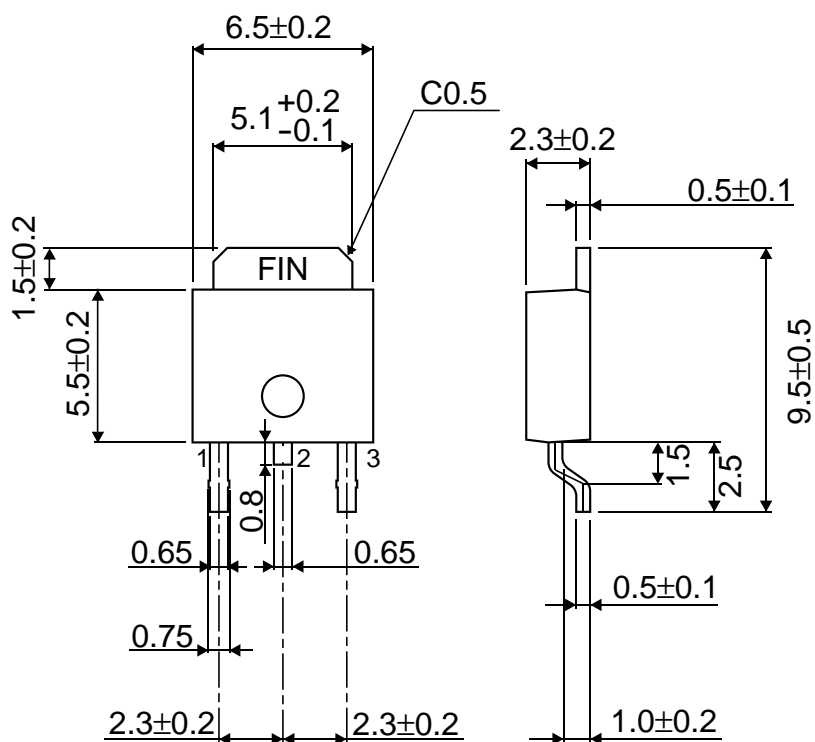
Package	Reel dimensions (all dimensions in mm)						
	A	B	C	D	E	W1	W2
TO252-3	φ330	φ80	φ13.0	φ20.2	1.5	16.4	24.4
TO252-5	φ330	φ80	φ13.0	φ20.2	1.5	16.4	24.4
TO252S-3	φ330	φ80	φ13.0	φ20.2	1.5	16.4	24.4
TO252S-5	φ330	φ80	φ13.0	φ20.2	1.5	16.4	24.4
TO252S-3+	φ330	φ80	φ13.0	φ20.2	1.5	16.4	24.4
TO252S-5+	φ330	φ80	φ13.0	φ20.2	1.5	16.4	24.4
Tolerance	-	-	±0.2	MIN	MIN	^{+2.0} ₋₀	MAX

< Dehydrated weight >

Dehydrated weight dimensions in g
0.29
0.30
0.14
0.14
0.14
0.14

Package Dimensions

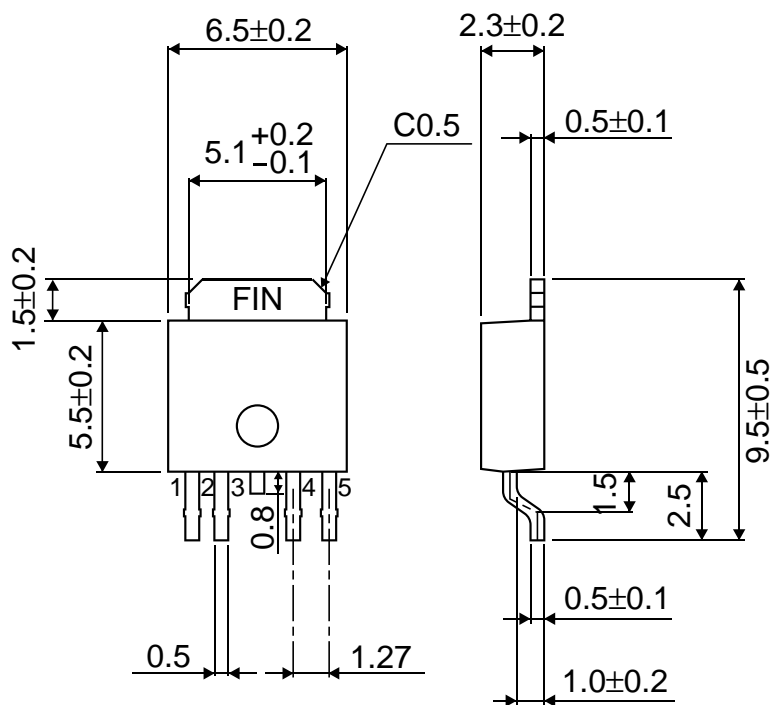
TO252-3



(Unit : mm)

Package Dimensions

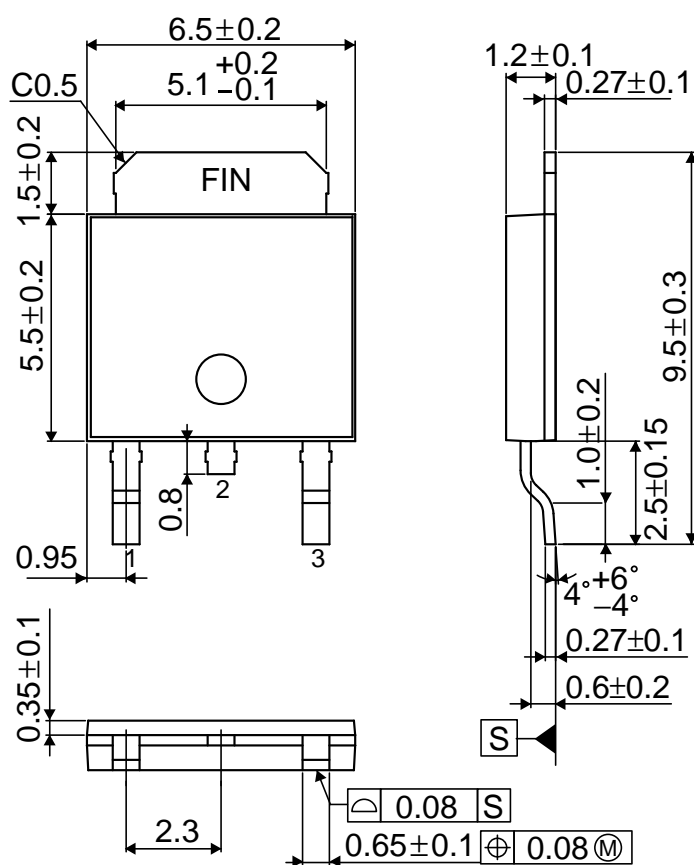
TO252-5



(Unit : mm)

Package Dimensions

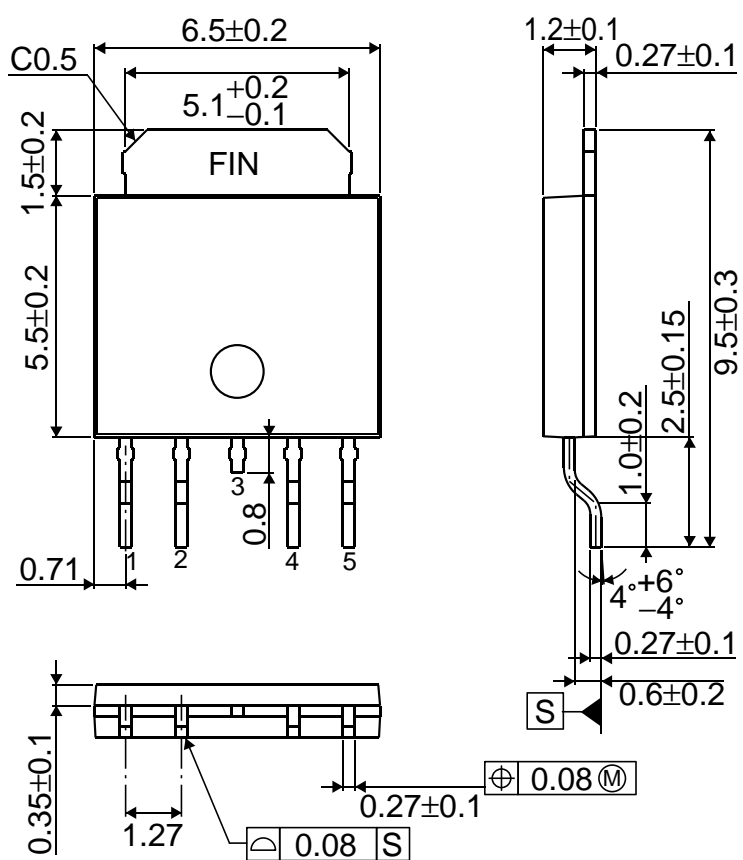
TO252S-3



(Unit : mm)

Package Dimensions

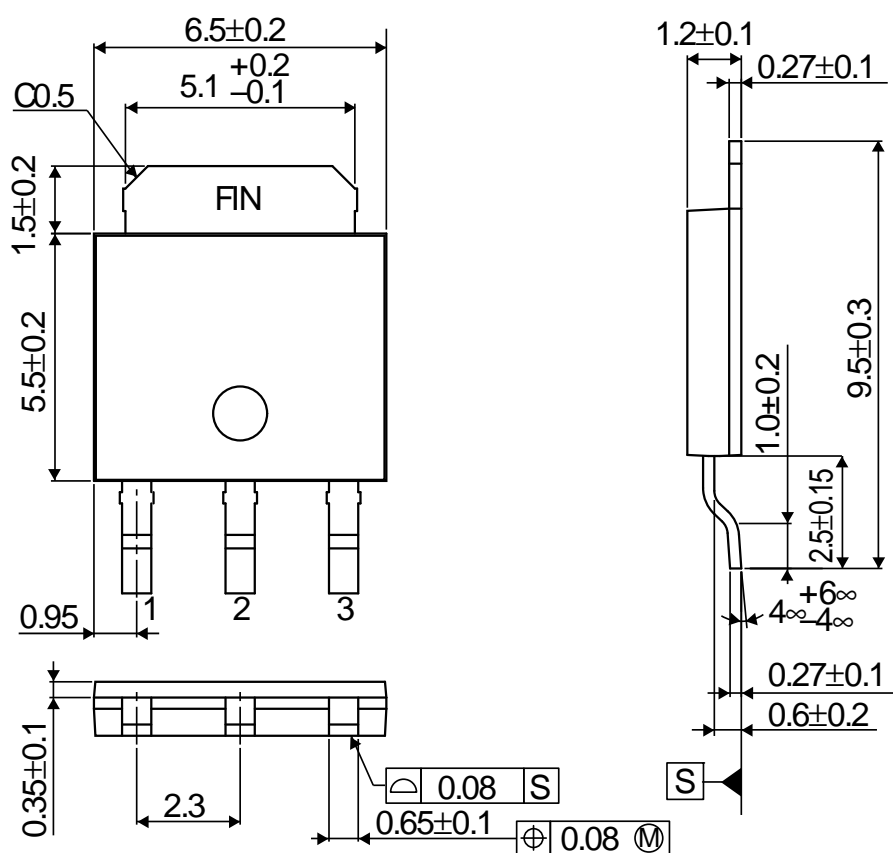
TO252S-5



(Unit : mm)

Package Dimensions

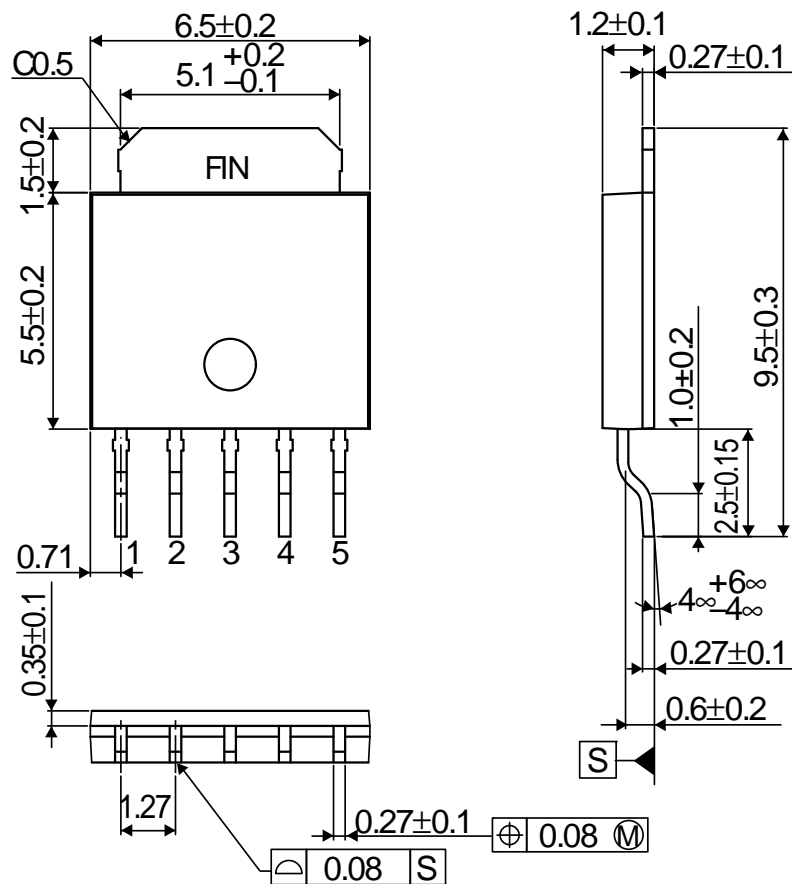
T0252S-3+



(Unit : mm)

Package Dimensions

T0252S-5+



(Unit : mm)

Notes

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