

# Product Document



**Application Note**

# **POS Sensors**

## **Tape & Reel Packing Information**

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## 1 General Description

This application note describes ams tape & reel packaging information of magnetic position sensors.

**Table 1: Package Overview (only T&R)**

Package	Device	Device per reel	
		7"	13"
SSOP16	AS5040	500	2000
	AS5045B		
	AS5140H		
	AS5145H		
	AS5145A   AS5145B		
	AS5115		
	AS5045	-	2000
TSSOP-14	AS5048A   AS5048B	500	4500
	AS5047P   AS5047D		
	AS5147P   AS5147		
	AS5403		
	AS5410		
TSSOP-20	AS5304   AS5306	500	4500
	AS5311		
	NSE-5310		
SOIC-8	AS5600   AS5601	500	2500
	AS5510		
	AS5161   AS5162		
	AS5170A   AS5170B		
WL-CSP	AS5510	1000	12000
MLF-16	AS5262   AS5261	500	4000
MLF-32	AS5215	500	4000
MLF-40 7x7	AS5247	1000	4000
QFN-16	AS5055A   AS5050A	500	6000
QFN-32	AS5245	500	4000
SIP	AS5171A   AS5171B	-	3000

## 2 Tape & Reel

The tape-and-reel configuration is used for transport and storage from the manufacturer (ams AG) to the customer, and for use in the customer manufacturing plant. The configuration is designed for feeding components to automatic-placement machines for surface mounting on board assemblies. The complete configuration consists of a carrier tape with sequential individual cavities that hold individual components, and a cover tape that seals the carrier tape to retain the components in the cavities.

Single reels are packed into dry-pack and inserted into intermediate boxes before shipping.

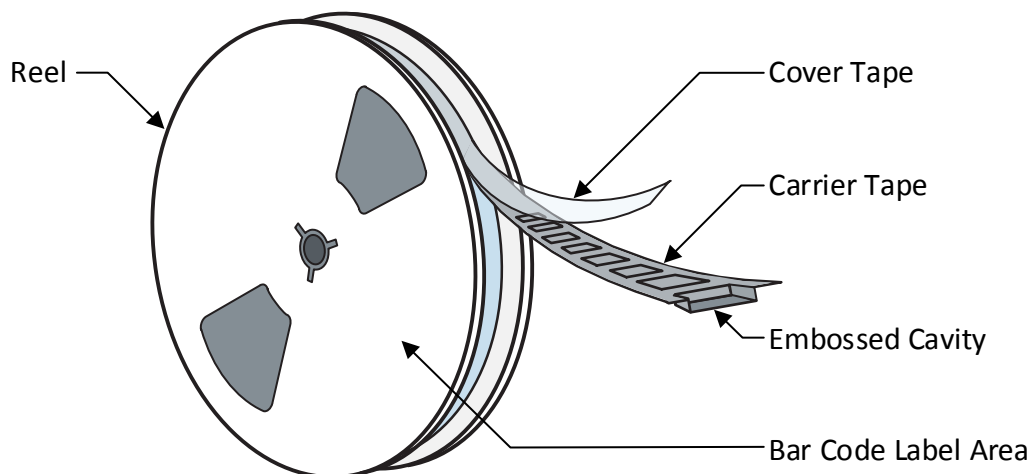


Figure 1: Reel

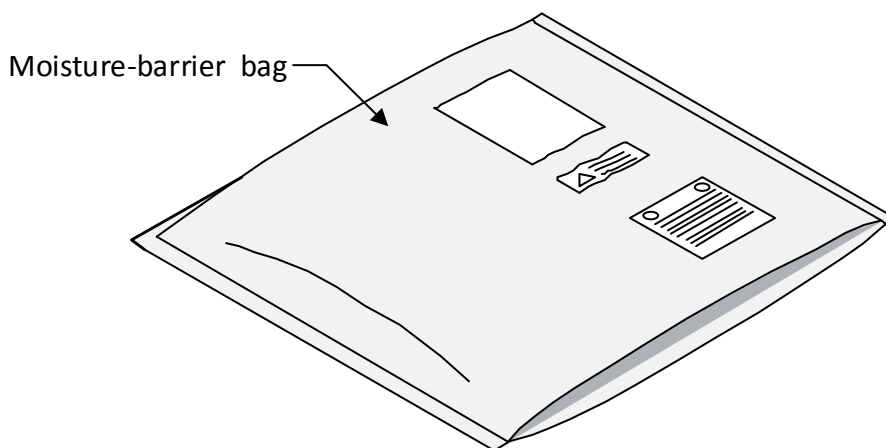


Figure 2: Single reel in dry-pack

### 3 Carrier Tape

Carrier tape is widely used for presenting devices to pick-and-place machines for automatic placement onto printed circuit boards.

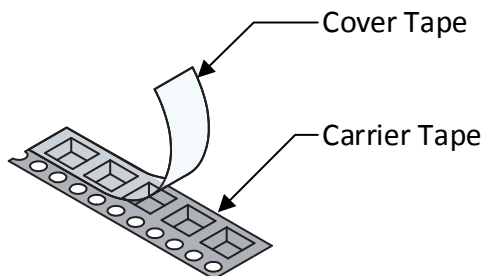
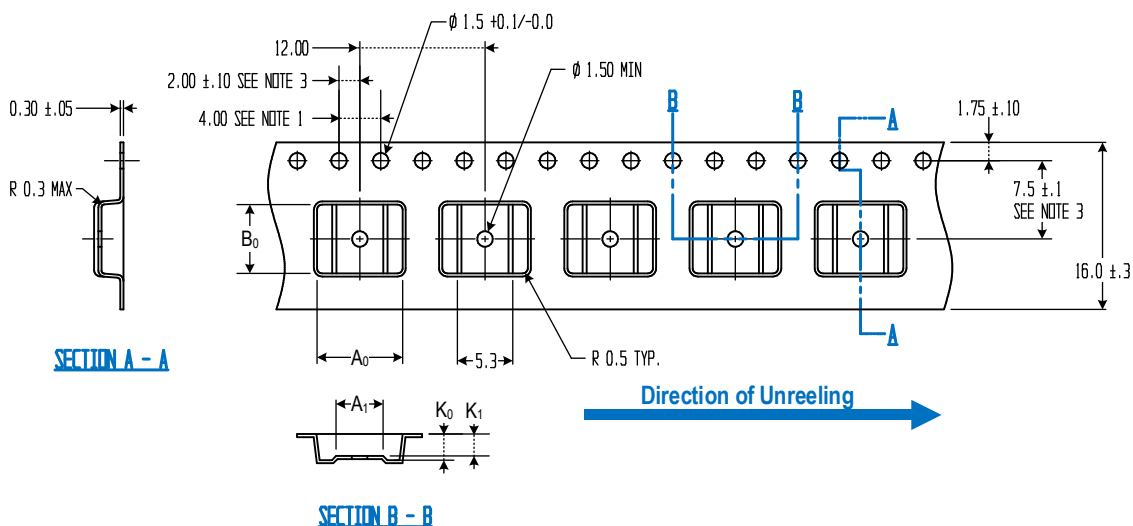


Figure 3: Carrier tape

Figure 8 shows the basic outline and dimension labels of the carrier tape. Typically, the carrier tape is constructed from a polystyrene (PS) or PS-laminate film.

#### 3.1 SSOP-16



A0	8.20
A1	4.50
B0	6.60
K0	2.50
K1	2.10

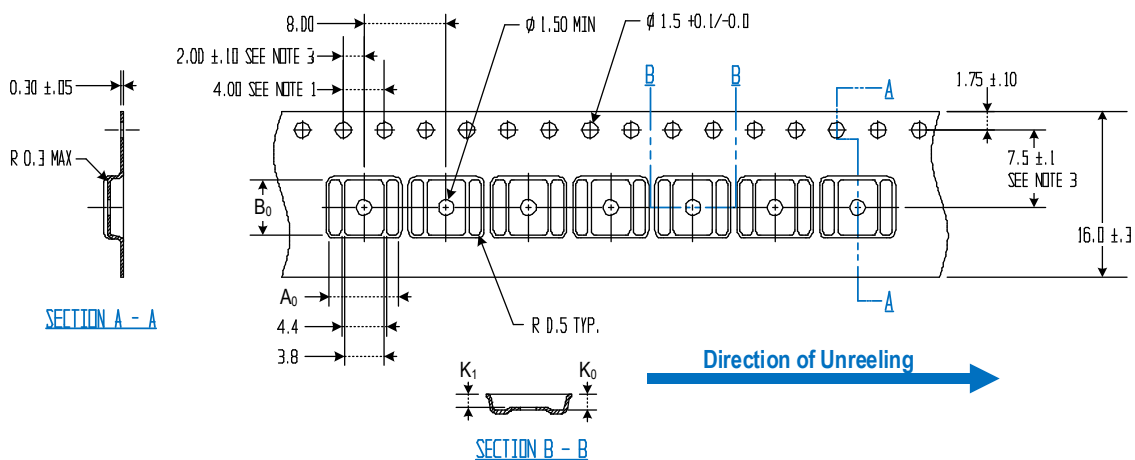
Note1: sprocket hole pitch cumulative tolerance ±0.2

Note2: Camber in Compliance with EIA 481

Note3: pocket position relative to sprocket hole measured as true position of pocket, not pocket hole

Note4: all dimensions in mm

### 3.2 TSSOP-14 (TSSOP-16)



A<sub>0</sub> 6.80

B<sub>0</sub> 5.40

K<sub>0</sub> 1.60

K<sub>1</sub> 1.30

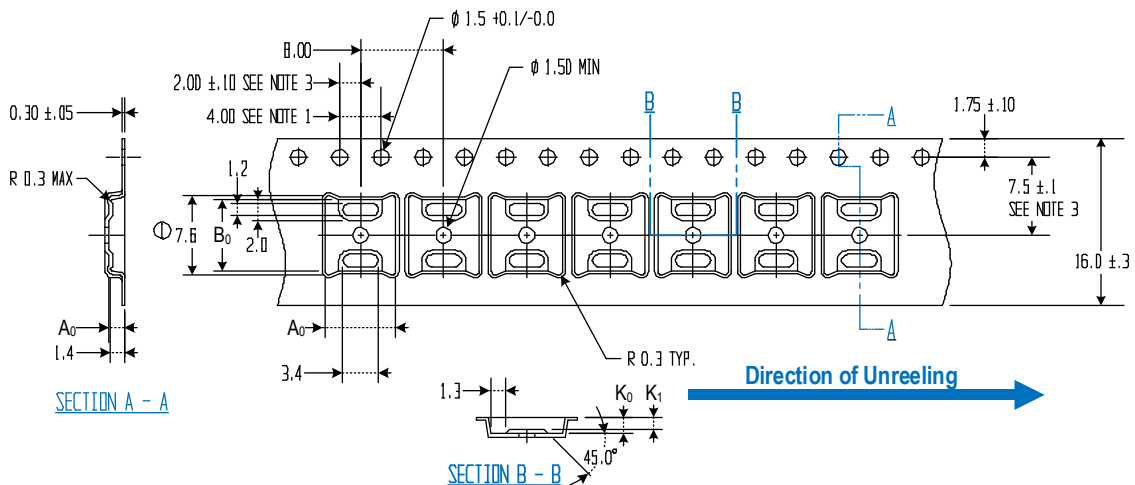
Note1: sprocket hole pitch cumulative tolerance ±0.2

Note2: Camber in Compliance with EIA 481

Note3: pocket position relative to sprocket hole measured as true position of pocket, not pocket hole

Note4: all dimensions in mm

### 3.3 TSSOP-20



A<sub>0</sub> 6.80

B<sub>0</sub> 6.90

K<sub>0</sub> 1.60

K<sub>1</sub> 1.20

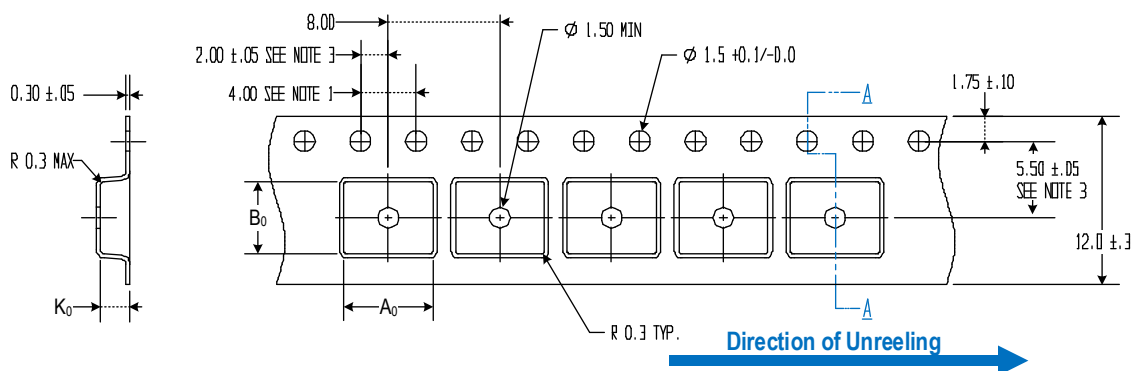
Note1: sprocket hole pitch cumulative tolerance ±0.2

Note2: Camber in Compliance with EIA 481

Note3: pocket position relative to sprocket hole measured as true position of pocket, not pocket hole

Note4: all dimensions in mm

### 3.4 SOIC-8



SECTION A - A

A0 6.40

B0 5.20

K0 2.10

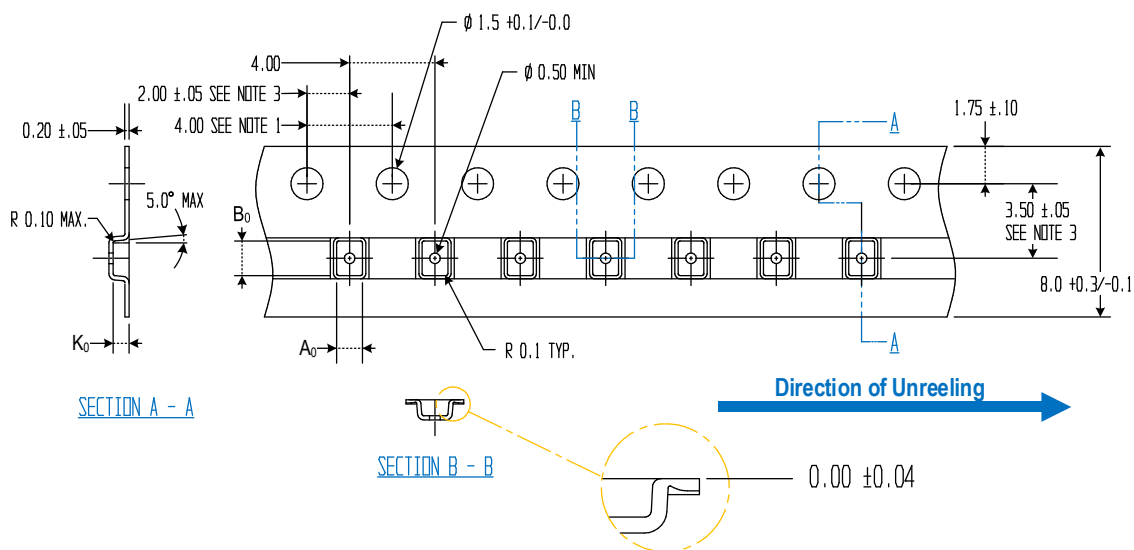
Note1: sprocket hole pitch cumulative tolerance ±0.2

Note2: Camber in Compliance with EIA 481

Note3: pocket position relative to sprocket hole measured as true position of pocket, not pocket hole

Note4: all dimensions in mm

### 3.5 WL-CSP (1.425 x 1.065)



SECTION A - A

A0 1.21 ±0.05

B0 1.62 ±0.05

K0 0.75 ±0.05

Note1: sprocket hole pitch cumulative tolerance ±0.2

Note2: Camber in Compliance with EIA 481

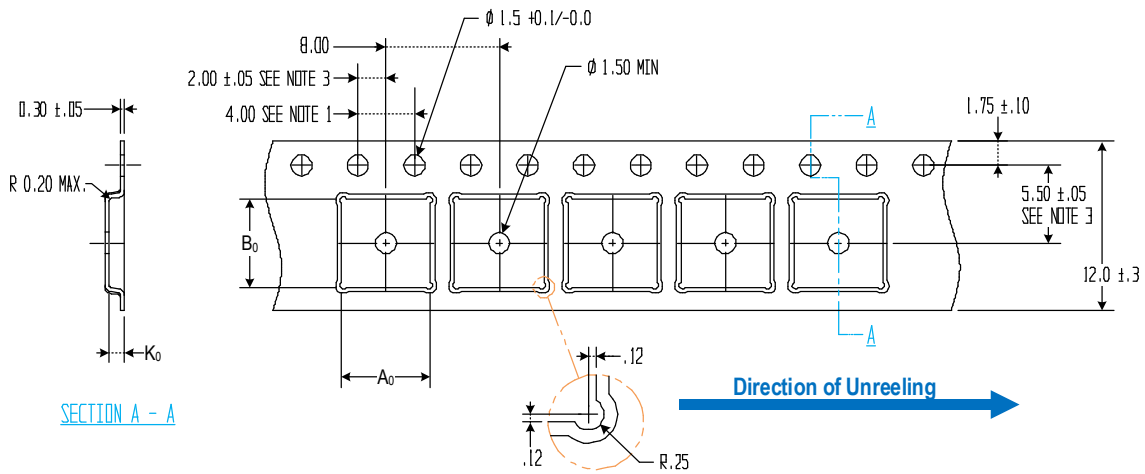
Note3: pocket position relative to sprocket hole measured as true position of pocket, not pocket hole

Note4: A0 and B0 are calculated on a plane at a distance "R" above the bottom of the pocket.

Note5: all dimensions in mm



### 3.6 MLF-16 6x6 / MLF-40 7x7



A0 6.30

B0 6.30

K0 1.10

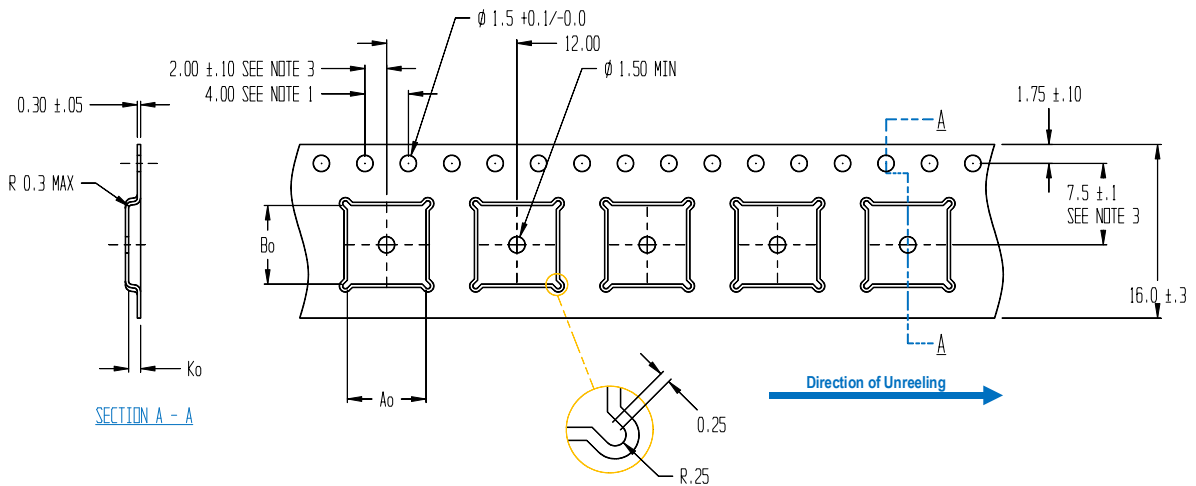
Note1: sprocket hole pitch cumulative tolerance  $\pm 0.2$

Note2: Camber in Compliance with EIA 481

Note3: pocket position relative to sprocket hole measured as true position of pocket, not pocket hole

Note4: all dimensions in mm

### 3.7 MLF-32 7x7



A0 7.25

B0 7.25

K0 1.10

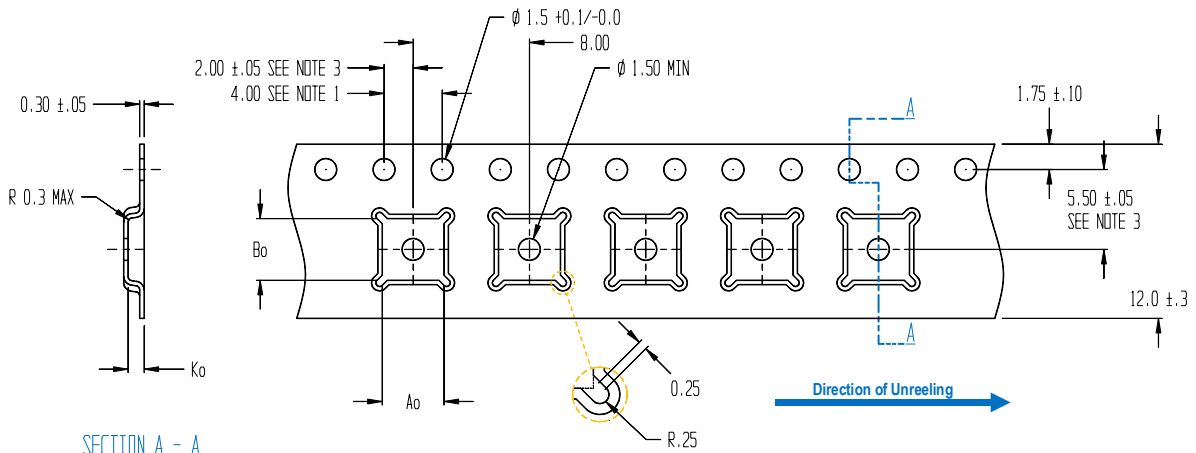
Note1: sprocket hole pitch cumulative tolerance  $\pm 0.2$

Note2: Camber in Compliance with EIA 481

Note3: pocket position relative to sprocket hole measured as true position of pocket, not pocket hole

Note4: all dimensions in mm

### 3.8 QFN-16 4x4



SECTION A - A

A0 4.25

B0 4.25

K0 1.10

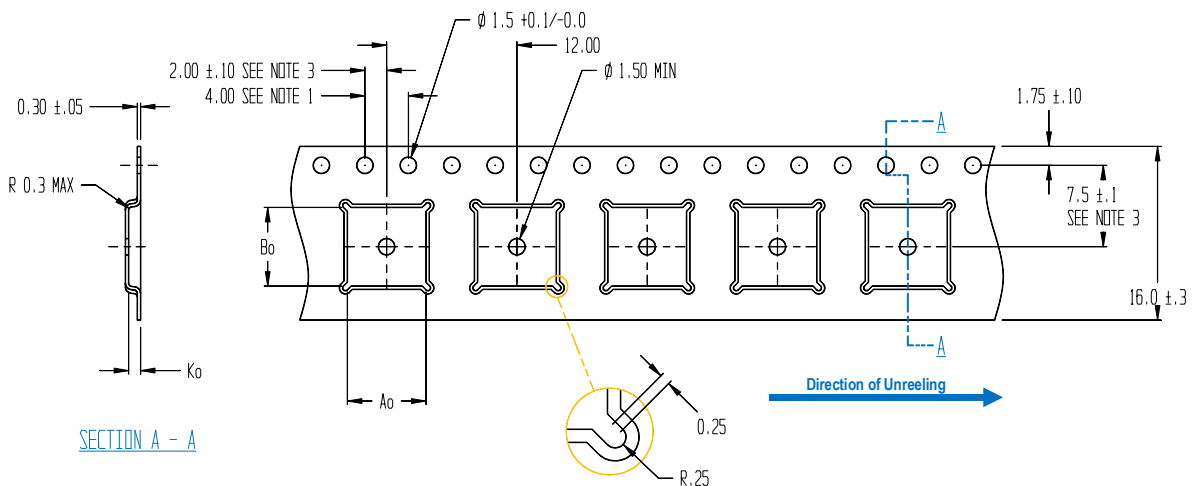
Note1: sprocket hole pitch cumulative tolerance  $\pm 0.2$

Note2: Camber in Compliance with EIA 481

Note3: pocket position relative to sprocket hole measured as true position of pocket, not pocket hole

Note4: all dimensions in mm

### 3.9 QFN-32 7x7



SECTION A - A

A0 7.25

B0 7.25

K0 1.10

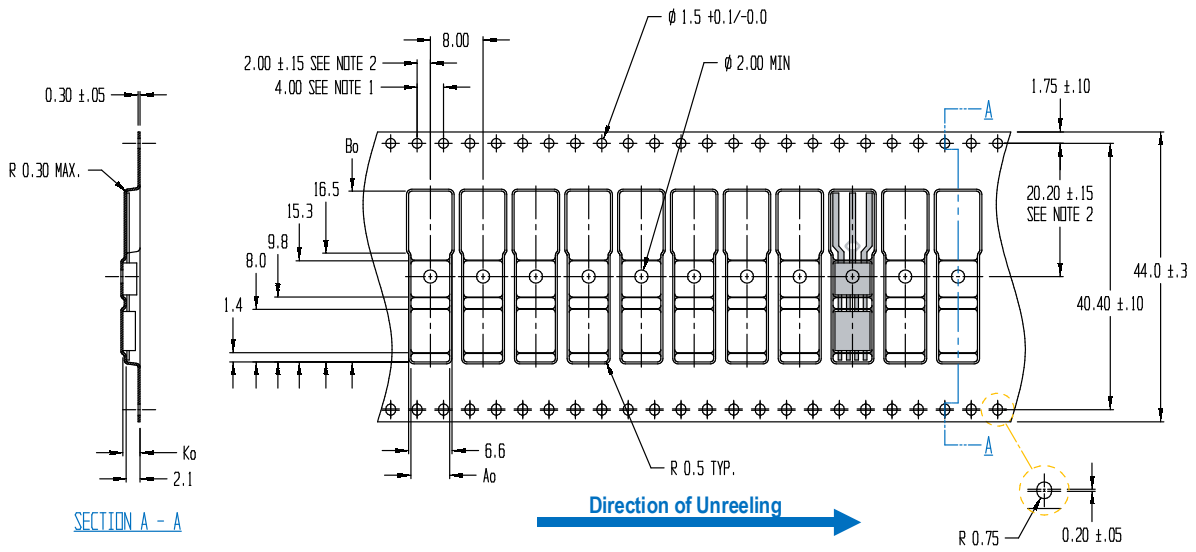
Note1: sprocket hole pitch cumulative tolerance  $\pm 0.2$

Note2: Camber in Compliance with EIA 481

Note3: pocket position relative to sprocket hole measured as true position of pocket, not pocket hole

Note4: all dimensions in mm

### 3.10 SIP



A0	5.9
B0	25.9
K0	2.6

Note1: sprocket hole pitch cumulative tolerance  $\pm 0.2$

Note2: pocket position relative to sprocket hole measured as true position of pocket, not pocket hole

Note3: A0 and B0 are calculated on a plane at a distance "R" above the bottom of the pocket.

Note4: all dimensions in mm

## 4 Reel Types

### 4.1 7"



Figure 4: reel 7"

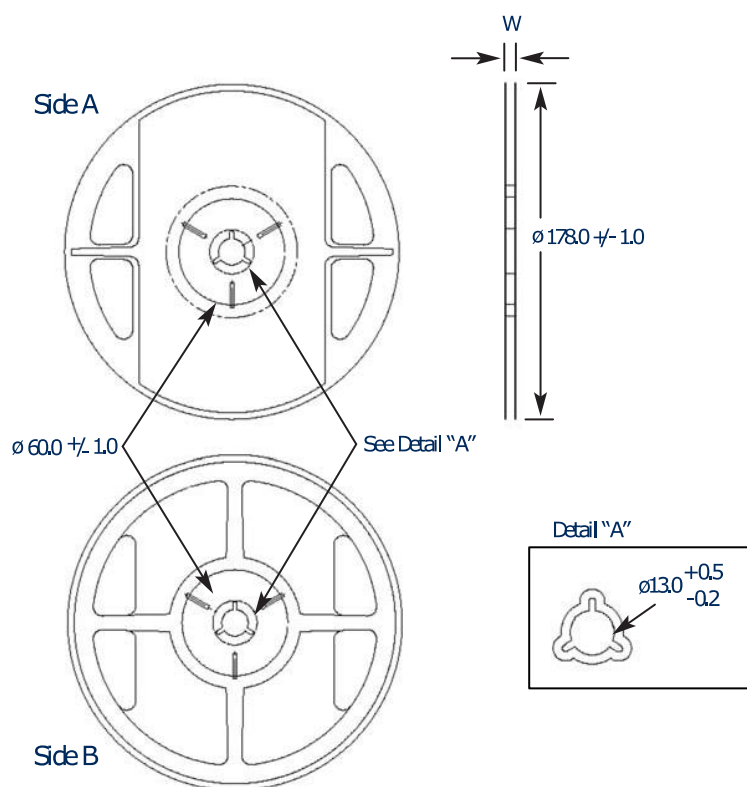


Figure 5: 7" reel

Note1: All dimensions in mm

Note2: 16mm reel's flanges are identical (Side A)

#### Hub standard width (W)

8mm

12mm

16mm

## 4.2 13"



Figure 6: reels 13"

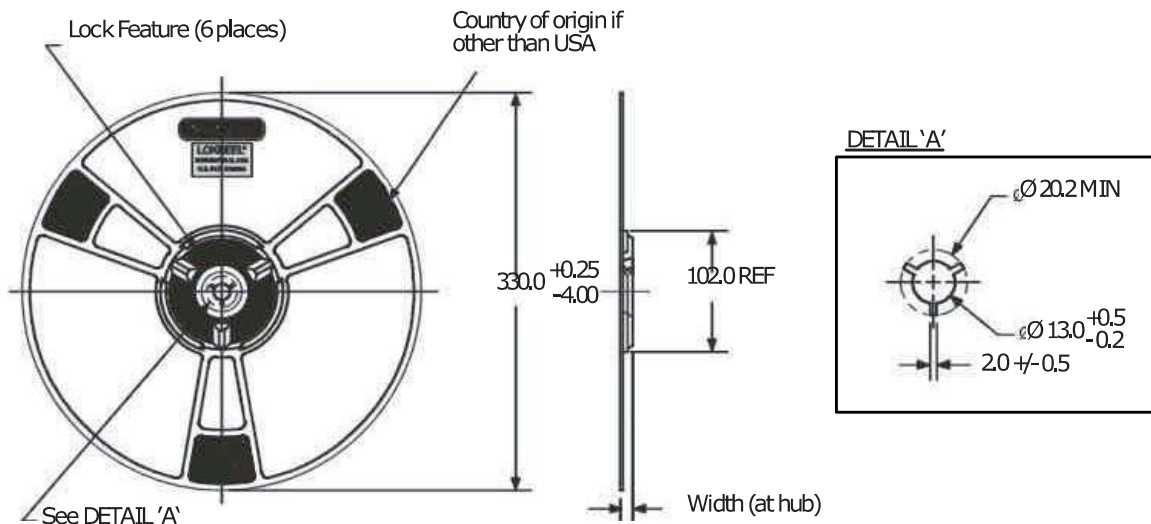


Figure 7: 13" reel (4-inch hub)

Note1: All dimensions in mm

Available Hub standard width	combination
8mm	4mm and 4mm
12mm	4mm and 8mm
16mm	8mm and 8mm
24mm	8mm and 16mm
44mm	16mm and 28mm

## 5 Dry-pack

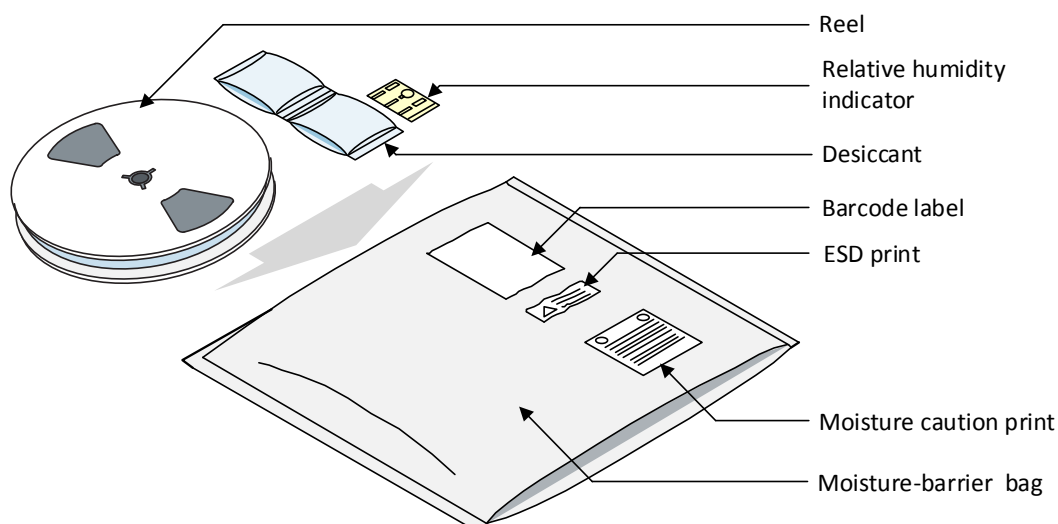
### 5.1 Moisture Sensitivity

Plastic IC packages absorb moisture from the surrounding environment. This is a typical characteristic of the materials (mold compound and die attach) used in the construction of plastic packages. The moisture inside the package increases or decreases to reach the relative humidity (RH) of the surrounding environment.

Moisture inside the package turns into steam when the package is exposed to the vapor phase/infrared reflow and/or wave-soldering processes that are common in the fabrication of printed circuit boards (PCBs). The resulting steam and vapor pressure can cause cracking of the package, a phenomenon called popcorning.

### 5.2 Dry packaging

Dry packing consists of baking the packages to reduce moisture to a level not to exceed 0.05% by weight. Then, the units are placed in a moisture-barrier bag, along with desiccant, to keep the moisture inside the bag to a level <20% RH. Each product is labeled as moisture sensitive, outlining the necessary precautions for handling the product.



## 6 Contact Information

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## 8 Revision Information

Changes from previous version to current revision 1-00 (2016-Apr-27)	Page
Initial version 1-00	

**Note:** Page numbers for the previous version may differ from page numbers in the current revision.  
Correction of typographical errors is not explicitly mentioned.