Advanced Monolithic Systems

Packaging for Automatic Handling

Tape & Reel and Ammo Pack

Tape and Reel Packing

Tape and reel packing is available for all SO, SOT-223, TO-92, DD and D packages. Surface mount packages are retained in an embossed carrier tape by a cover tape. For TO-92 package, the leads are secured to a backing tape by a cover tape.

Ammo Pack

TO-92 packages are also available in "ammo pack", in which the leads are secured to a backing tape by a cover tape and are fanfolded into a box.

Tape and Reel Specifications

AMS Package Code	Package type	Quantity/ reel	Reel Diameter	Carrier Tape Width	Carrier Tape Pitch
S	SO-8	2,500	13"	12mm	8mm
S	SO-14	2,500	13"	16mm	8mm
S	SO-16	2,500	13"	16mm	8mm
M	SOT-23-3	3,000	7"	8mm	4mm
M-1	SOT-23-5	3,000	7"	8mm	4mm
M-2	SOT-23-6	3,000	7"	8mm	4mm
L	SOT-89	1,000	7"	12mm	8mm
	SOT-223	2,500	13"	12mm	8mm
M	TO-263-2L	500	13"	24mm	16mm
	TO-263-3L	500	13"	24mm	16mm
	TO-263-5L	500	13"	24mm	16mm
D	TO-252	2,500	13"	16mm	8mm
N	TO-92	2,000	14"	18mm	12mm

EMBOSSED CARRIER DIMENSIONS (12mm, 16mm, 24mm tape only)
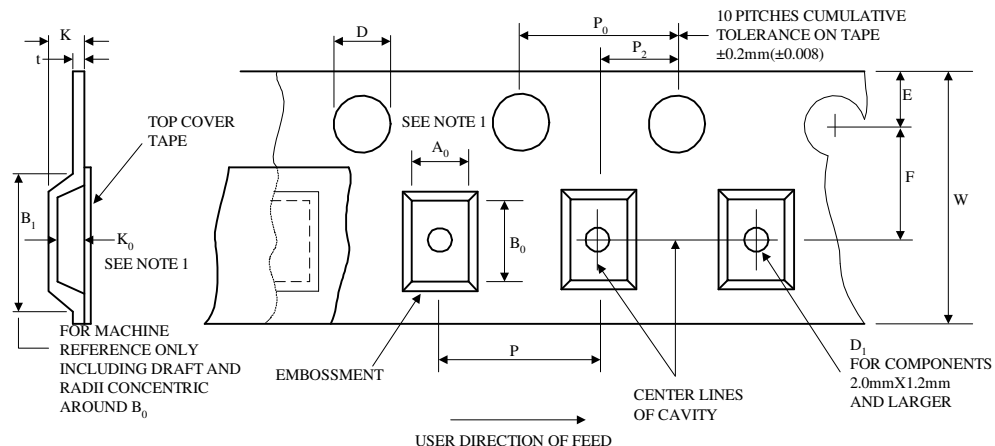
TAPE AND REEL SPECIFICATIONS

EMBOSSED TAPE – CONSTANT DIMEMSIONS

Tape Size	D		E	P_0	t (Max.)	A_0 B_0 K_0
12mm 16mm 24mm	1.5 (0.059)	+0.10 –0.0 +0.004 -0.0	1.75± 0.10 (0.069± 0.004)	4.0± 0.10 (0.157± 0.004)	0.600 ――― (0.024)	See Note 1

EMBOSSED TAPE – VARIABLE DIMEMSIONS

Tape Size	B1 Max.	D1 Max.	F	K Max.	P_2	R Min	W
12mm	8.2 (0.323)	1.5 (0.059)	5.5± 0. 05 (0.217± 0.002)	6.5 (0.256)	2.0± 0. 05 (0.079± 0.002)	30 (1.181)	12.0± 0. 30 (0.472± 0.012)
16mm	12.1 (0.476)		7.5± 0. 10 (0.295± 0.004)		2.0± 0. 10 (0.079± 0.004)	40 (1.575)	16± 0. 30 (0.630± 0.012)
24mm	20.1 (0.791)		11.5± 0. 10 (0.453± 0.004)			50 (1.969)	24± 0. 30 (0.945± 0.012)

Note1: A_0 B_0 K_0 are determined by component size. The clearance between the component and the cavity must be within 0.05(0.002) min. to 0.65 (0.026) max. for 12mm tape and 0.05(0.002) min. to 0.90 (0.035) max. for 16mm tape. The component cannot rotate more than 10° witin the determined cavity.
Note 2: Tape and components shall pass around radius "R" without damage.
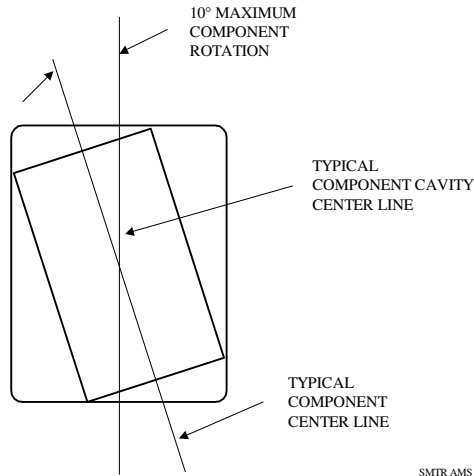**Note 3**: Dimensions are in millimeters (inches) unless otherwise noted.

BENDING RADIUS

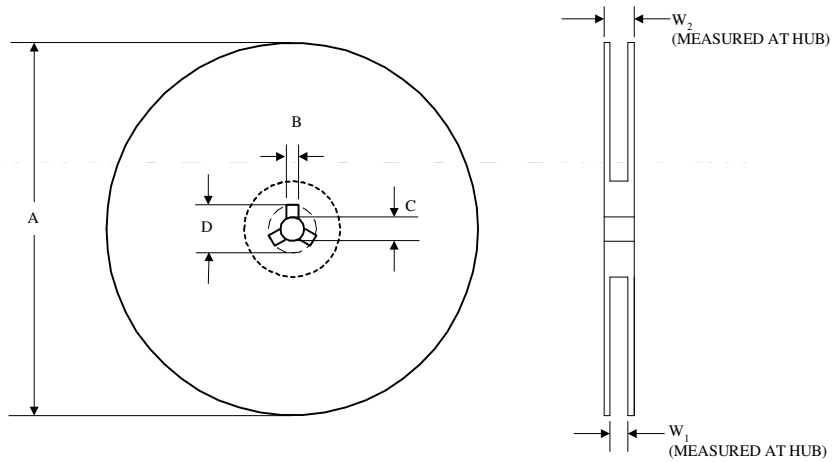

R MIN
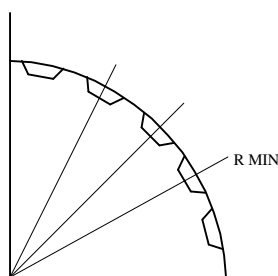
BENDING RADIUS
SEE NOTE 2

SMTR AMS DRW# 040202

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TAPE AND REEL SPECIFICATIONS

COMPONENT ROTATION

10° MAXIMUM
COMPONENT
ROTATION

TYPICAL
COMPONENT CAVITY
CENTER LINE

TYPICAL
COMPONENT
CENTER LINE

SMTR AMS DRW# 040203

REEL DIMENSIONS

W₂
(MEASURED AT HUB)

B

A

D

C

W₁
(MEASURED AT HUB)

SMTR AMS DRW# 040204

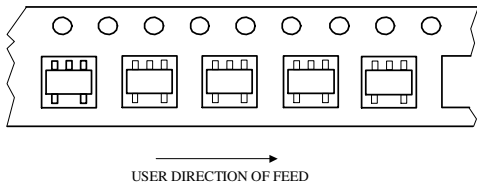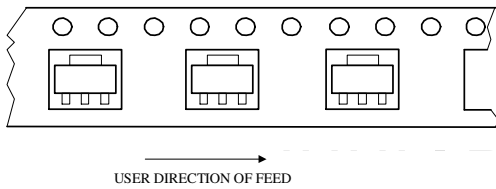| TAPE SIZE	A	B MIN	C	D MIN	W 1	W2
12mm	330 +0.25 –4.0 (12.992) +0.010 -0.158	1.5 (0.059)	13.0± 0.20 (0.512 ± 0.008)	20.2 (0.795)	12.4 +2.0 –0.0 (0.488) +0.078 -0.0	18.4 (0.724)
16mm	330 +0.25 –4.0 (12.992) +0.010 -0.158	1.5 (0.059)	13.0± 0.20 (0.512 ± 0.008)	20.2 (0.795)	16.4 +2.0 –0.0 (0.646) +0.078 -0.0	22.4 (0.882)
24mm	330 +0.25 –4.0 (12.992) +0.010 -0.158	1.5 (0.059)	13.0± 0.20 (0.512 ± 0.008)	20.2 (0.795)	24.4 +2.0 –0.0 (0.961) +0.078 -0.0	30.4 (1.197)

TAPE AND REEL SPECIFICATIONS
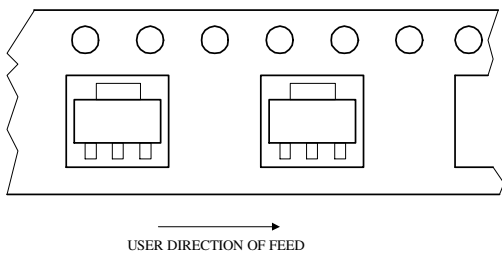
PACKAGE ORIENTATION

SOT-23 PACKAGE ORIENTATION

USER DIRECTION OF FEED
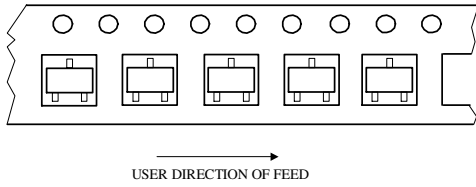
SOT-23-5 PACKAGE ORIENTATION

USER DIRECTION OF FEED

SOT-89 PACKAGE ORIENTATION

USER DIRECTION OF FEED

SOT-223 PACKAGE ORIENTATION

USER DIRECTION OF FEED

SOIC PACKAGE ORIENTATION

USER DIRECTION OF FEED
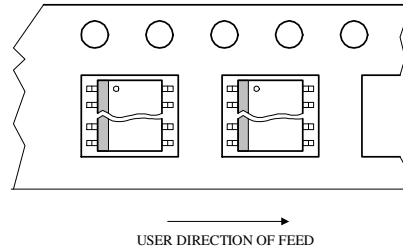
TO-252 (D PAK) PACKAGE ORIENTATION

USER DIRECTION OF FEED
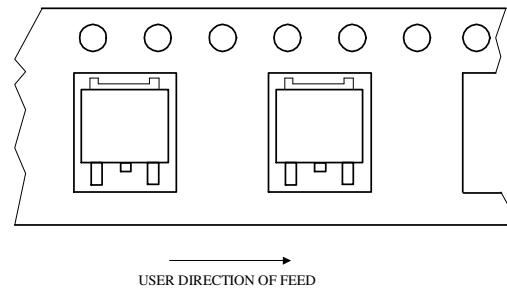
TO-263 (DD PAK) PACKAGE ORIENTATION

USER DIRECTION OF FEED
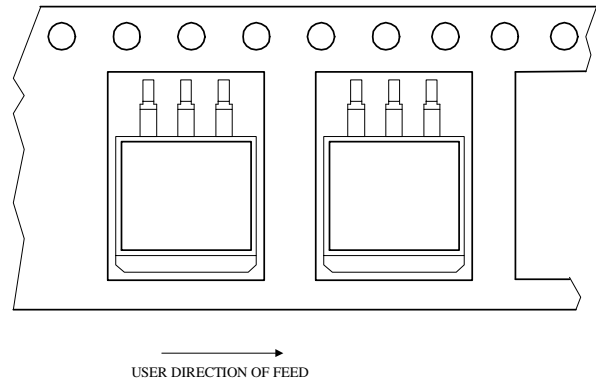
SMTR AMS DRW# 040205

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TAPE AND REEL SPECIFICATIONS

TO-92 TAPE DIMENSIONS
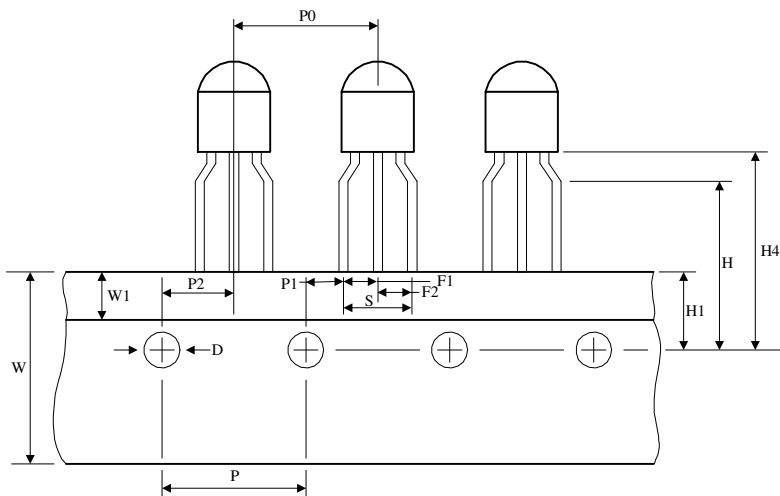
TO92TR AMS DRW# 050201

SYMBOL	DESCRIPTION	DIMENSIONS
D	Sprocket Hole Diameter	4 ± 0.2
H	Length from Seating Plane	16 ± 0.5
H1	Sprocket Hole Location	9 ± 0.5
H4	Component Base Height	20 Max
P	Sprocket Hole Pitch	12.7 ± 0.2
P0	Pitch of Component	12.7 ± 0.5
P1	Lead Location	3.85 ± 0.5
P2	Center of Seating Plane Location	6.35 ± 0.4
S	Component Lead Spacing	5 + 8, -0.2
W	Carrier Tape Width	18 + 1, -0.5
W1	Adhesive Tape Width	6.0 ± 1.0
F1, F2	Lead-to-Lead Distance	2.5 + 0.4, -0.1

TO-92 REEL DIMENSIONS

356mm TYP

30.5mm TYP
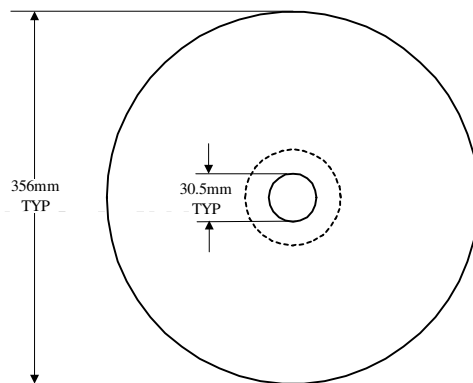
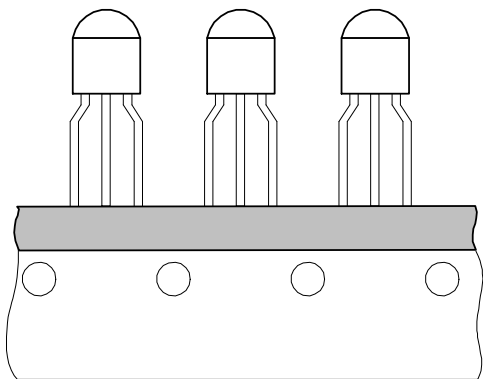TO92TR AMS DRW# 050202

PACKAGE ORIENTATION

STYLE S : Standard
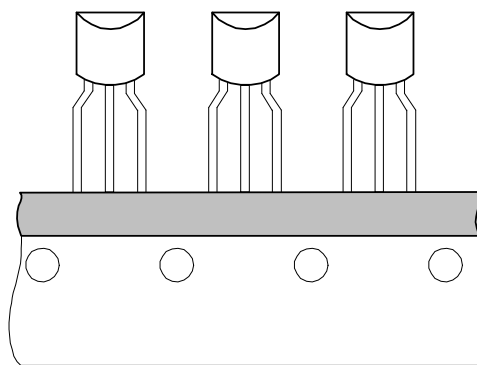(Flat Side of Package Faces Toward the Adhesive Tape)

STYLE R: Reverse
(Rounded Side of Package Faces Toward the Adhesive Tape)

TO92TR AMS DRW# 050203

TO92TR AMS DRW# 050204

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