



Through-hole Packaging

Reels, Tubes, Ammo Packs, & Taping Specifications

MINIMUM PACKAGING QUANTITY

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Device Type	Available Packaging				
	Bulk			13" Tape & Reel	Ammo Pack
	Quantity per Box	Quantity per Tube	Quantity per Tray	Quantity per Reel	Quantity per Box
5KP	500			500 / 700*	
5W	1K			3K	
5KW				1K	
A-405	1K			5K	3K
DF-M	5K	50			
DO-15	500 / 800 / 1K*			4K	2K
DO-201	1K			1K / 1.2K*	1K
DO-201AD	500 / 1K*			1.2K	1K
DO-35	500			10K	5K / 10K*
DO-41	500 / 1K*			5K	3K / 5K*
GBJ	750	15			
GBPC/W			100		
GBU	1K	20			
KBJ	1K	20			
KBP	3.5K	35			
KBPC/W			100		
MB/W			100		
MP/W			100		
PBL			100		
PBPC-3			200		
PBPC-8	150				
PBU			100		
R-6	200 / 500*			500 / 700*	
T-1	1K			5K	3K
TO-220AB/AC, ITO-220AB / ITO-220S	2K	50			
TO-3P	1.2K	30			
TO-92	2K / 5K*				2K / 4K*
WOG	1K				

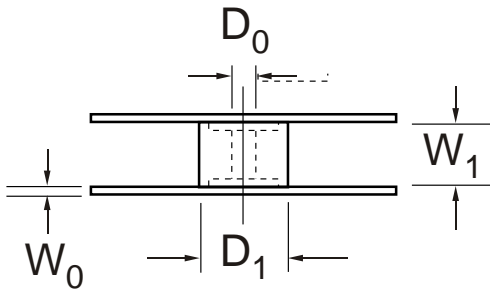
* Quantity varies by Part Number.

- Notes:
1. Package quantities are given for minimum packaging quality only, not minimum order quantity. For minimum order quantity, please consult the Sales Department.
 2. No mixed date codes or partial quantity (less than minimum packaging quantity) per packaging is allowed.
 3. In no case shall there be two or more consecutive components missing from any reel for any reason.

PRODUCT REEL DIMENSIONS

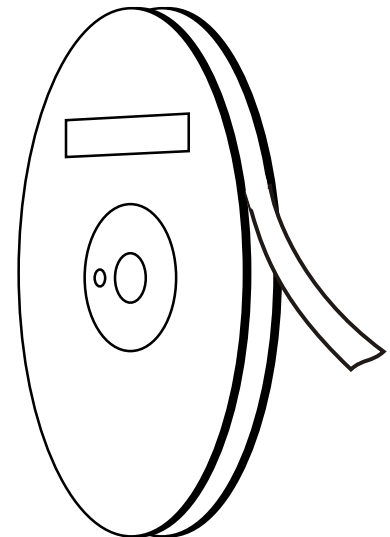
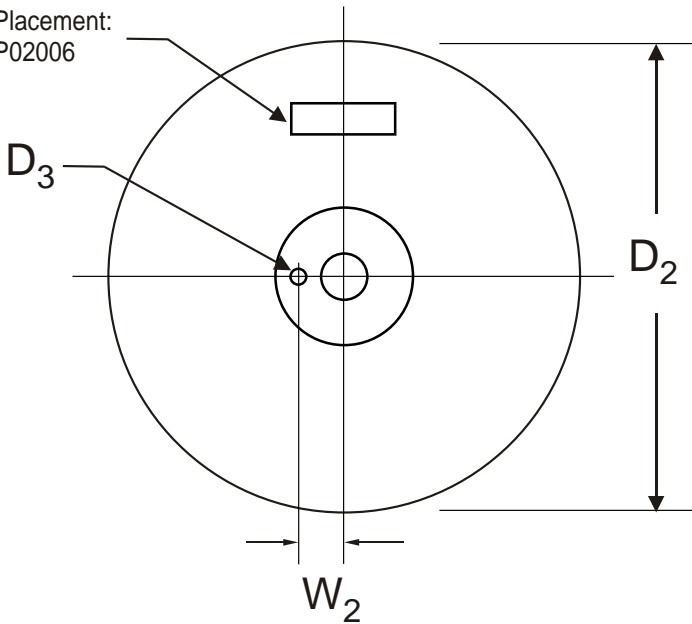
PRODUCT REEL					
Description	Symbol	Specification		Alternate	
		Inches	Millimeters	Inches	Millimeters
Arbor Hole Diameter	D_0	0.65 0.02	16.6 0.50	1.18 0.02	30.0 0.50
Core Diameter (O.D.)	D_1	3.2 Typical	81.0 Typical	3.2 Typical	81.0 Typical
Reel Diameter	D_2	13.6 0.6	345.0 15.0	10.25 0.6	260.0 15.0
Drive Hole Diameter	D_3	0.38 0.02	9.5 0.5	0.38 0.02	9.5 0.5
Material Thickness	W_0	0.08 0.16	2.0 4.0	0.08 0.16	2.0 4.0
Reel Width	W_1	3.15 0.20	80.0 5.0	2.56 0.20	65.0 5.0
Drive/Arbor Hole Spacing	W_2	1.08 0.02	27.5 0.5	1.08 0.02	27.5 0.5

Core material: plastic (blue/black) or metal (neutral)
 Reel material: corrugated board or plastic (blue or black)
 For label dimensions and placement see AP02006.



Direction of Unreeling

Label Placement:
See AP02006

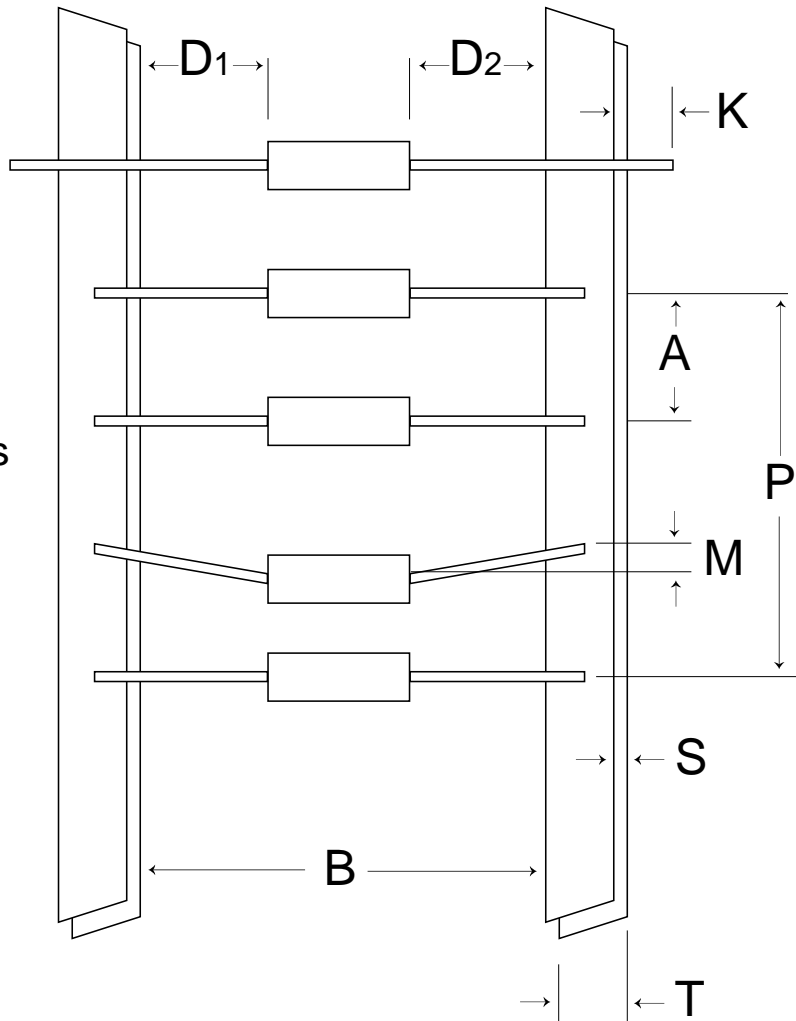


REEL/AMMO PACK TAPING SPECIFICATIONS

REEL AND AMMO PACK TAPING SPECIFICATIONS			
Description	Symbol	Body	Specification (mm)
Component Pitch	A	DO-15, DO-35, DO-41, A-405, 5W	5.0 0.5
		DO-201, DO-201AD, 5KP, 5KW, R-6	10.0 0.5
Inside Tape Spacing	B	All	52.4 1.5
Lead to Lead Eccentricity	$ D_1 - D_2 $	All	1.4 max
Lead Extension	K	All	0.8 max
Lead Bending	M	All	1.2 max
Cumulative Pitch	P	All	1.5 per 6 pitch
Exposed Adhesive	S	All	0.8 max
Tape Width	T	All	6.0 0.4
Empty Spaces			< 0.1%
Polarity Marking	All polarized components shall be oriented in the same direction. The cathode tape shall be colored, and the anode tape shall be white or light beige. Anode end must face label-side of reel. See AP02006 for label placement.		

Notes: 1. Consecutive missing components not allowed.

Dimensions A, M, K, P,
S & T apply to both sides



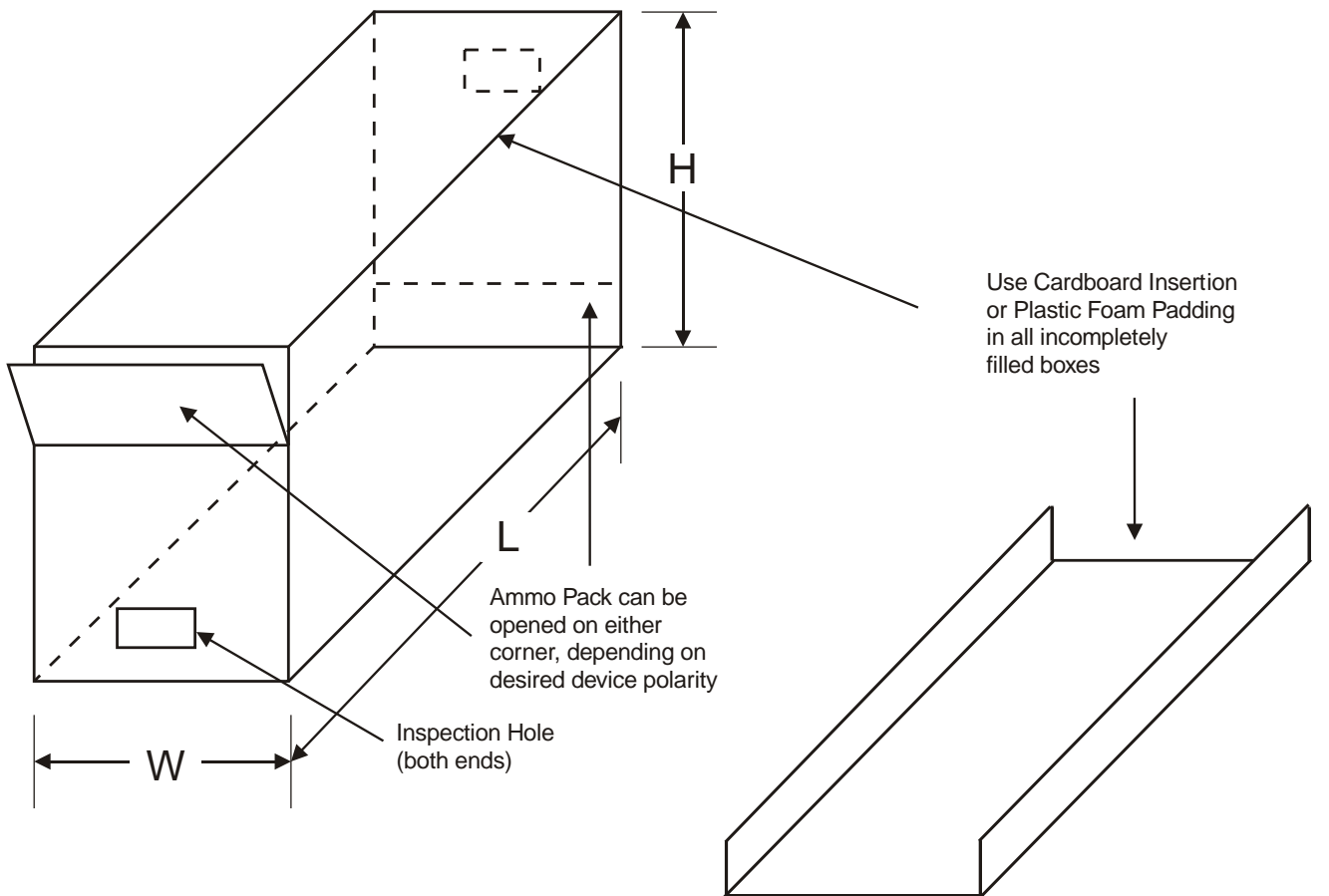
TUBE PACK DIMENSIONS/SPECIFICATIONS

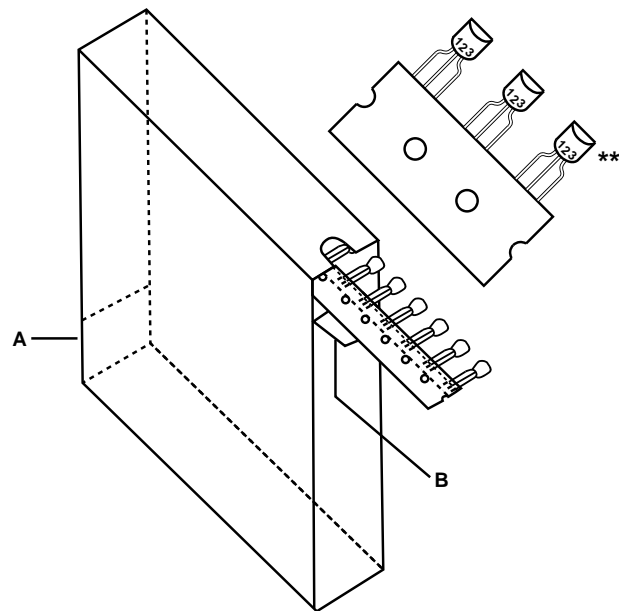
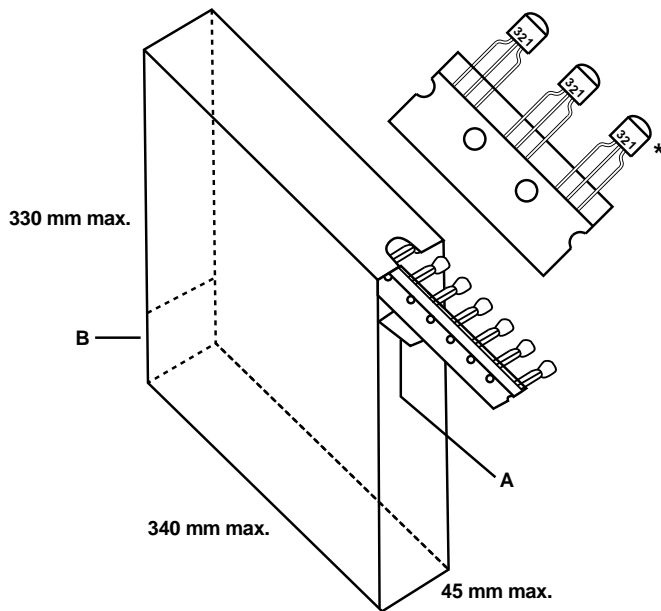
TUBE PACK						
PRODUCT DESCRIPTION	HEIGHT (H)		WIDTH (W)		LENGTH (L)	
	inches	mm	inches	mm	inches	mm
DF-M	0.6	15	0.5	13.3	17.5	444
GBJ	1.7	42.5	0.3	7.2	18.7	475
GBU	1.6	41.5	0.2	6.2	18.3	465
ITO-220AB / ITO-220S	1.3	33	0.3	7	21.0	534
KBJ	1.5	37.3	0.3	7.1	20.7	525
KBP	1.2	29.6	0.2	6.2	20.9	531
TO-220AB/AC	1.3	33	0.3	7	21.0	534
TO-3P / TO-247	1.8	46	0.3	8	19.8	502

AMMO PACK DIMENSIONS/SPECIFICATIONS

AMMO PACK						
PRODUCT DESCRIPTION	HEIGHT (H)		WIDTH (W)		LENGTH (L)	
	inches	mm	inches	mm	inches	mm
DO-35, DO-41 Glass Case	4.88	124	3.00	75	10.00	255
DO-41 Plastic Case	5.75	145	3.12	79	10.25	260
TO-92	TBA	TBA	TBA	TBA	TBA	TBA

Material: corrugated board (neutral)
 Thickness: 3.00 0.5mm (0.12 0.02")
 For label dimensions and placement see AP02006.





TO-92 TRANSISTOR - AMMO PACK

- Notes:
1. The carrier tape consists of a cardboard strip with sprocket holes. The pins of the transistors are secured radially to the carrier tape with a heat-seal tape.
 2. The tape can be taken from either of two opposite corners, depending on the desired pin sequence.
 3. The label shall contain a minimum of: Part Number, Type Designation, Quantity and Date Code.
 4. Each Ammo Pack consists of layers of 25 devices each, folded like a concertina. One component is missing at the end of each layer. Each such position is identified by means of a double perforation across the tape. The tape is folded at the perforations.
 5. See AP02006 for Label Dimensions and placement.

THROUGH-HOLE TO-92 TAPING SPECIFICATIONS

THROUGH-HOLE TO-92 TAPING SPECIFICATIONS		
Description	Symbol	Specification (mm)
Front to Rear Deflection	A	0 1.0
Left to Right Deflection	B	0 1.0
Feed Hole Diameter	D	4.0 0.2
Component Lead Pitch	F1, F2	2.5 ^{+0.4} -0.1
Feed Hole to Bottom of Component	H	21.0 max
Height of Seating Plane	H1	16 0.5
Height of Feed Hole Location	H2	9.0 + 0.5
Feed Hole Pitch	P	12.7 0.3
Center of Seating Plane Location	P1	6.35 0.5
Total Taped Package Thickness	T	1.5 max
Carrier Tape Width	W	18.0 ^{+1.0} -0.5
Adhesive Tape Width	W1	6.0 0.5
Adhesive Tape Position	W2	1.0 max
Feed Hole Pitch Tolerance		0 1.0 over 20 pitch
Empty Places in Tape		0.1%, non-consecutive

