



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.

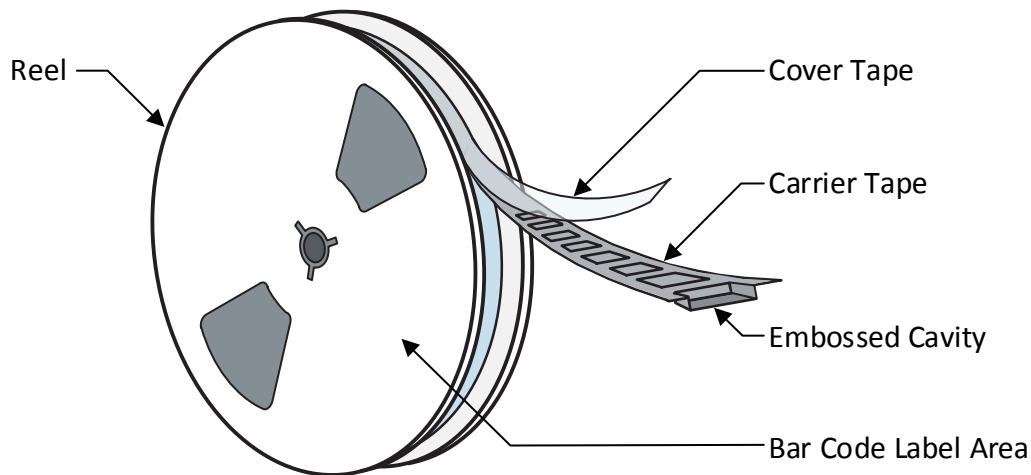


Figure 1: Reel

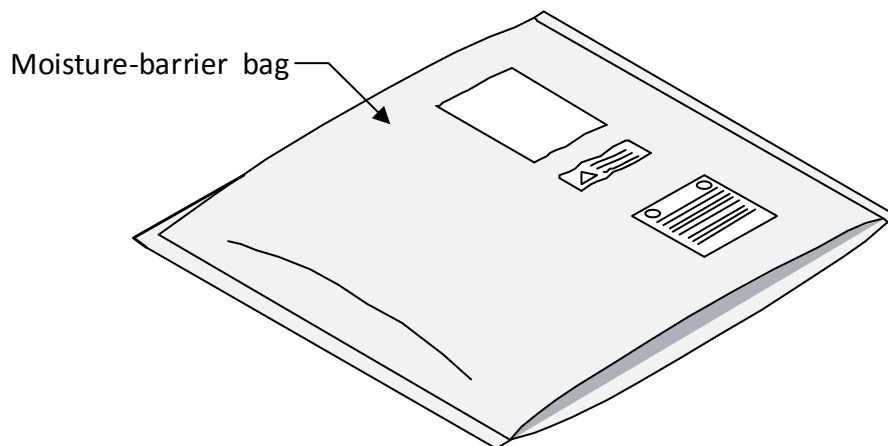


Figure 2: Single reel in dry-pack

3 Carrier Tape

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

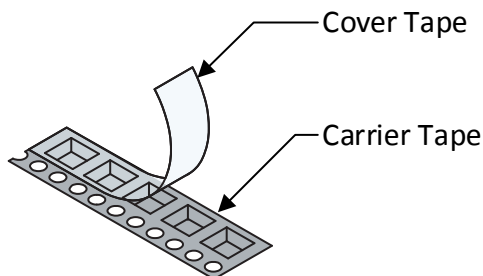
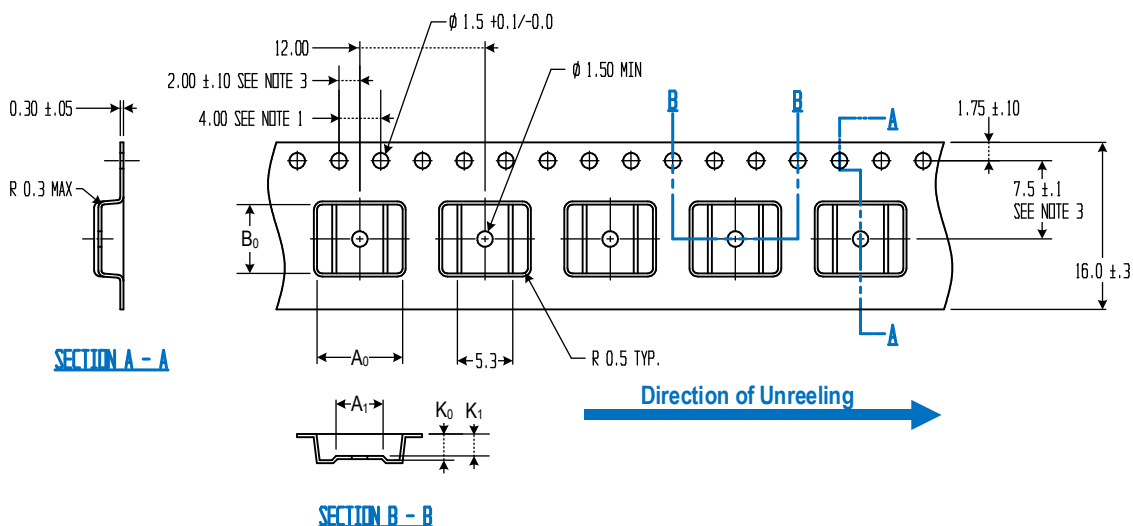


Figure 3: Carrier tape

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 |

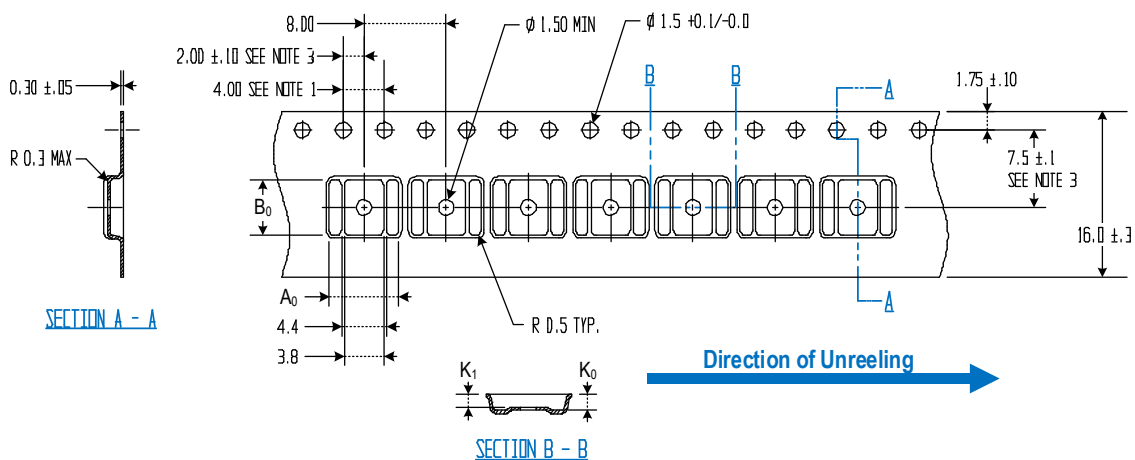
Note1: sprocket hole pitch cumulative tolerance ± 0.2

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)



A₀ 6.80

B₀ 5.40

K₀ 1.60

K₁ 1.30

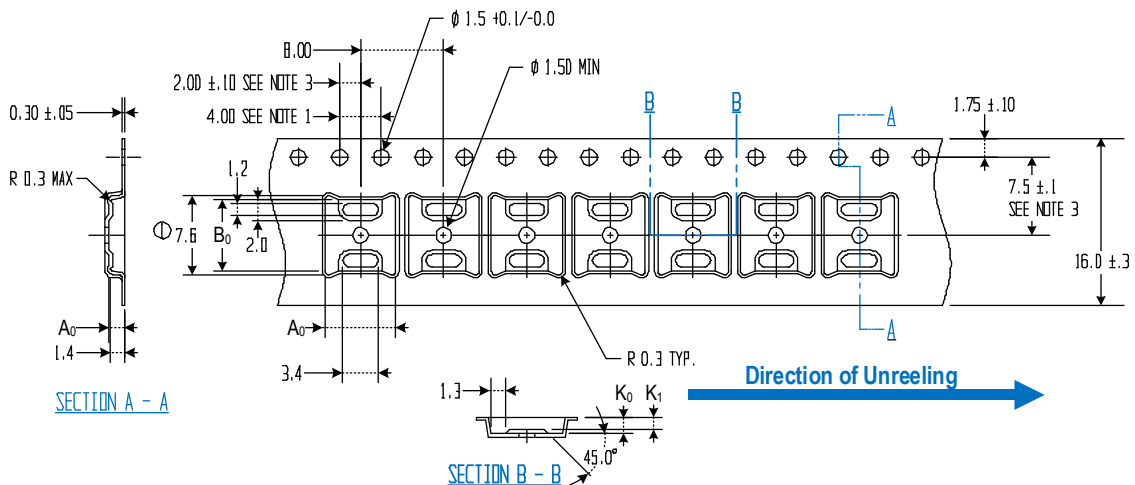
Note1: sprocket hole pitch cumulative tolerance ±0.2

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



A₀ 6.80

B₀ 6.90

K₀ 1.60

K₁ 1.20

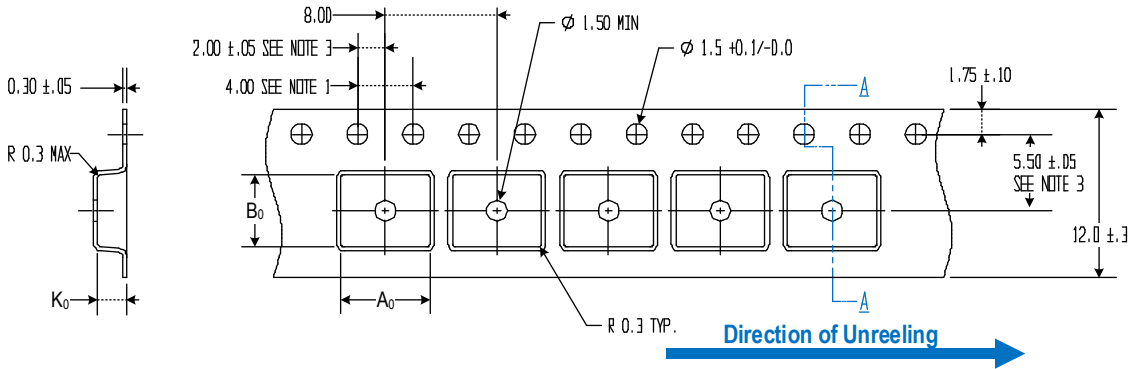
Note1: sprocket hole pitch cumulative tolerance ±0.2

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

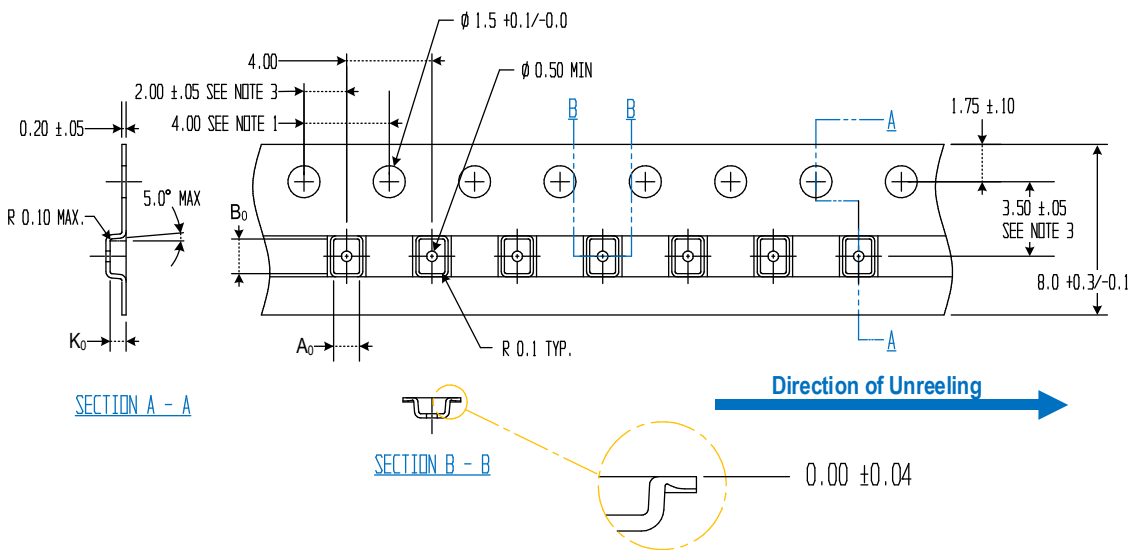
Note1: sprocket hole pitch cumulative tolerance ± 0.2

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

SECTION B - B

A0 1.21 ± 0.05

B0 1.62 ± 0.05

K0 0.75 ± 0.05

Note1: sprocket hole pitch cumulative tolerance ± 0.2

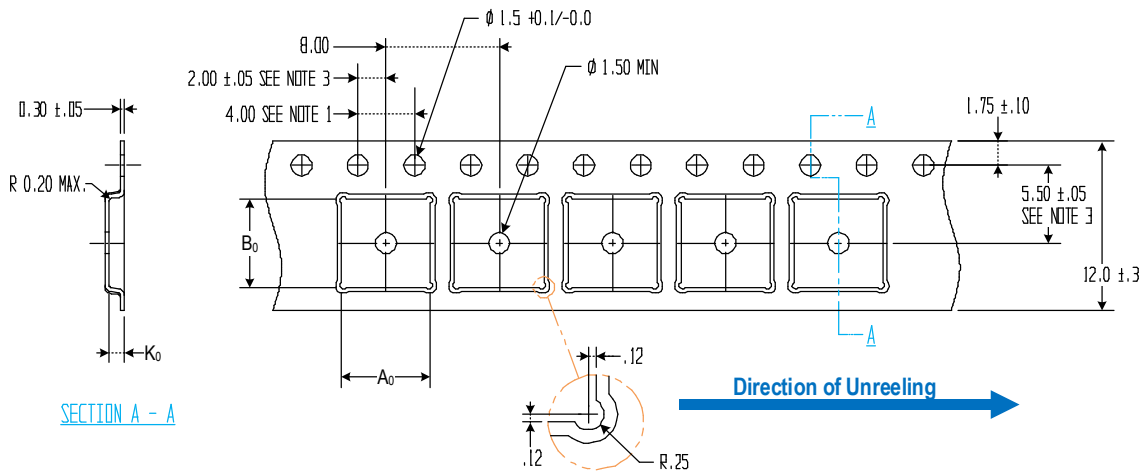
Note2: Camber in Compliance with EIA 481

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

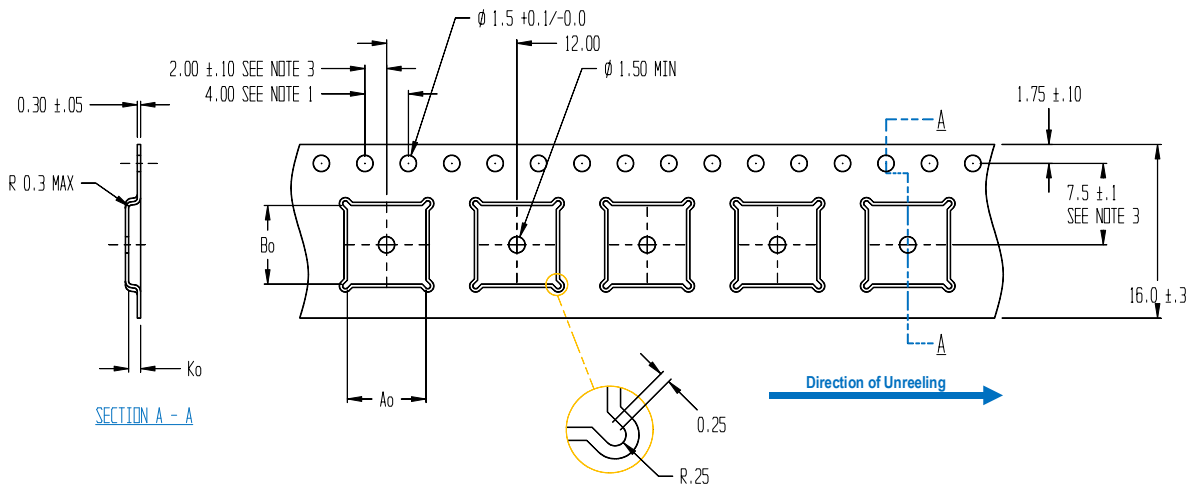
Note1: sprocket hole pitch cumulative tolerance ± 0.2

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

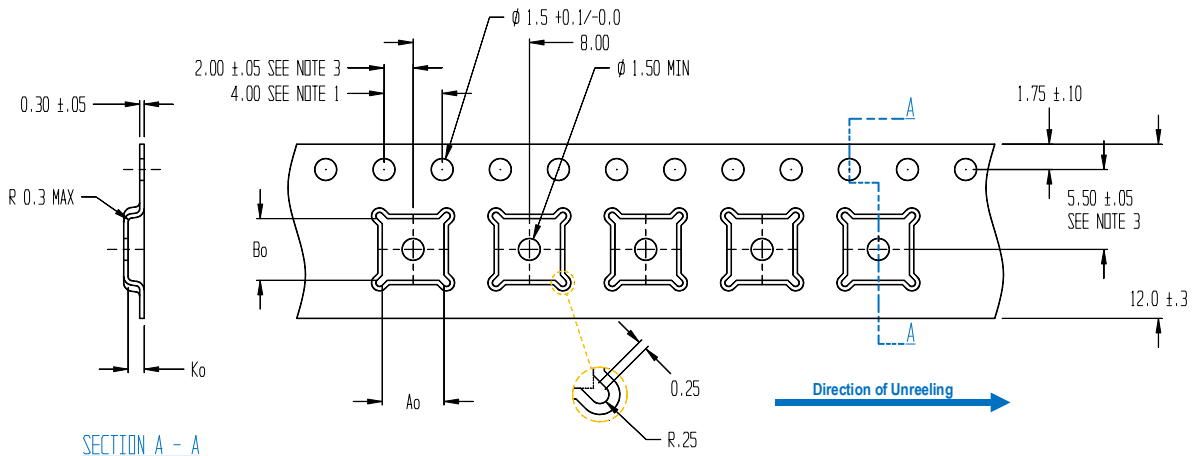
Note1: sprocket hole pitch cumulative tolerance ± 0.2

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

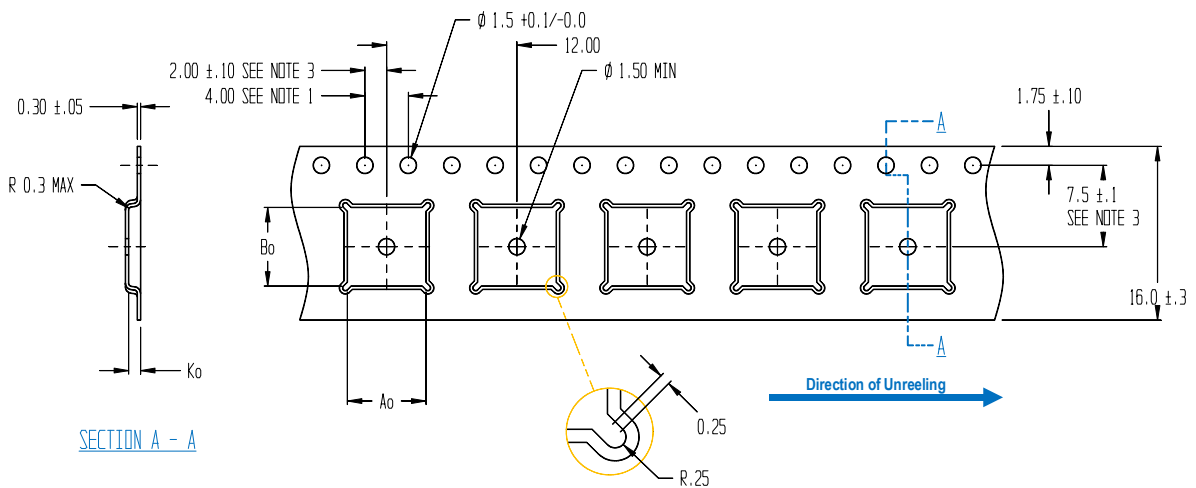
Note1: sprocket hole pitch cumulative tolerance ± 0.2

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

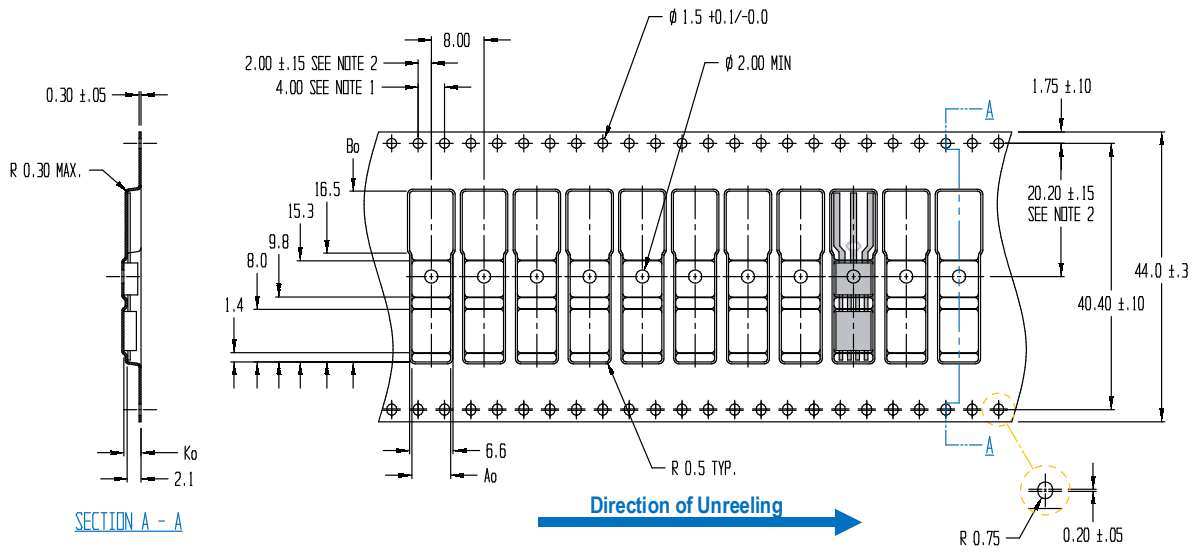
Note1: sprocket hole pitch cumulative tolerance ± 0.2

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 ± 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"

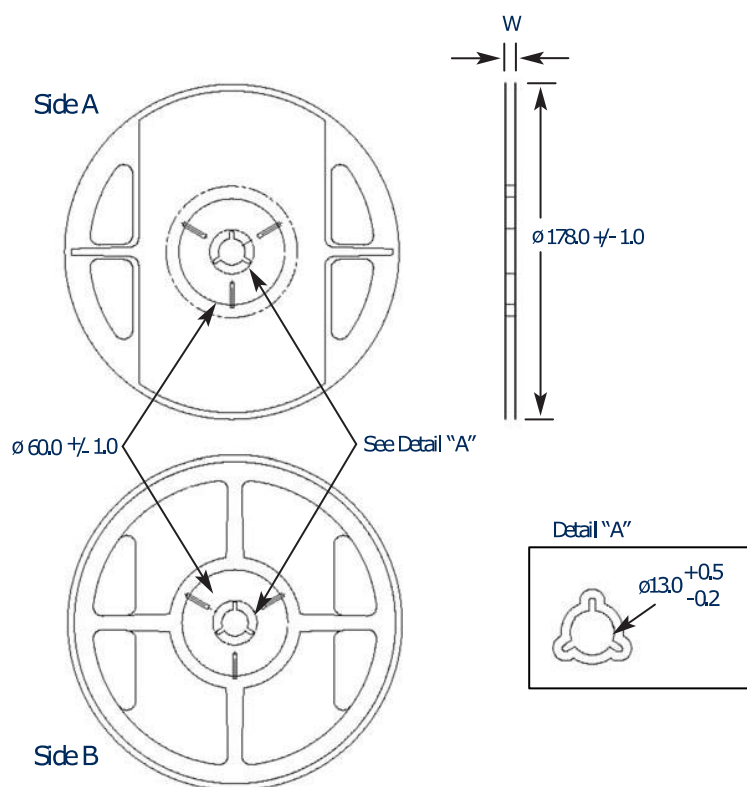


Figure 5: 7" reel

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"

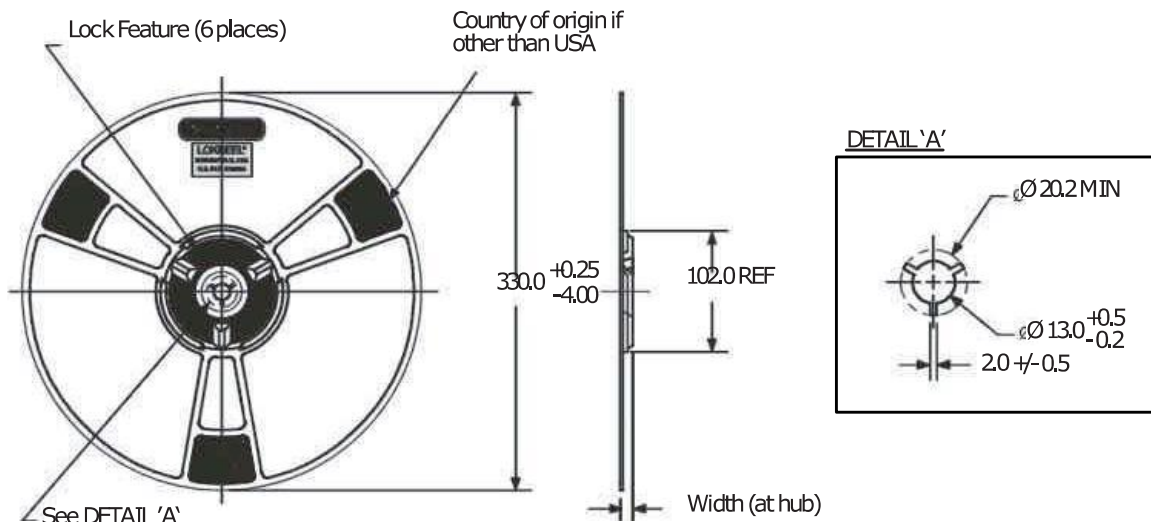


Figure 7: 13" reel (4-inch hub)

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

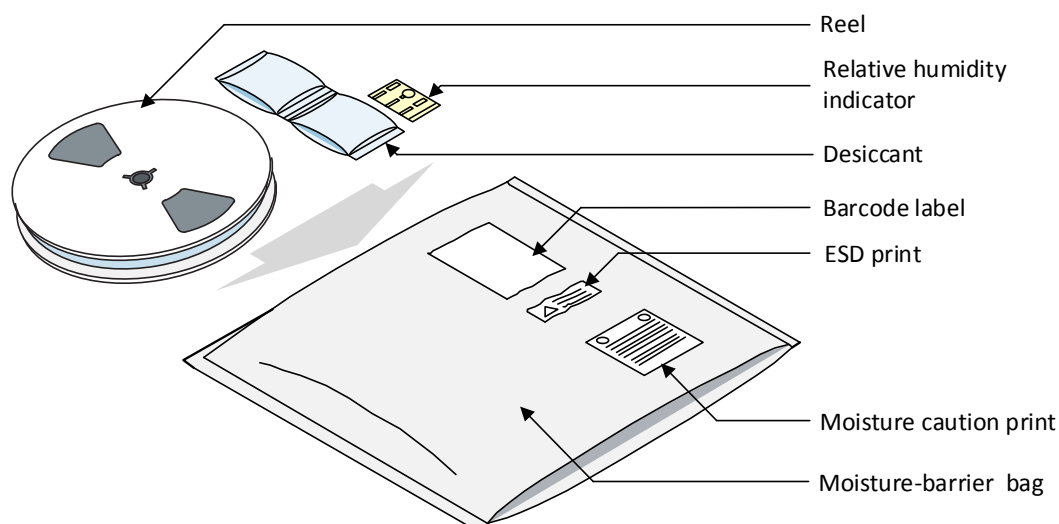
5.1 Moisture Sensitivity

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.