Application Report
SNOA072A–May 2004–Revised June 2010

TO-92 Packing Options / Ordering Instructions

ABSTRACT

The TO-92 is an axial leaded, flat index package. The primary shipping methods are tape-and-reel, or radial ammo pack. These systems simplify the handling of the TO-92 for automated circuit board assembly systems.

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1 General Description

The TO-92 is an axial leaded, flat index package. The primary shipping methods are tape-and-reel, or radial ammo pack. These systems simplify the handling of the TO-92 for automated circuit board assembly systems.

NOTE: Please check with your National local representative for details specific to your product needs.

1.1 Bulk Packing

Bulk Packing	
Standard Packing Option with straight leads. For lead-free option use Flow NOPB. Quantities: 1,800 units per box	Example: LM2936Z-5.0 NOPB

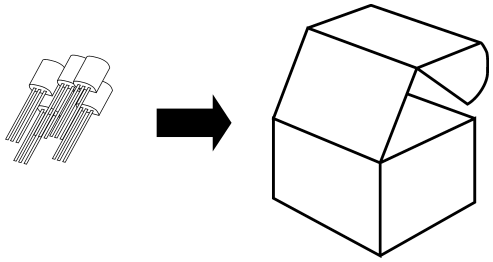


Figure 1. Bulk Packing

1.2 Taped Pack Option 1

Taped Pack Option 1	
Flow T1, T2, T7 and T8 indicate Tape & Reel pack. For lead-free option use Flow LFT1, LFT2, LFT7 or LFT8. Quantities: 2,000 units per reel	Example: LM2936Z-5.0 LFT3

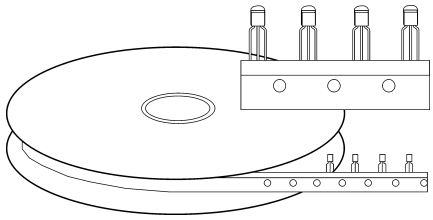


Figure 2. LFT1 Tape &Reel Package Up, Flat Side Up

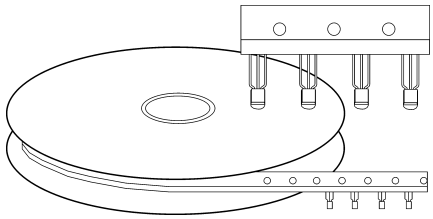


Figure 3. LFT2 Tape & Reel Package Down, Flat Side Up.

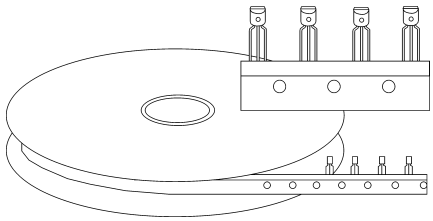


Figure 4. LFT7 Tape & Reel Package Up, Flat Side Down

Figure 5. Other options available on request

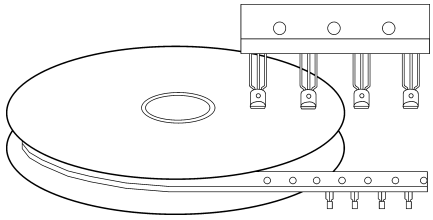


Figure 6. LFT8 Tape & Reel
Package Down, Flat Side Down.

1.3 Taped Pack Option 2

Taped Pack Option 2	
Flow T3 and T4 indicate Tape & Ammo box pack. For lead-free option use Flow LFT3 or LFT4. Quantities: 2,000 units per Ammo Box	Example: LM2936Z-5.0 LFT3

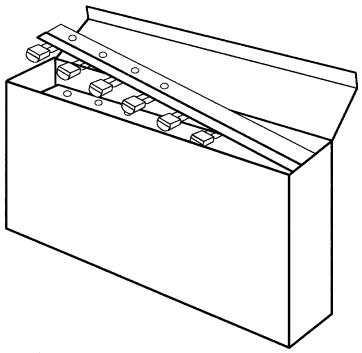


Figure 7. LFT3 Radial Ammo Pack
Ammo Pack equivalent to option LFT1. Flat side of transistor on adhesive side of tape.

Figure 8. Other options available on request

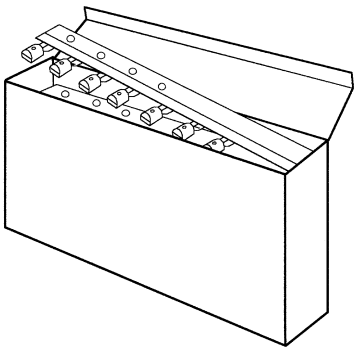
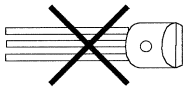
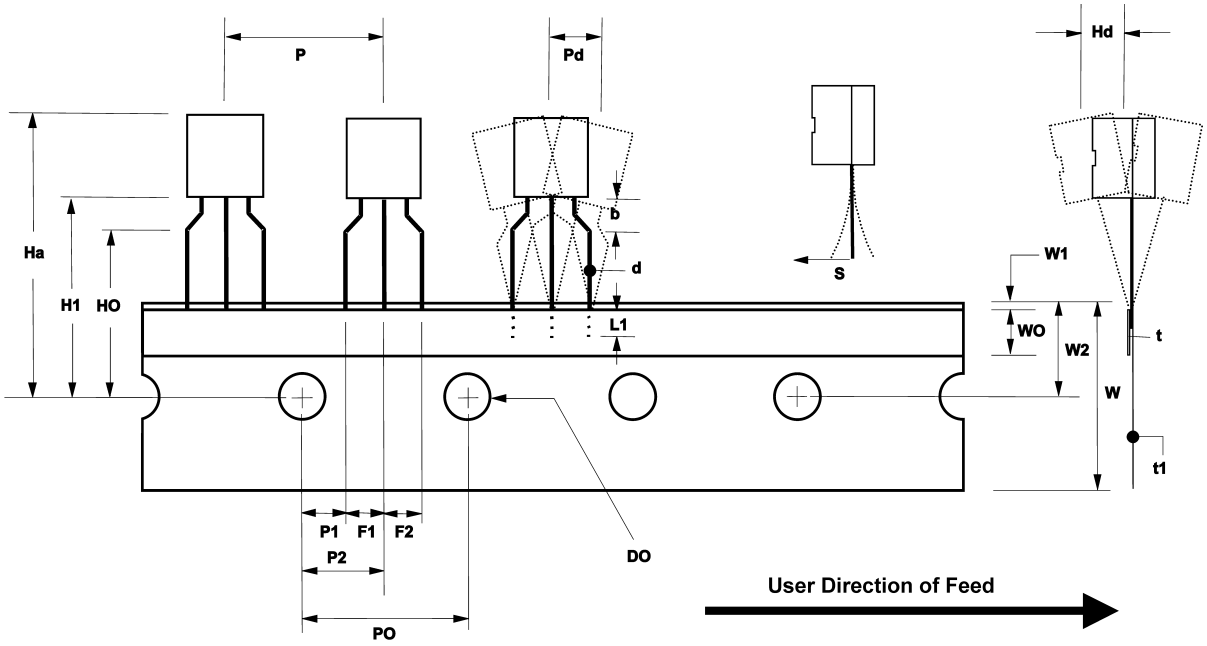


Figure 9. LFT4 Radial Ammo Pack
Ammo Pack equivalent to option LFT7. Round side of transistor on adhesive side of tape.

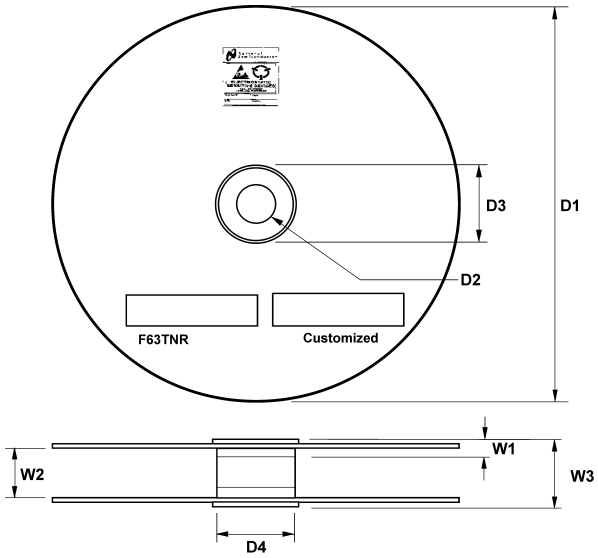
Figure 10. NOTE: No straight leads available on taped product!



1.4 TO-92 Tape and Reel Dimensions



Item Description	Symbol	Dimension (mm)
Base of Package to Lead Bend	b	3.00 ± 0.40
Component Height	Ha	24.00 ± 0.50
Lead Clinch Height	HO	16.00 ± 0.40
Component Base Height	H1	19.00 ± 0.40
Component Alignment (side/side)	Pd	0.80 max
Component Alignment (front/back)	Hd	1.00 max
Component Pitch	P	12.70 ± 0.60
Feed Hole Pitch	PO	12.70 ± 0.20
Hole Center to First Lead	P1	3.75 ± 0.30
Hole Center to Component Center	P2	6.35 ± 0.30
Lead Spread	F1/F2	2.60 +0.30/−0.20
Lead Thickness	d	0.45 +1.00/−0.05
Taped Lead Length	L1	2.50 max
Taped Lead Thickness	t	0.70 ± 0.20
Carrier Tape Thickness	t1	0.40 ± 0.05
Carrier Tape Width	W	18.50 ± 0.20
Hold - down Tape Width	WO	6.00 ± 0.40
Hold - down Tape position	W1	0.30 +0.20/−0.30
Feed Hole Position	W2	9.00 ± 0.40
Sprocket Hole Diameter	DO	4.00 ± 0.20
Lead Spring Out	S	0.40 max



Item Description	Symbol	Dimensions (mm)
Reel Diameter	D1	360.00 ± 1.00
Arbor Hole Diameter (Standard)	D2	30.50 ± 0.05
Arbor Hole Diameter (Small Hole)	D2	7.00 ± 0.05
Core Diameter	D3	90.00 ± 0.05
Hub Recess Inner Diameter	D4	76.00 ± 0.05
Hub Recess Depth	W1	10.70 ± 0.50
Flange to Flange Inner Width	W2	41.00 ± 1.00
Hub to Hub Center Width	W3	50.40 ± 1.70

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