

# Packaging of Chip Components



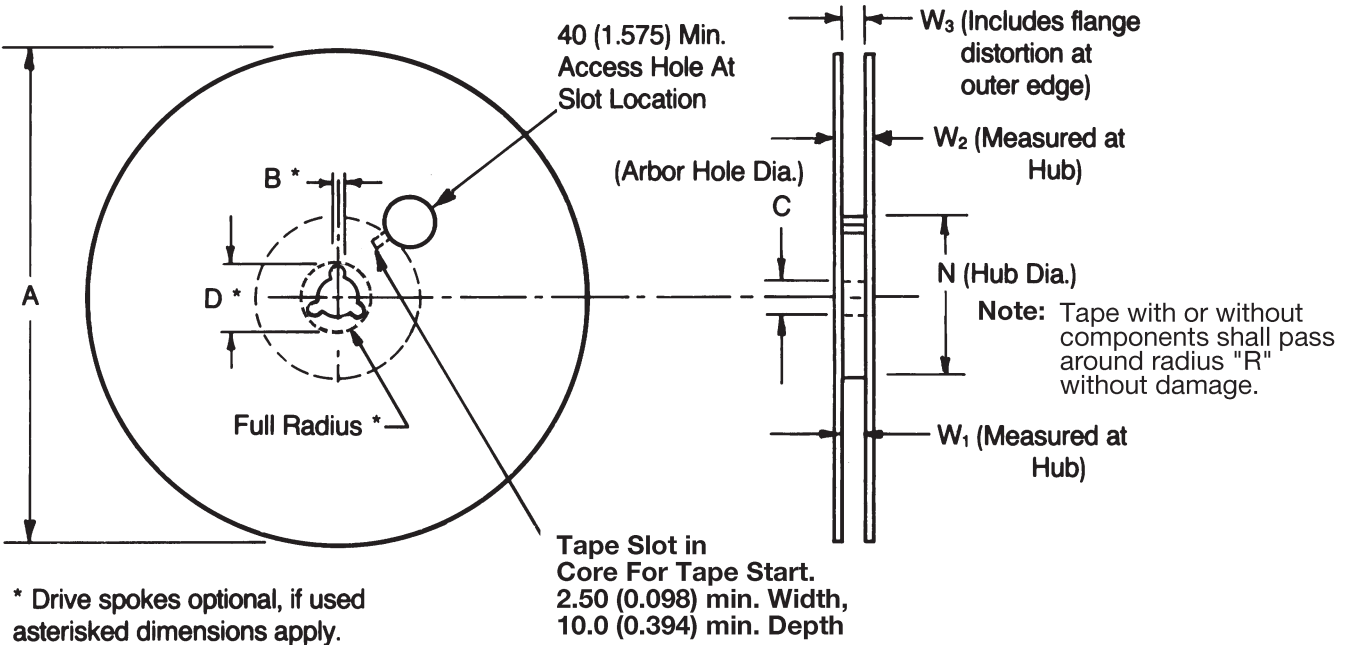
## Automatic Insertion Packaging

### TAPE & REEL QUANTITIES

All tape and reel specifications are in compliance with RS481.

|                           | 8mm                                                                         | 12mm   |                                                  |
|---------------------------|-----------------------------------------------------------------------------|--------|--------------------------------------------------|
| Paper or Embossed Carrier | 0612, 0508, 0805, 1206, 1210                                                |        |                                                  |
| Embossed Only             |                                                                             | 1808   | 1812, 1825<br>2220, 2225                         |
| Paper Only                | 0201, 0306, 0402, 0603                                                      |        |                                                  |
| Qty. per Reel/7" Reel     | 2,000, 3,000 or 4,000, 10,000, 15,000<br>Contact factory for exact quantity | 3,000  | 500, 1,000<br>Contact factory for exact quantity |
| Qty. per Reel/13" Reel    | 5,000, 10,000, 50,000<br>Contact factory for exact quantity                 | 10,000 | 4,000                                            |

### REEL DIMENSIONS



| Tape Size <sup>(1)</sup> | A Max.          | B* Min.        | C                                                                                      | D* Min.         | N Min.          | W <sub>1</sub>                                                                     | W <sub>2</sub> Max. | W <sub>3</sub>                               |
|--------------------------|-----------------|----------------|----------------------------------------------------------------------------------------|-----------------|-----------------|------------------------------------------------------------------------------------|---------------------|----------------------------------------------|
| 8mm                      | 330<br>(12.992) | 1.5<br>(0.059) | 13.0 <sup>+0.50</sup> <sub>-0.20</sub><br>(0.512 <sup>+0.020</sup> <sub>-0.008</sub> ) | 20.2<br>(0.795) | 50.0<br>(1.969) | 8.40 <sup>+1.5</sup> <sub>-0.8</sub><br>(0.331 <sup>+0.059</sup> <sub>-0.0</sub> ) | 14.4<br>(0.567)     | 7.90 Min.<br>(0.311)<br>10.9 Max.<br>(0.429) |
| 12mm                     |                 |                |                                                                                        |                 |                 | 12.4 <sup>+2.0</sup> <sub>-0.0</sub><br>(0.488 <sup>+0.079</sup> <sub>-0.0</sub> ) |                     | 11.9 Min.<br>(0.469)<br>15.4 Max.<br>(0.607) |

Metric dimensions will govern.

English measurements rounded and for reference only.

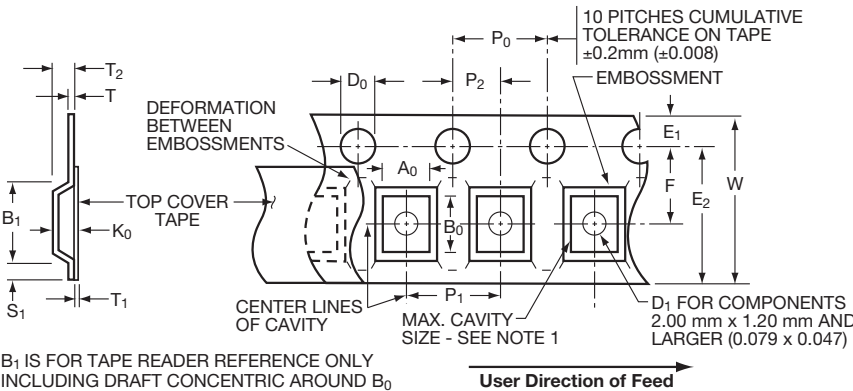
(1) For tape sizes 16mm and 24mm (used with chip size 3640) consult EIA RS-481 latest revision.



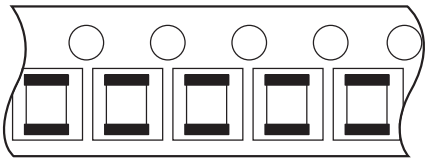
# Embossed Carrier Configuration



## 8 & 12mm Tape Only



### Chip Orientation



## 8 & 12mm Embossed Tape Metric Dimensions Will Govern

### CONSTANT DIMENSIONS

| Tape Size    | D <sub>0</sub>                                                                                                                            | E                                       | P <sub>0</sub>                         | P <sub>2</sub>                         | S <sub>1</sub> Min. | T Max.          | T <sub>1</sub>          |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------|----------------------------------------|---------------------|-----------------|-------------------------|
| 8mm and 12mm | 1.50 $\begin{smallmatrix} +0.10 \\ -0.0 \\ +0.004 \end{smallmatrix}$<br>(0.059 $\begin{smallmatrix} +0.004 \\ -0.000 \end{smallmatrix}$ ) | 1.75 $\pm 0.10$<br>(0.069 $\pm 0.004$ ) | 4.0 $\pm 0.10$<br>(0.157 $\pm 0.004$ ) | 2.0 $\pm 0.05$<br>(0.079 $\pm 0.002$ ) | 0.60<br>(0.024)     | 0.60<br>(0.024) | 0.10<br>(0.004)<br>Max. |

### VARIABLE DIMENSIONS

| Tape Size            | B <sub>1</sub> Max. | D <sub>1</sub> Min. | E <sub>2</sub> Min. | F                                       | P <sub>1</sub><br>See Note 5            | R Min.<br>See Note 2 | T <sub>2</sub>       | W Max.          | A <sub>0</sub> B <sub>0</sub> K <sub>0</sub> |
|----------------------|---------------------|---------------------|---------------------|-----------------------------------------|-----------------------------------------|----------------------|----------------------|-----------------|----------------------------------------------|
| 8mm                  | 4.35<br>(0.171)     | 1.00<br>(0.039)     | 6.25<br>(0.246)     | 3.50 $\pm 0.05$<br>(0.138 $\pm 0.002$ ) | 4.00 $\pm 0.10$<br>(0.157 $\pm 0.004$ ) | 25.0<br>(0.984)      | 2.50 Max.<br>(0.098) | 8.30<br>(0.327) | See Note 1                                   |
| 12mm                 | 8.20<br>(0.323)     | 1.50<br>(0.059)     | 10.25<br>(0.404)    | 5.50 $\pm 0.05$<br>(0.217 $\pm 0.002$ ) | 4.00 $\pm 0.10$<br>(0.157 $\pm 0.004$ ) | 30.0<br>(1.181)      | 6.50 Max.<br>(0.256) | 12.3<br>(0.484) | See Note 1                                   |
| 8mm<br>1/2 Pitch     | 4.35<br>(0.171)     | 1.00<br>(0.039)     | 6.25<br>(0.246)     | 3.50 $\pm 0.05$<br>(0.138 $\pm 0.002$ ) | 2.00 $\pm 0.10$<br>(0.079 $\pm 0.004$ ) | 25.0<br>(0.984)      | 2.50 Max.<br>(0.098) | 8.30<br>(0.327) | See Note 1                                   |
| 12mm<br>Double Pitch | 8.20<br>(0.323)     | 1.50<br>(0.059)     | 10.25<br>(0.404)    | 5.50 $\pm 0.05$<br>(0.217 $\pm 0.002$ ) | 8.00 $\pm 0.10$<br>(0.315 $\pm 0.004$ ) | 30.0<br>(1.181)      | 6.50 Max.<br>(0.256) | 12.3<br>(0.484) | See Note 1                                   |

#### NOTES:

1. The cavity defined by A<sub>0</sub>, B<sub>0</sub>, and K<sub>0</sub> shall be configured to provide the following:

Surround the component with sufficient clearance such that:

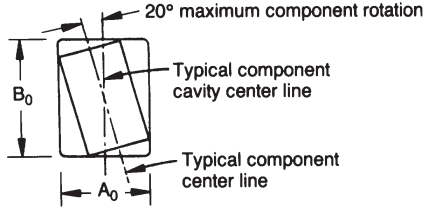
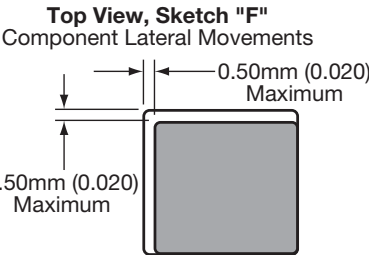
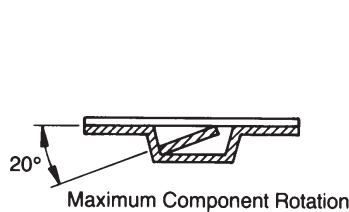
- the component does not protrude beyond the sealing plane of the cover tape.
- the component can be removed from the cavity in a vertical direction without mechanical restriction, after the cover tape has been removed.
- rotation of the component is limited to 20° maximum (see Sketches D & E).
- lateral movement of the component is restricted to 0.5mm maximum (see Sketch F).

2. Tape with or without components shall pass around radius "R" without damage.

3. Bar code labeling (if required) shall be on the side of the reel opposite the round sprocket holes. Refer to EIA-556.

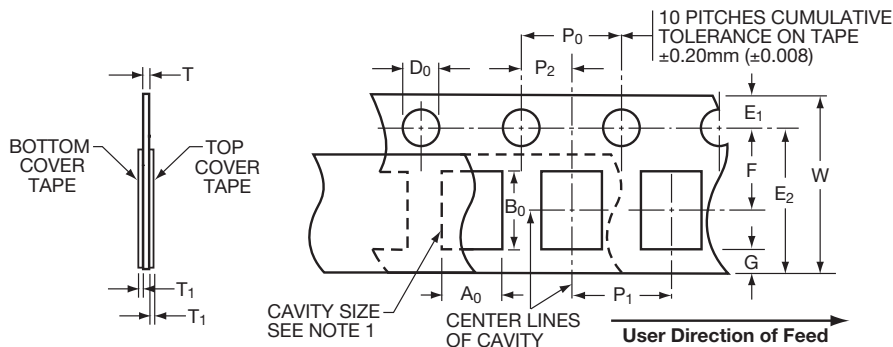
4. B<sub>1</sub> dimension is a reference dimension for tape feeder clearance only.

5. If P<sub>1</sub> = 2.0mm, the tape may not properly index in all tape feeders.



# Paper Carrier Configuration

8 & 12mm Tape Only



## 8 & 12mm Paper Tape Metric Dimensions Will Govern

### CONSTANT DIMENSIONS

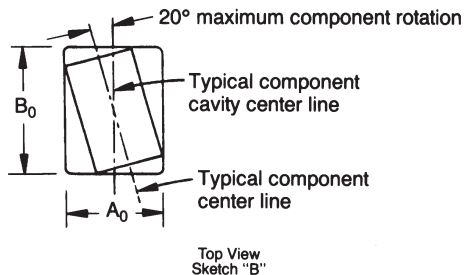
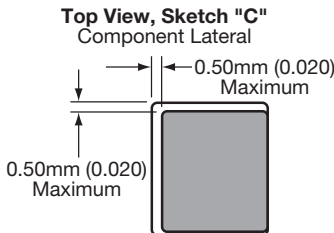
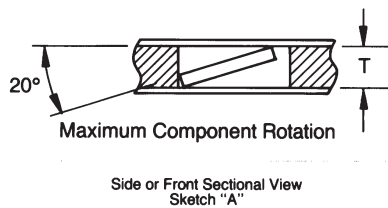
| Tape Size    | $D_0$                                           | $E$                                     | $P_0$                                   | $P_2$                                   | $T_1$                     | G. Min.                   | R Min.                               |
|--------------|-------------------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|---------------------------|---------------------------|--------------------------------------|
| 8mm and 12mm | $1.50^{+0.10}_{-0.004}$<br>(0.059 $\pm 0.004$ ) | $1.75 \pm 0.10$<br>(0.069 $\pm 0.004$ ) | $4.00 \pm 0.10$<br>(0.157 $\pm 0.004$ ) | $2.00 \pm 0.05$<br>(0.079 $\pm 0.002$ ) | $0.10$<br>(0.004)<br>Max. | $0.75$<br>(0.030)<br>Min. | $25.0$ (0.984)<br>See Note 2<br>Min. |

### VARIABLE DIMENSIONS

| Tape Size               | $P_1$<br>See Note 4                      | $E_2$ Min.       | F                                       | W                                              | $A_0 B_0$  | T                                                                                                                        |
|-------------------------|------------------------------------------|------------------|-----------------------------------------|------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------|
| 8mm                     | $4.00 \pm 0.10$<br>(0.157 $\pm 0.004$ )  | 6.25<br>(0.246)  | $3.50 \pm 0.05$<br>(0.138 $\pm 0.002$ ) | $8.00^{+0.30}_{-0.10}$<br>(0.315 $\pm 0.012$ ) | See Note 1 | 1.10mm<br>(0.043) Max.<br>for Paper Base<br>Tape and<br><br>1.60mm<br>(0.063) Max.<br>for Non-Paper<br>Base Compositions |
| 12mm                    | $4.00 \pm 0.010$<br>(0.157 $\pm 0.004$ ) | 10.25<br>(0.404) | $5.50 \pm 0.05$<br>(0.217 $\pm 0.002$ ) | $12.0 \pm 0.30$<br>(0.472 $\pm 0.012$ )        |            |                                                                                                                          |
| 8mm<br>1/2 Pitch        | $2.00 \pm 0.05$<br>(0.079 $\pm 0.002$ )  | 6.25<br>(0.246)  | $3.50 \pm 0.05$<br>(0.138 $\pm 0.002$ ) | $8.00^{+0.30}_{-0.10}$<br>(0.315 $\pm 0.012$ ) |            |                                                                                                                          |
| 12mm<br>Double<br>Pitch | $8.00 \pm 0.10$<br>(0.315 $\pm 0.004$ )  | 10.25<br>(0.404) | $5.50 \pm 0.05$<br>(0.217 $\pm 0.002$ ) | $12.0 \pm 0.30$<br>(0.472 $\pm 0.012$ )        |            |                                                                                                                          |

#### NOTES:

- The cavity defined by  $A_0$ ,  $B_0$ , and  $T$  shall be configured to provide sufficient clearance surrounding the component so that:
  - the component does not protrude beyond either surface of the carrier tape;
  - the component can be removed from the cavity in a vertical direction without mechanical restriction after the top cover tape has been removed;
  - rotation of the component is limited to  $20^\circ$  maximum (see Sketches A & B);
  - lateral movement of the component is restricted to 0.5mm maximum (see Sketch C).
- Tape with or without components shall pass around radius "R" without damage.
- Bar code labeling (if required) shall be on the side of the reel opposite the sprocket holes. Refer to EIA-556.
- If  $P_1 = 2.0\text{mm}$ , the tape may not properly index in all tape feeders.



## Bar Code Labeling Standard

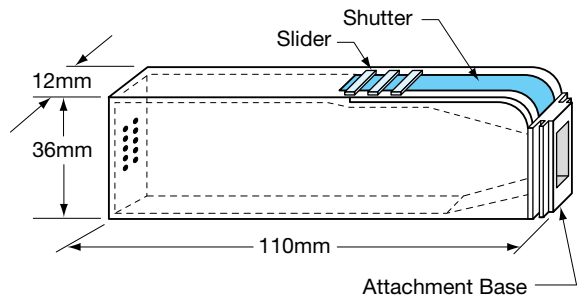
AVX bar code labeling is available and follows latest version of EIA-556



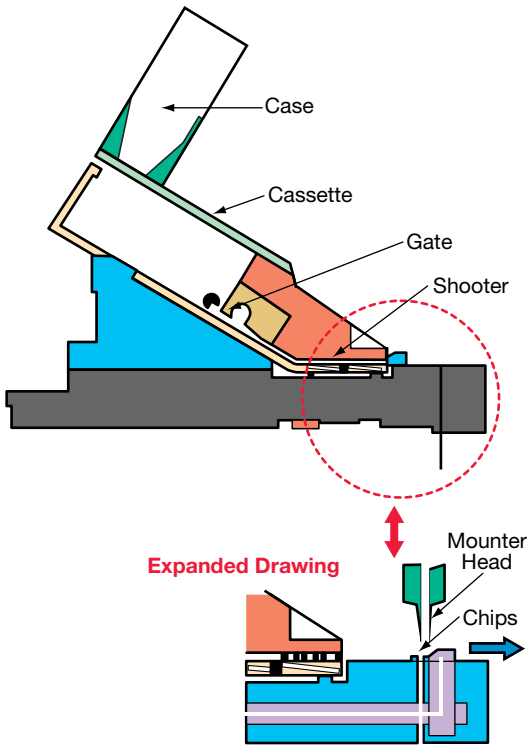
## BENEFITS

- Easier handling
- Smaller packaging volume  
(1/20 of T/R packaging)
- Easier inventory control
- Flexibility
- Recyclable

## CASE DIMENSIONS



## BULK FEEDER



## CASE QUANTITIES

| Part Size                | 0402   | 0603   | 0805                                                   | 1206                                                  |
|--------------------------|--------|--------|--------------------------------------------------------|-------------------------------------------------------|
| Qty.<br>(pcs / cassette) | 80,000 | 15,000 | 10,000 (T=.023")<br>8,000 (T=.031")<br>6,000 (T=.043") | 5,000 (T=.023")<br>4,000 (T=.032")<br>3,000 (T=.044") |