

TO:

Notification about Change of Stick (magazine) Material (PVC to PS) of Package TO-220 Outsourced Products

TOSHIBA

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Quality Assurance Department

Himeji Operations - Semiconductor

Toshiba Electronic Devices & Storage Corporation

1. Outline of Change

1. Products subject to change

Please see the product list.

2. Purpose of change: To reduce environmental impact

Currently, sticks(magazine) made of PVC (Polyvinyl chloride) are used as a standard packing material of a subcontractor. The material will be changed to PS (Polystyrene).

3. Description of change: Material and stick

	Before Change	After Change
Material	PVC (Polyvinyl chloride)	PS (Polystyrene)
Stick(magazine)	Subcontractor's standard	Toshiba's standard

4. Schedule of change

The change is scheduled to start from the production of October 2023.

5. Other

The change of the packing material will not entail any change in the electrical characteristics and reliability of the products.

2. Packing Material Specifications and Drawing

For reference

The packing material specifications will not be changed.

Stick Magazine (Shipping Tube) Packaging specifications for TO-220

1. Stick Magazine (Shipping Tube)

1.1 Orientation of Device

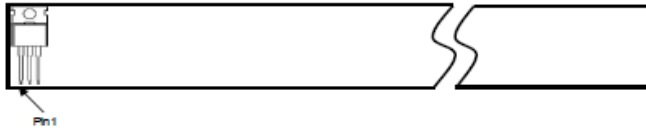


Figure 1 Orientation of Device

(The package is an example to show the orientation.)

1.2 Quantity

Maximum Quantity of Devices	
50 pcs./Stick Magazine (Shipping Tube)	1000 pcs./Inner carton

2. Stick Magazine (Shipping Tube) Dimensions

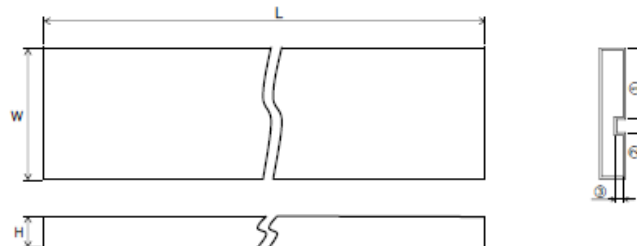


Figure 2 Stick Magazine (Shipping Tube) Dimensions

Table 1 Stick Magazine (Shipping Tube) Dimensions

Symbols	External Dimensions (Unit: mm)			Internal Dimensions (Unit: mm)								
	L	W	H	①	②	③	④	⑤	⑥	⑦	⑧	⑨
Typical	534.5	33.0	7.0	18.0	3.4	2.4	-	-	-	-	-	-
Tolerance	±2	±0.2	±0.2	±0.2	±0.2	±0.2	-	-	-	-	-	-

3. Inner Carton

Inner Carton

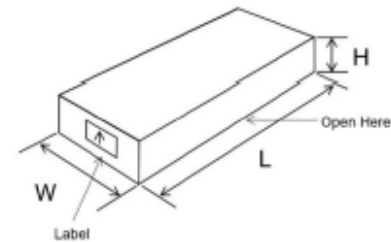


Figure 3 Inner Carton Dimensions

Table 2 Inner Carton Dimensions (Outer Dimensions)

Unit: mm		
L	W	H
570	160	55

4. Label

Figure 4 is a label affixed to a carton.
About ① to ⑨, refer to the following explanation.
Refer to Figure 3 for the label position.

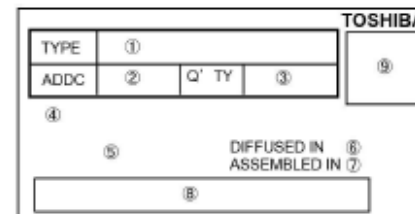


Figure 4 Label

- ① Part Number
- ② Additional Code
- ③ Quantity
- ④ Lot Code
- ⑤ Environmental Information
- ⑥ Country/Region of Origin(Pellet Process)
- ⑦ Country/Region of Origin(Assembly Process)
- ⑧ Bar Code
- ⑨ Matrix Code

* Only the packing material will be changed (PVC to PS); the device quantity per stick, the stick dimensions, and the inner carton will not be changed.

3. Packing Material Test Results

Transport test result: Pas

The new packing material was confirmed having no problems.

<Basic test>

Frequency = 5Hz

Total amplitude = 20 mm

G-factor = 1G

Direction = Up and down, left and right

Time = 45 min for up and down, 45 min for left and right

<Resonance test>

Frequency = 10-60Hz

G-factor = 0.5G

Direction = Up and down

Time = 15 min

<Drop test>

Drop height = 60 cm

The number of drops = 9 drops

包装認定試験

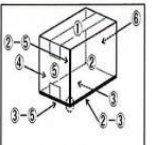
包装認定通知書および製品評価報告書

	No.	依頼年月日	申請部門	承認	確認	担当
包装認定通知書		2022年11月14日				

対象製品

製品名	-----	製品区分	<input checked="" type="checkbox"/> 既存 <input type="checkbox"/> 新規 <input type="checkbox"/> 変更 <input type="checkbox"/> その他
		包装区分	<input type="checkbox"/> 既存 <input type="checkbox"/> 新規 <input checked="" type="checkbox"/> 変更 <input type="checkbox"/> VA/GD <input type="checkbox"/> その他
外形名	2-10X1A (TO-220AB (ATX))	包装総質量	16.9Kg
		出荷開始	年 月 日
包装形態	マガジン(スティック、チューブ)	適用輸送手段	輸出一般輸送

包装試験内容

試験条件	<input type="checkbox"/> 国内条件		<input checked="" type="checkbox"/> 輸出条件		
	振動	基本試験	周波数: 5Hz	時間: 上下 30分 左右 30分	時間: 上下 45分 左右 45分
全振幅: 20mm					
G-factor: 1G					
方向: 上下および左右					
共振試験	周波数: 10~60Hz	時間: 10分	時間: 15分		
	G-factor: 0.5G				
	方向: 上下				
落下(落下高さ)	包装総質量 ⇒ 落下高さ		包装総質量 ⇒ 落下高さ		
	10~20Kg ⇒ 35cm		10~20Kg ⇒ 60cm		
試験	落下方向: ③-⑤ ⇒ ②-③ ⇒ ②-⑤ ⇒ ⑤ ⇒ ⑥ ⇒ ② ⇒ ④ ⇒ ③ ⇒ ① (3稜6面)		落下部位の記号		
	落下回数: 各1回、計9回				
判定	*判定合格 (詳細は別紙参照) *この試験法は、設計標準()による。				

TOSHIBA

Our Semiconductor and Storage products
will always be a driving force to change the world

Toshiba Electronic Devices and Storage, together with our customers, will accelerate our future journey.
We aim to be a company that will be chosen for our pioneering technology and spirit embedded in our products.

「Do the right thing / 誠実であり続ける」