

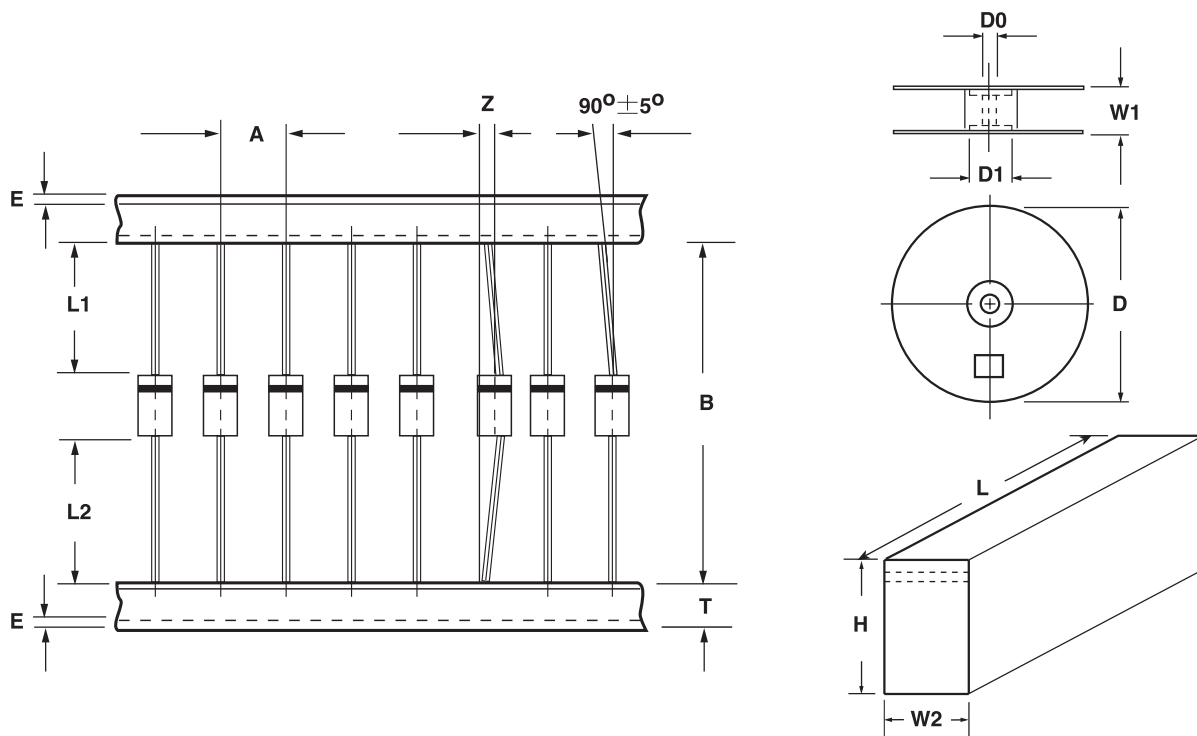
REEL TAPING & AMMO BOX PACKAGING SPECIFICATIONS FOR AXIAL LEAD RECTIFIERS



Axial lead devices are packed in accordance with EIA standard RS-296-D and specifications given below:

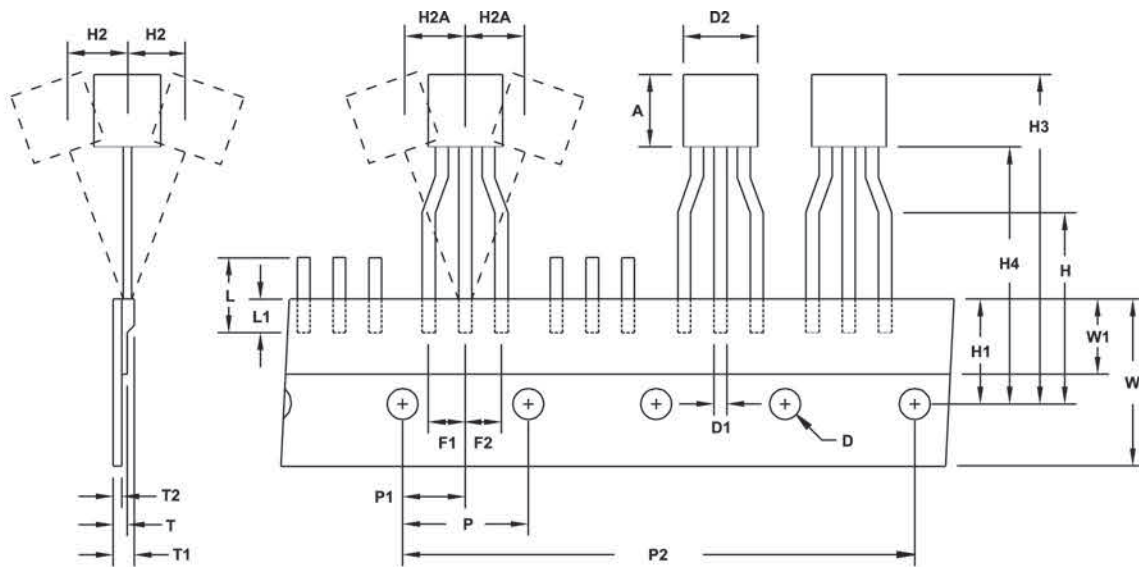
| COMPONENT OUTLINE | COMPONENT PITCH A | INNER TAPE PITCH B* | CUMULATIVE PITCH TOLERANCE |
|-------------------|----------------------------|----------------------------|----------------------------|
| | $\pm 0.5\text{mm} (.020")$ | $\pm 1.5\text{mm} (.059")$ | |
| DO-34/DO-35 | 5.0mm | 52.4mm | 2.0mm/10pitch |
| R-1 | 5.0mm | 52.4mm | 2.0mm/10pitch |
| A-405 | 5.0mm | 52.4mm | 2.0mm/10pitch |
| DO-41 | 5.0mm | 52.4mm | 2.0mm/10pitch |
| DO-15 | 5.0mm | 52.4mm | 2.0mm/10pitch |
| R-3 | 5.0mm | 52.4mm | 2.0mm/10pitch |
| DO-27/DO-201AE | 10.0mm | 52.4mm | 2.0mm/10pitch |
| R-6/R-6M | 10.0mm | 52.4mm | 2.0mm/10pitch |

*INNER TAPE PITCH B 26mm for DO-34/DO-35/R-1/A-405 also available upon request.



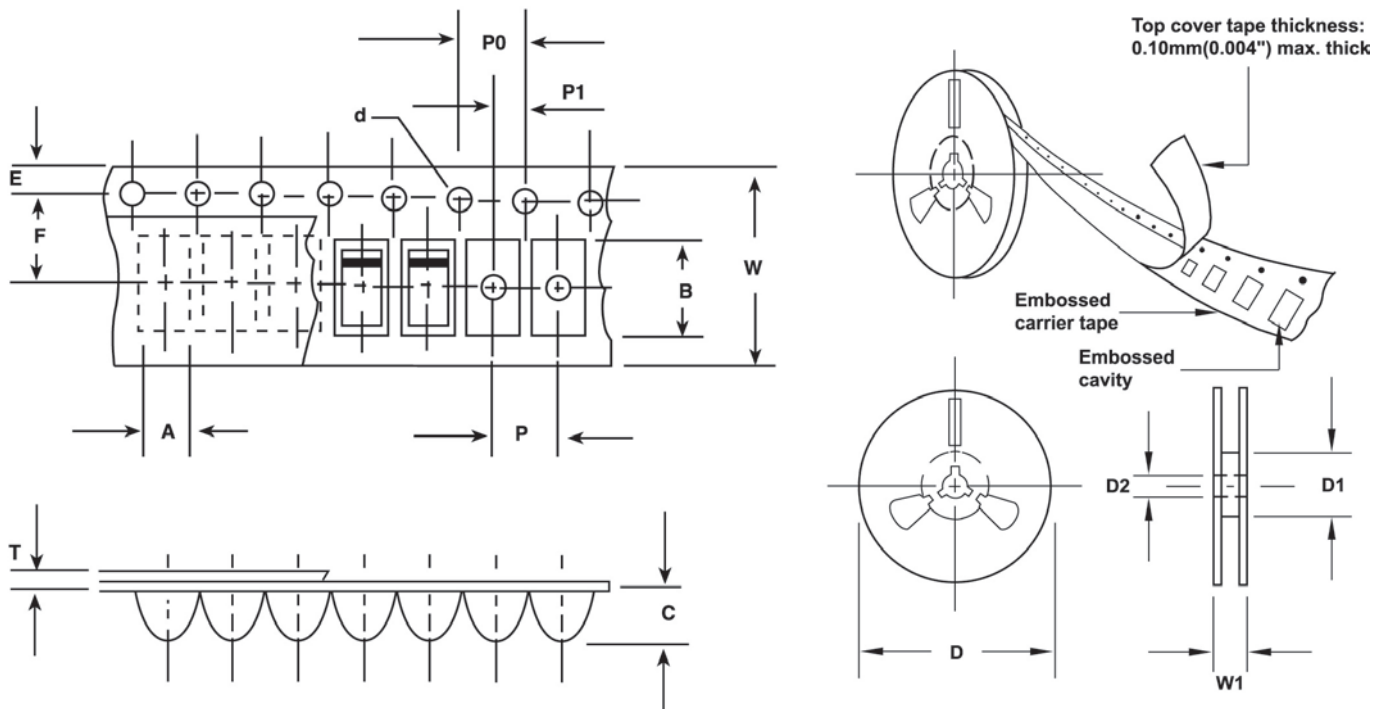
| ITEM | SYMBOL | SPECIFICATIONS (mm) | SPECIFICATIONS (inch) |
|-----------------------|--------|---------------------|-----------------------|
| Component alignment | Z | 1.2max. | 0.048 max. |
| Tape width | T | 6.0 ± 0.4 | 0.236 ± 0.016 |
| Exposed adhesive | E | 0.8 max. | 0.032 max. |
| Body eccentricity | L1-L2 | 1.0max. | 0.040 max. |
| Reel outside diameter | D | 330 | 13 |
| Reel inner diameter | D1 | 85.7 ± 0.3 | 3.375 ± 0.012 |
| Feed hole diameter | D0 | 16.6 ± 0.4 | 0.655 ± 0.016 |
| Reel width | W1 | 79.0 ± 1.0 | 3.110 ± 0.040 |
| Box length | L | 255.0 ± 5.0 | 10.04 ± 0.197 |
| Box width | W2 | 78.0 ± 5.0 | 3.070 ± 0.197 |
| Box height | H | 95.0 ± 5.0 | 3.740 ± 0.197 |

NOTE: 1. Each component lead shall be sandwiched between tapes for a minimum of 3.2mm (0.126inch)
 2. The reel width "W1" and the box width "W2" for 26mm taping are $50.0 \pm 1.0\text{mm}$ ($1.97 \pm 0.040\text{inch}$)



| ITEM | SYMBOL | SPECIFICATIONS (mm) | | SPECIFICATIONS (inch) | |
|-------------------------------------|--------|---------------------|-------|-----------------------|--------|
| | | Min. | Max. | Min. | Max. |
| Component body height | A | 4.33 | 4.83 | 0.170 | 0.192 |
| Tape feed diameter | D | 3.80 | 4.20 | 0.149 | 0.165 |
| Lead diameter | D1 | 0.36 | 0.53 | 0.014 | 0.021 |
| Component body diameter | D2 | 4.33 | 4.83 | 0.170 | 0.190 |
| Component lead pitch | F1,F2 | 2.40 | 2.90 | 0.096 | 0.114 |
| Component lead pitch difference | F1-F2 | - | ±0.30 | - | ±0.012 |
| Height of seating plane | H | 15.5 | 16.5 | 0.610 | 0.650 |
| Feed hole location | H1 | 8.50 | 9.50 | 0.335 | 0.374 |
| Front to rear deflection | H2 | - | 1.00 | - | 0.039 |
| Deflection left or right | H2A | - | 1.00 | - | 0.039 |
| Component height | H3 | - | 27.0 | - | 1.063 |
| Feed hole to bottom of component | H4 | - | 21.0 | - | 0.827 |
| Lead length after component removal | L | - | 11.0 | - | 0.433 |
| Lead wire enclosure | L1 | 2.50 | - | 0.098 | - |
| Feed hole pitch | P | 12.5 | 12.9 | 0.492 | 0.508 |
| Center of seating plane location | P1 | 5.95 | 6.75 | 0.234 | 0.266 |
| 4 feed hole pitch | P2 | 50.3 | 51.3 | 1.180 | 2.020 |
| Overall tape thickness | T | - | 0.55 | - | 0.022 |
| Total taped package thickness | T1 | - | 1.42 | - | 0.056 |
| Carrier tape thickness | T2 | 0.36 | 0.68 | 0.015 | 0.027 |
| Tape width | W | 17.5 | 19.0 | 0.689 | 0.748 |
| Adhesive tape width | W1 | 5.00 | 7.00 | 0.197 | 0.275 |
| 20 pcs pitch | - | 253 | 255 | 9.960 | 10.04 |

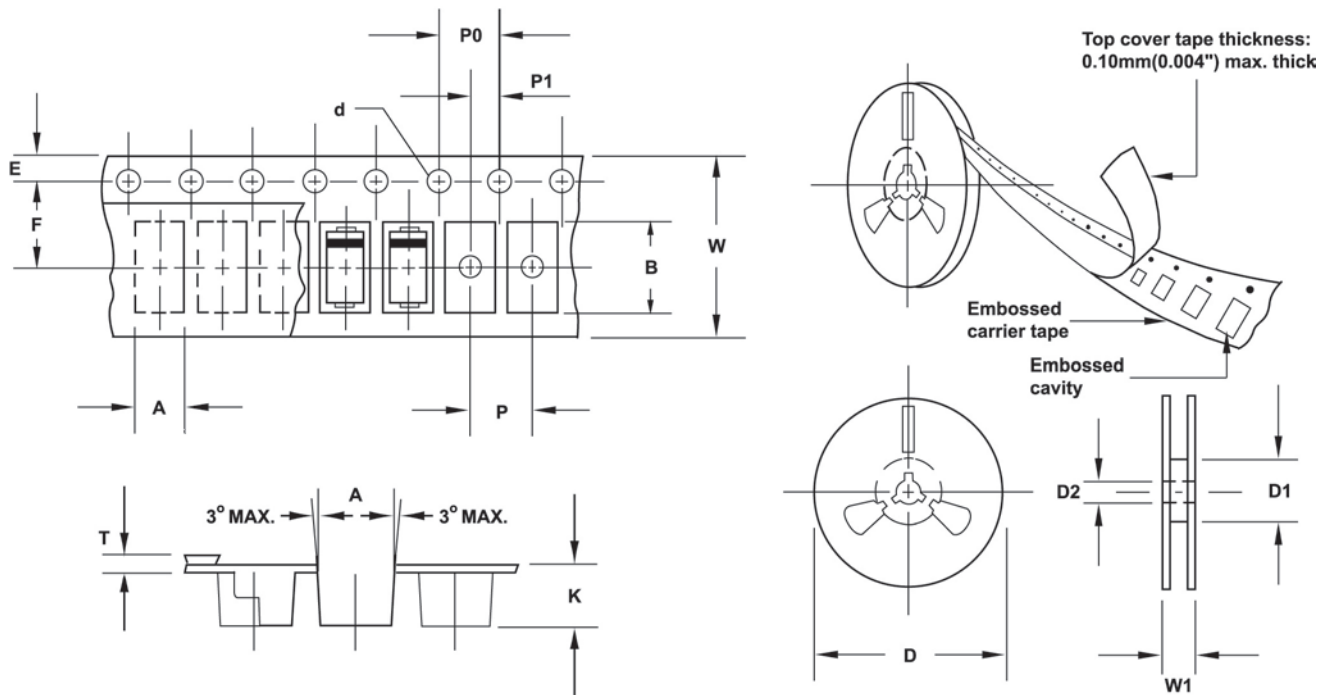
REEL TAPING SPECIFICATIONS FOR SURFACE MOUNT DEVICES (MELF TYPE)



| ITEM | SYMBOL | PACKAGE | | | |
|---------------------------|--------|------------------|---|------------------|--------------------|
| | | Micro Melf | Quadro Melf Mini Melf(DL-35) SM-2(DO-213AA) | Melf(DL-41) | SM-1 (DO-213AB) |
| Carrier Width | A | 1.75(0.069) Max. | 2.00(0.079) Max. | 3.00(0.118) Max. | 3.20(0.126) Max. |
| Carrier Length | B | 2.50(0.098) Max. | 3.70(0.146) Max. | 5.40(0.213) Max. | 7.80(0.307) Max. |
| Carrier Depth | C | 1.60(0.063) Max. | 1.80(0.071) Max. | 2.70(0.106) Max. | 4.50(0.177) Max. |
| Sprocket Hole | d | 1.50(0.059) Typ. | | | |
| Reel Outer Diameter | D | 178.0(7) | | 330.0(13) | 330.0/178.0(13/7) |
| Reel Inner Diameter | D1 | 50.0(1.969) Min. | | | |
| Feed Hole Diameter | D2 | 13.0(0.512) Typ. | | | |
| Sprocket Hole Position | E | 1.75(0.069) Typ. | | | |
| Punch Hole Position | F | 5.50(0.217) Typ. | | | |
| Punch Hole Pitch | P | 4.00(0.157) Typ. | | | |
| Sprocket Hole Pitch | P0 | 4.00(0.157) Typ. | | | |
| Embossment Center | P1 | 2.00(0.079) Typ. | | | |
| Overall Tape Thickness | T | 1.10(0.043) Max. | | | |
| Tape Width | W | 8.00(0.315) Typ. | | 12.0(0.472) Typ. | |
| Reel Width | W1 | 8.40(0.331) Min. | | 12.4(0.488) Min. | |
| Reel Packing Q'ty(13"/7") | | 0 / 2500 pcs | | 5000 / 0 pcs | 5000 / 1500 pcs |

- NOTE: 1. The clearance between the component and the cavity must be within 0.05mm min to 0.5mm max. for 8mm tape and 0.05mm min. to 0.65mm max. for 12mm tape. In addition, the components cannot rotate more than 20° within the determined cavity.
2. There shall be leader of 230mm minimum which may consist of carrier and or cover tape followed by a minimum of 160mm of carrier tape sealed with cover tape.
3. Devices are packed in accordance with EIA standard RS-481-A and specifications given above. Available for Micro Melf(glass case), Quadro Melf(glass case), DL-35(Mini Melf, glass case), SM-2(Mini Melf, plastic case), DL-41(Melf, glass case) and SM-1(Melf, plastic case) package.

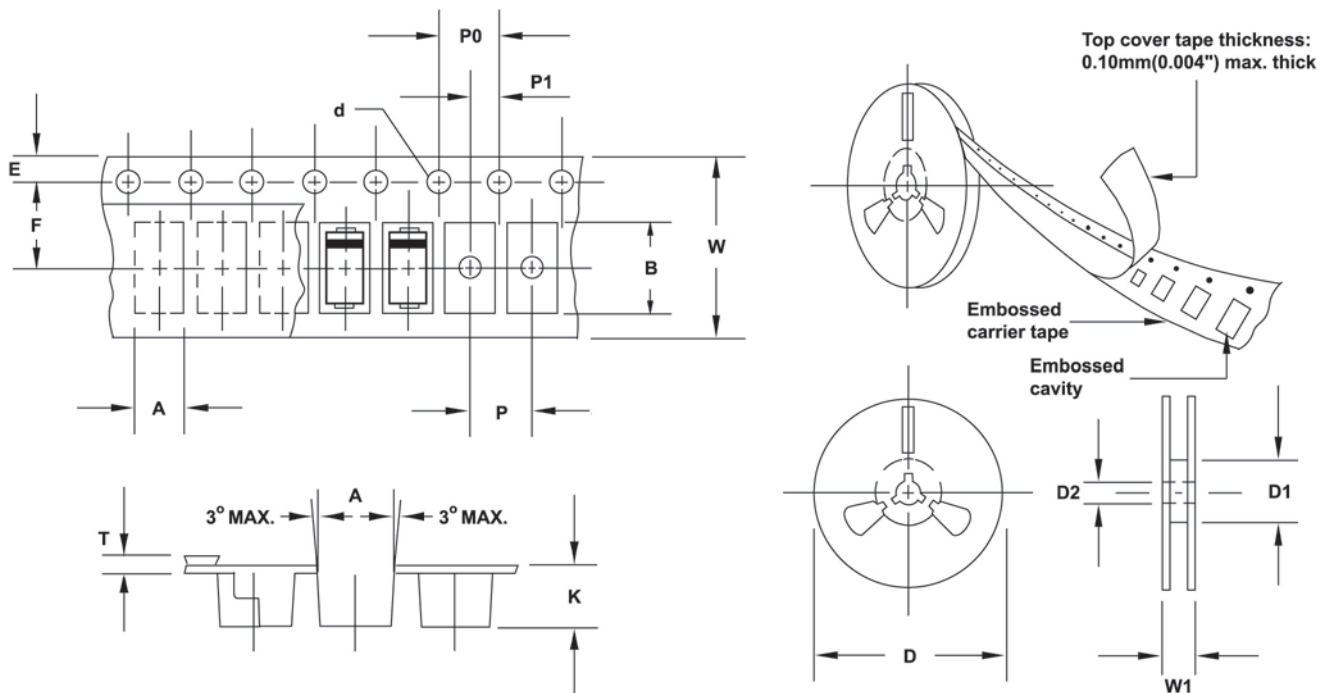
REEL TAPING SPECIFICATIONS FOR SURFACE MOUNT DEVICES (FLAT TYPE - PART 1)



| ITEM | SYMBOL | PACKAGE | | | | | |
|---------------------------|--------|--------------------|------------------|------------------|-------------------|------------------|-------------------|
| | | SOD-323 SOD-523 | SOD-123 | SOD-123FL | 0603C | 0805C | 1206C |
| Carrier Width | A | 1.70(0.067) Max. | 1.90(0.075) Max. | | 1.1(0.043) Max. | 1.65(0.065) Max. | 2.00(0.079) Max. |
| Carrier Length | B | 2.85(0.112) Max. | 4.11(0.162) Max. | | 2.00(0.079) Max. | 2.40(0.094) Max. | 3.60(0.142) Max. |
| Sprocket Hole | d | 1.55(0.061) Typ. | | | 1.50(0.059) Typ. | | 1.55(0.061) Typ. |
| Reel Outer Diameter | D | 178.0(7) | | | | | |
| Reel Inner Diameter | D1 | 50.0(1.969) Min. | | | | | 60.0(2.362) Min. |
| Feed Hole Diameter | D2 | 13.0(0.512) Typ. | | | | | |
| Sprocket Hole Position | E | 1.75(0.069) Typ. | | | | | |
| Punch Hole Position | F | 3.50(0.138) Typ. | | | | | |
| Carrier Depth | K | 1.23(0.048) Typ. | 1.55(0.061) Typ. | 1.35(0.053) Typ. | 0.95(0.037) Typ. | | 1.25(0.049) Max. |
| Punch Hole Pitch | P | 4.00(0.157) Typ. | | | | | |
| Sprocket Hole Pitch | P0 | 4.00(0.157) Typ. | | | | | |
| Embossment Center | P1 | 2.00(0.079) Typ. | | | | | |
| Overall Tape Thickness | T | 0.20(0.008) Typ. | 0.25(0.010) Typ. | | 0.054(0.002) Typ. | | 0.200(0.009) Typ. |
| Tape Width | W | 8.00(0.315) Typ. | | | | | |
| Reel Width | W1 | 8.40(0.331) Min. | | | | | 14.4(0.567) Min. |
| Reel Packing Q'ty(13"/7") | | 0 / 3000 pcs | | | 0 / 5000 pcs | | |

- NOTE: 1. The clearance between the component and the cavity must be within 0.05mm min. to 0.5mm max. for 8mm tape and 0.05mm min. to 0.65mm max. for 12mm tape. In addition, the components cannot rotate more than 20° within the determined cavity.
2. There shall be leader of 230mm minimum which may consist of carrier and or cover tape followed by a minimum of 160mm of carrier tape sealed with cover tape.
3. Devices are packed in accordance with EIA standard RS-481-A and specifications given above. Available for SOD-123 / SOD-323 / SOD-123FL / SOD-523 / 0603C / 0805C / 1206C package.

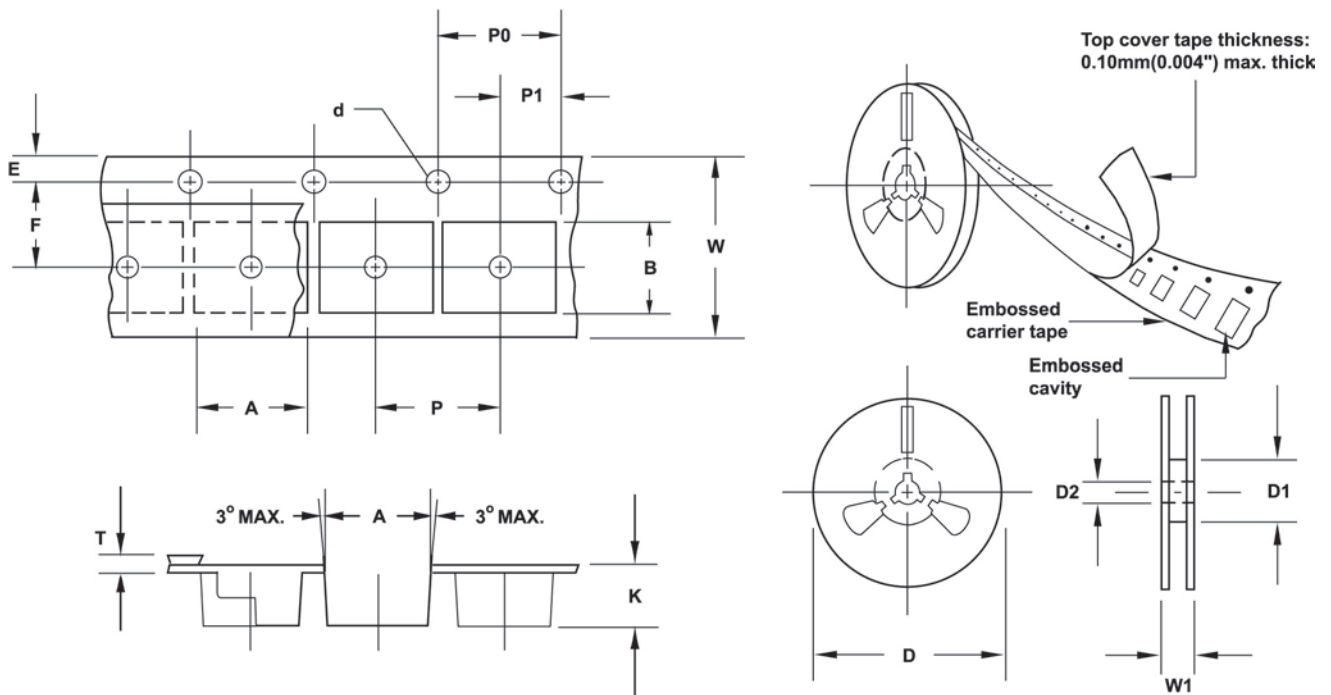
REEL TAPING SPECIFICATIONS FOR SURFACE MOUNT DEVICES (FLAT TYPE - PART 2)



| ITEM | SYMBOL | PACKAGE | | | | |
|---------------------------|--------|----------------------------|-------------------|-------------------|------------------|------------------|
| | | SMA (DO-214AC) SMA-L | SMB (DO-214AA) | SMC (DO-214AB) | SMAFL | SMBFL |
| Carrier Width | A | 2.82(0.111) Max. | 3.94(0.155) Max. | 6.15(0.006) Max. | 2.82(0.111) Max. | 3.94(0.155) Max. |
| Carrier Length | B | 5.35(0.211) Max. | 5.87(0.231) Max. | 8.45(0.333) Max. | 5.35(0.211) Max. | 5.87(0.231) Max. |
| Sprocket Hole | d | 1.55(0.061) Typ. | | | | |
| Reel Outer Diameter | D | 330.0/178.0(13/7) | | | | 330.0(13) |
| Reel Inner Diameter | D1 | 50.0(1.969) Min. | | | | |
| Feed Hole Diameter | D2 | 13.0(0.512) Typ. | | | | |
| Sprocket Hole Position | E | 1.75(0.069) Typ. | | | | |
| Punch Hole Position | F | 5.55(0.219) Typ. | | 7.50(0.295) Typ. | 5.55(0.219) Typ. | |
| Carrier Depth | K | 2.36(0.093) Typ. | | | | |
| Punch Hole Pitch | P | 4.00(0.157) Typ. | 8.00(0.315) typ. | | 4.00(0.157) Typ. | 8.00(0.315) typ. |
| Sprocket Hole Pitch | P0 | 4.00(0.157) Typ. | | | | |
| Embossment Center | P1 | 2.00(0.079) Typ. | | | | |
| Overall Tape Thickness | T | 0.30(0.012) Typ. | 0.40(0.016) Typ. | | 0.30(0.012) Typ. | 0.40(0.016) Typ. |
| Tape Width | W | 12.0(0.472) Typ. | | 16.0(0.630) Typ. | 12.0(0.472) Typ. | |
| Reel Width | W1 | 12.4(0.488) Min. | | 16.4(0.646) Min. | 14.7(0.578) Min. | |
| Reel Packing Q'ty(13"/7") | | 7500 / 1800 pcs | 3000 / 500 pcs | | 10000 / 3000 pcs | 5000 / 0 pcs |

- NOTE: 1. The clearance between the component and the cavity must be within 0.05mm min. to 0.5mm max. for 8mm tape and 0.05mm min. to 0.65mm max. for 12mm tape. In addition, the components cannot rotate more than 20° within the determined cavity.
2. There shall be leader of 230mm minimum which may consist of carrier and or cover tape followed by a minimum of 160mm of carrier tape sealed with cover tape.
3. Devices are packed in accordance with EIA standard RS-481-A and specifications given above. Available for SMA / SMA-L / SMB / SMC / SMAFL / SMBFL package.

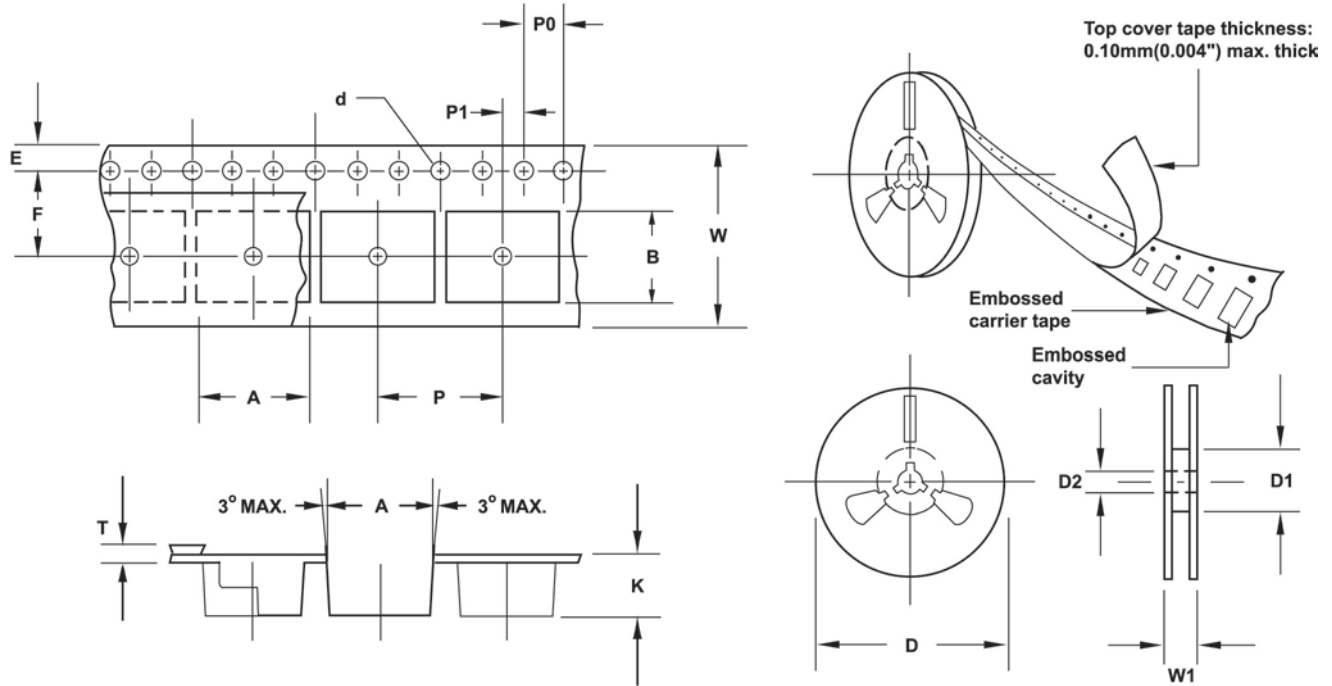
REEL TAPING SPECIFICATIONS FOR SURFACE MOUNT DEVICES (FLAT TYPE - PART 3)



| ITEM | SYMBOL | PACKAGE | | | | | |
|------------------------|--------|------------------|------------------|------------------|------------------|----------------------------|------------------|
| | | SOT-323 | SOT-23 | SOT-363 | TO-252(DPAK) | TO-263(D ² PAK) | TO-277A |
| Carrier Width | A | 2.26(0.089) Max. | 3.25(0.128) Max. | 2.6(0.102) Max. | 7.06(0.278) Max. | 10.9(0.429) Max. | 4.38(0.172) Max. |
| Carrier Length | B | 2.65(0.104) Max. | 2.75(0.108) Max. | 2.65(0.104) Max. | 10.6(0.417) Max. | 16.2(0.638) Max. | 6.9(0.271) Max. |
| Sprocket Hole | d | 1.55(0.061) Typ. | | | | | |
| Reel Outer Diameter | D | 178.0(7) | | | 330.0(13) | | |
| Reel Inner Diameter | D1 | 50.0(1.969) Min. | | | | | 100(3.937) Min. |
| Feed Hole Diameter | D2 | 13.0(0.512) Typ. | | | | | |
| Sprocket Hole Position | E | 1.75(0.069) Typ. | | | | | |
| Punch Hole Position | F | 3.50(0.138) Typ. | | | 7.50(0.295) Typ. | 11.5(0.453) Typ. | 7.50(0.295) Typ. |
| Carrier Depth | K | 1.17(0.046) Typ. | 1.27(0.050) Typ. | 1.2(0.047) Typ. | 2.79(0.110) Typ. | 5.21(0.205) Typ. | 1.4(0.055) Typ. |
| Punch Hole Pitch | P | 4.00(0.157) Typ. | | | 8.00(0.315) Typ. | 16.0(0.630) Typ. | 8.00(0.315) Typ. |
| Sprocket Hole Pitch | P0 | 4.00(0.157) Typ. | | | | | |
| Embossment Center | P1 | 2.00(0.079) Typ. | | | | | |
| Overall Tape Thickness | T | 0.20(0.008) Typ. | | | 0.30(0.012) Typ. | 0.40(0.016) Typ. | |
| Tape Width | W | 8.00(0.315) Typ. | | | 16.0(0.630) Typ. | 24.0(0.945) Typ. | 16.0(0.630) Typ. |
| Reel Width | W1 | 8.40(0.331) Min. | | | 16.4(0.646) Min. | 24.4(0.961) Min. | 16.4(0.646) Min. |
| Reel Packing Q'ty | | 3000 pcs | 3000 pcs | 3000 pcs | 2500 pcs | 800 pcs | 5000 pcs |

- NOTE: 1. The clearance between the component and the cavity must be within 0.05mm min. to 0.5mm max. for 8mm tape and 0.05mm min. to 0.65mm max. for 12mm tape. In addition, the components cannot rotate more than 20° within the determined cavity.
2. There shall be leader of 230mm minimum which may consist of carrier and or cover tape followed by a minimum of 160mm of carrier tape sealed with cover tape.
3. Devices are packed in accordance with EIA standard RS-481-A and specifications given above. Available for SOT-323 / SOT-23 / SOT-363 / TO-252 / TO-263 / TO-277A package.

REEL TAPING SPECIFICATIONS FOR SURFACE MOUNT DEVICES (DIP TYPE)



| ITEM | SYMBOL | PACKAGE | | | | |
|---------------------------|--------|-------------------|-----|------------------|------------------|-------------------|
| | | ABS MBF | ABF | MBFL | DB-1MS MBS | DB-1S |
| Carrier Width | A | 5.25(0.206) Typ. | | 5.05(0.199) Typ. | 4.90(0.193) Typ. | 8.64(0.340) Typ. |
| Carrier Length | B | 6.70(0.263) Typ. | | 7.10(0.280) Typ. | 7.24(0.285) Typ. | 10.40(0.140) Typ. |
| Sprocket Hole | d | 1.55(0.061) Typ. | | | | |
| Reel Outer Diameter | D | 330.0/178.0(13/7) | | | | 330.0(13) |
| Reel Inner Diameter | D1 | 50.0(1.969) Min. | | | | |
| Feed Hole Diameter | D2 | 13.0(0.512) Typ. | | | | |
| Sprocket Hole Position | E | 1.75(0.069) Typ. | | | | |
| Punch Hole Position | F | 5.55(0.219) Typ. | | | | 7.50(0.295) Typ. |
| Carrier Depth | K | 1.59(0.063) Typ. | | 1.70(0.067) Typ. | 3.33(0.131) Typ. | 3.81(0.150) Typ. |
| Punch Hole Pitch | P | 8.00(0.315) Typ. | | | | 12.00(0.472) Typ. |
| Sprocket Hole Pitch | P0 | 4.00(0.157) Typ. | | | | |
| Embossment Center | P1 | 2.00(0.079) Typ. | | | | |
| Overall Tape Thickness | T | 0.30(0.012) Typ. | | | | 0.32(0.013) Typ. |
| Tape Width | W | 12.0(0.472) Typ. | | | | 16.00(0.630) Typ. |
| Reel Width | W1 | 12.4(0.488) Min. | | | | 16.40(0.646) Min. |
| Reel Packing Q'ty(13"/7") | | 5000 / 0 pcs | | | 3000 / 500 pcs | 1500 / 200 pcs |

- NOTE: 1. The clearance between the component and the cavity must be within 0.05mm min. to 0.5mm max. for 8mm tape and 0.05mm min. to 0.65mm max. for 12mm tape. In addition, the components cannot rotate more than 20° within the determined cavity.
2. There shall be leader of 230mm minimum which may consist of carrier and or cover tape followed by a minimum of 160mm of carrier tape sealed with cover tape.
3. Devices are packed in accordance with EIA standard RS-481-A and specifications given above. Available for ABS / ABF / MBS / MBF / MBFL / DB-1MS / DB-1S package.