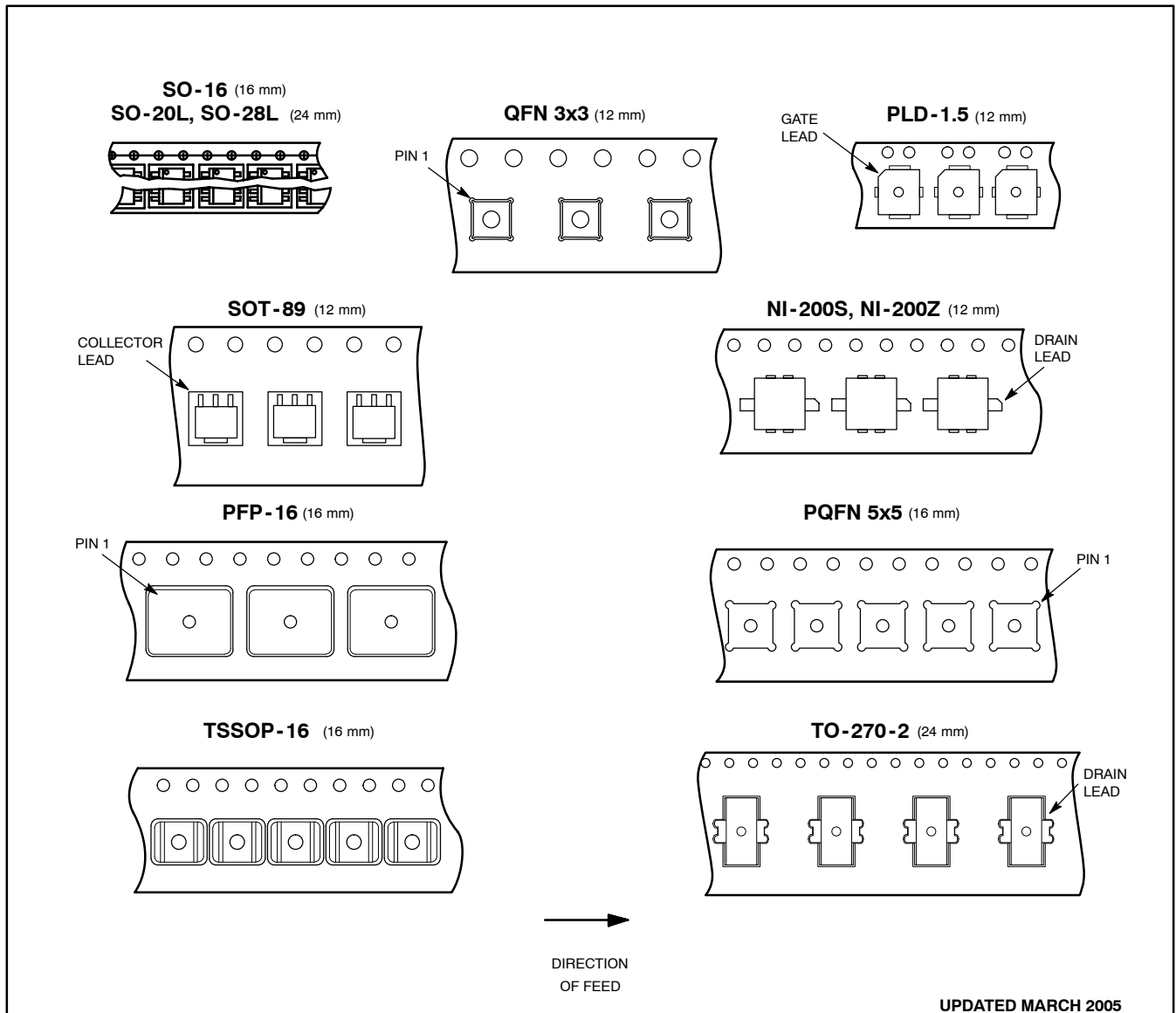


RF and IF Tape and Reel Specifications

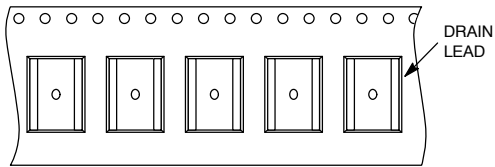
Embossed Tape and Reel is used to facilitate automatic pick and place equipment feed requirements. The tape is used as the shipping container for various products and requires a minimum of handling. The antistatic/conductive tape provides a secure cavity for the product when sealed with the “peel-back” cover tape.

- Two Reel Sizes Available (7” and 13”)
- Used for Automatic Pick and Place Feed Systems
- Minimizes Product Handling
- EIA 481, -1, -2
- SOT-363 in 8 mm Tape
- QFN-32, PLD-1.5, NI-200S, NI-200Z, QFN 3x3, SOT-89 in 12 mm Tape
- PQFN 5x5, SO-16, TSSOP-16 in 16 mm Tape
- SO-20L, SO-28L, TO-270-2, TO-270-2 Gull in 24 mm Tape
- NI-360, NI-360S, NI-400, NI-400S, NI-600, TO-270 WB-4 in 32 mm Tape
- TO-272-2, TO-272-6 Wrap, TO-272-6, TO-272-8 Wrap, TO-272-8, TO-272 WB-4, TO-272 WB-16 in 44 mm Tape
- HF-600, NI-780, NI-780S, NI-860, NI-880, NI-880S, NI-1230 in 56 mm Tape

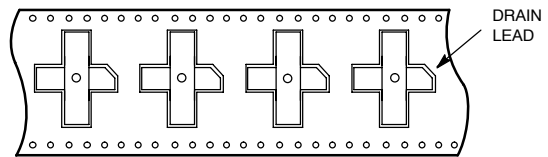
Use the standard device title and add the required suffix as listed in the option table on the following page. Note that the individual reels have a finite number of devices depending on the type of product contained in the tape. Also note the minimum lot size is one full reel for each line item, and orders are required to be in increments of the single reel quantity.



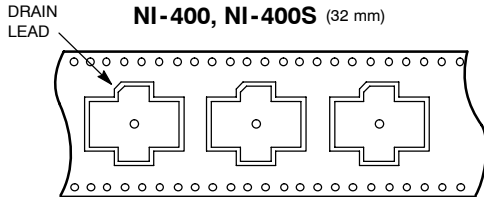
TO-270-2 Gull (24 mm)



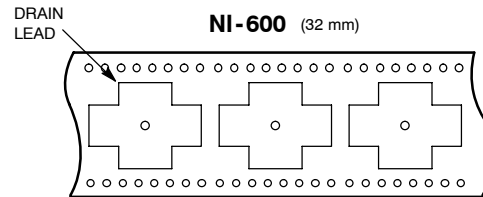
NI-360, NI-360S (32 mm)



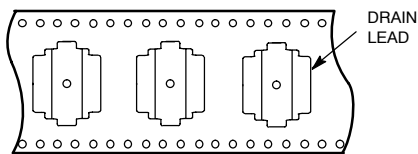
NI-400, NI-400S (32 mm)



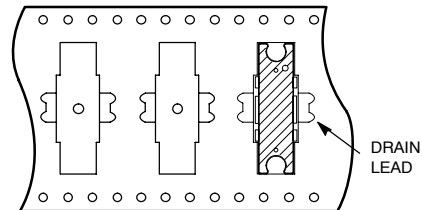
NI-600 (32 mm)



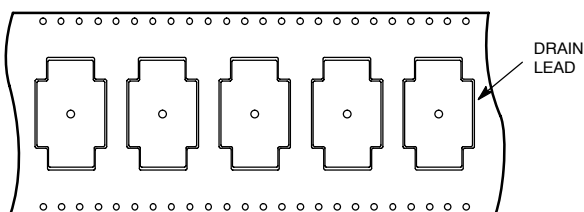
TO-270 WB-4 (32 mm)



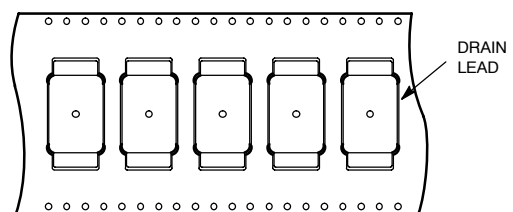
TO-272-2, TO-272-6 Wrap, TO-272-6, TO-272-8, TO-272-8 Wrap (44 mm)



TO-272 WB-4, TO-272 WB-16 (44 mm)

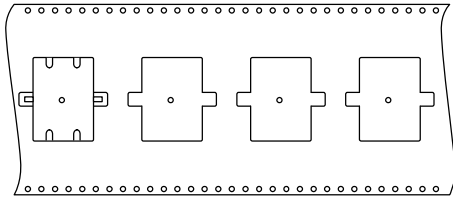


TO-272 WB-16 Gull (44 mm)

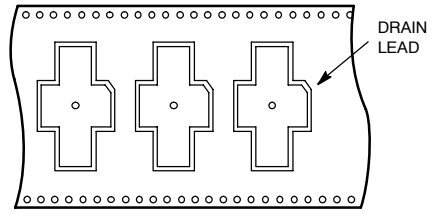


DIRECTION OF FEED

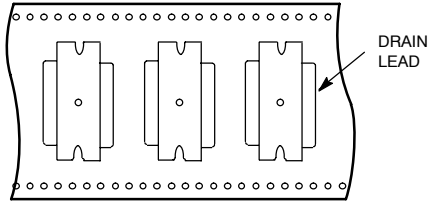
HF-600 (56 mm)



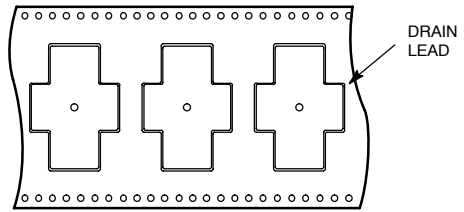
NI-780, NI-780S (56 mm)



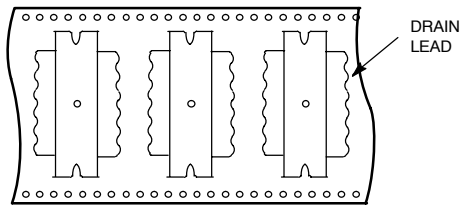
NI-860 (56 mm)



NI-880, NI-880S (56 mm)



NI-1230 (56 mm)



DIRECTION
OF FEED

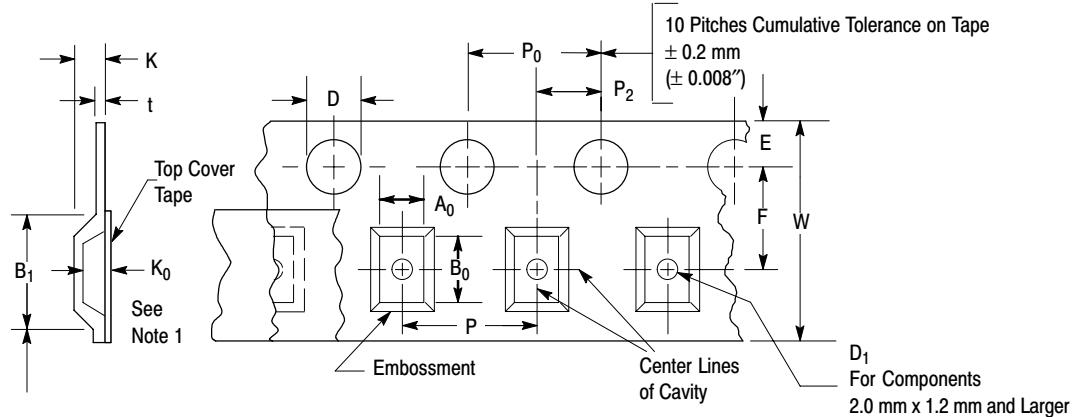
RF and IF EMBOSSED TAPE AND REEL ORDERING INFORMATION

Package	Tape Width (mm)	Pitch		Reel Size		Devices Per Reel and Minimum Order Quantity	Device Suffix
		mm	(inch)	mm	(inch)		
HF-600 (1490)	56	32.0 ± 0.1	(1.26 ± .004)	330	(13)	50	R5
NI-200S (458B)	12	12.0 ± 0.1	(.471 ± .004)	178	(7)	500	R1
NI-200Z (458C)	12	12.0 ± 0.1	(.471 ± .004)	178	(7)	500	R1
NI-360 (360B)	32	24.0 ± 0.1	(.945 ± .004)	330	(13)	500	R1
NI-360S (360C)	32	24.0 ± 0.1	(.945 ± .004)	330	(13)	500	R1
NI-400 (465E)	32	32.0 ± 0.1	(1.26 ± .004)	330	(13)	250	R3
NI-400S (465F)	32	32.0 ± 0.1	(1.26 ± .004)	330	(13)	250	R3
NI-600 (465D)	32	32.0 ± 0.1	(1.26 ± .004)	330	(13)	250	R3
NI-780 (465)	56	32.0 ± 0.1	(1.26 ± .004)	330	(13)	250	R3
NI-780S (465A)	56	32.0 ± 0.1	(1.26 ± .004)	330	(13)	250	R3
NI-860 (375B, 375G)	56	28.0 ± 0.1	(1.10 ± .004)	330	(13)	250	R3
NI-860 (375G)	56	28.0 ± 0.1	(1.10 ± .004)	330	(13)	50	R5
NI-880 (465B)	56	32.0 ± 0.1	(1.26 ± .004)	330	(13)	250	R3
NI-880S (465C)	56	32.0 ± 0.1	(1.26 ± .004)	330	(13)	250	R3
NI-1230 (375D)	56	32.0 ± 0.1	(1.26 ± .004)	330	(13)	150	R6
PLD-1.5 (466)	12	8.0 ± 0.1	(.315 ± .004)	178	(7)	1,000	T1
	12	8.0 ± 0.1	(.315 ± .004)	178	(7)	100	R4
PFP-16	16	12.0 ± 0.1	(.472 ± .004)	330	(13)	1,500	R2
PQFN 5x5 (1543)	16	8.0 ± 0.1	(.315 ± .004)	330	(13)	1,000	T1
QFN 3x3 (1483)	12	8.0 ± 0.1	(.315 ± .004)	178	(7)	1,500	R2
QFN-32 (5x5 mm)	12	8.0 ± 0.1	(.315 ± .004)	178	(7)	2,500	R2
SO-16	16	8.0 ± 0.1	(.315 ± .004)	330	(13)	2,500	R2
SO-20L	24	12.0 ± 0.1	(.472 ± .004)	330	(13)	1,000	R2
SO-28L	24	12.0 ± 0.1	(.472 ± .004)	330	(13)	1,000	R2
SOT-89 (1514)	12	8.0 ± 0.1	(.315 ± .004)	178	(7)	1,000	T1
SOT-363	8	4.0 ± 0.1	(.157 ± .004)	178	(7)	3,000	T1
TO-270-2 (1265)	24	16.0 ± 0.1	(.631 ± .004)	330	(13)	500	R1
TO-270-2 Gull (1265A)	24	12.0 ± 0.1	(.471 ± .004)	330	(13)	500	R1
TO-270 WB-4 (1486)	32	24.0 ± 0.1	(.944 ± .004)	330	(13)	500	R1
TO-272-6 Wrap (1264), TO-272-6 (1264A)	44	16.0 ± 0.1	(.631 ± .004)	330	(13)	500	T1
TO-272-8 Wrap (1366), TO-272-8 (1366A)	44	20.0 ± 0.1	(.787 ± .004)	330	(13)	500	T1
TO-272-2 (1337)	44	16.0 ± 0.1	(.631 ± .004)	330	(13)	500	R1
TO-272 WB-16 (1329)	44	20.0 ± 0.1	(.788 ± .004)	330	(13)	500	R1
TO-272 WB-16 Gull (1329A)	44	16.0 ± 0.1	(.631 ± .004)	330	(13)	500	R1
TO-272 WB-4 (1484)	44	20.0 ± 0.1	(.788 ± .004)	330	(13)	500	R1
TSSOP-16	16	8.0 ± 0.1	(.315 ± .004)	330	(13)	2,500	R2

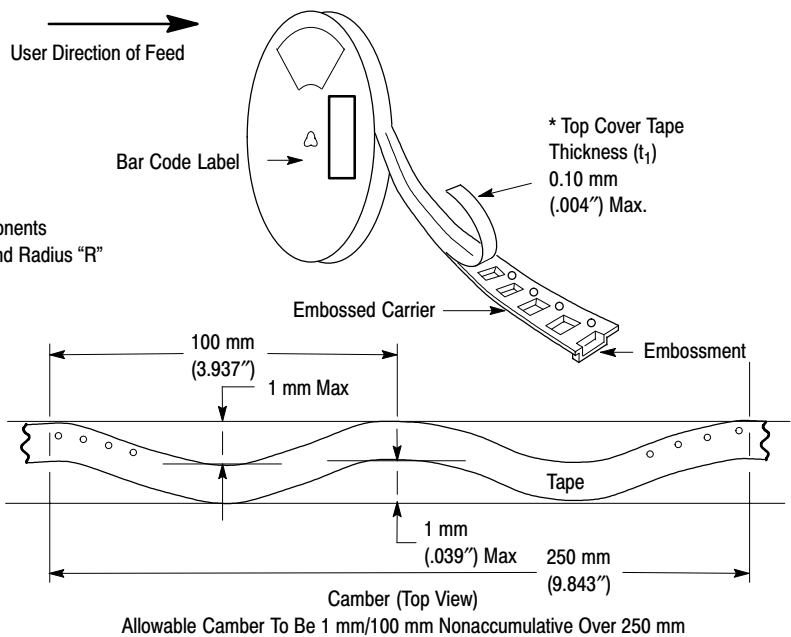
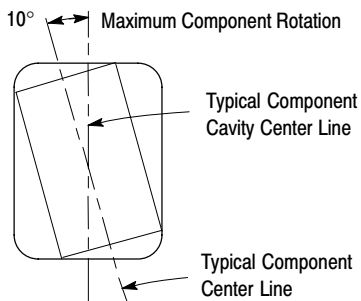
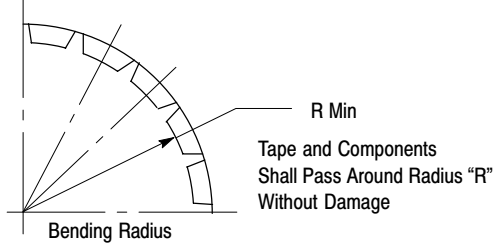
Tape and Reel Specifications

EMBOSSED TAPE AND REEL DATA FOR DISCRETES

CARRIER TAPE SPECIFICATIONS



For Machine Reference Only
Including Draft and RADII
Concentric Around B_0



DIMENSIONS

Tape Size	B ₁ Max	D	D ₁	E ₁	F	K	P ₀	P ₂	R Min	t Max	W Max		
12 mm	8.2 mm (.323")	1.5±0.1 mm -0.0 (.059±.004" -0.0)	1.5 mm Min (.060")	1.75±0.1 mm (.069±.004")	5.5±0.05 mm (.217±.002")	6.4 mm Max (.252")	4.0±0.1 mm (.157±.004")	2.0±0.1 mm (.079±.004")	30 mm (1.18")	0.4 mm (.016")	12±.30 mm (.470±.012")		
	4.0 mm (.157") QFN 3x3											1.2 mm Max (.048") QFN 3x3	2.0±0.5 mm (.079±.002")
	5.1 mm (.201") SOT-89		1.7 mm Min (.068") SOT-89			1.9 mm Max (.076") SOT-89		0.30 mm (.012")					
16 mm	12.1 mm (.476")	1.5 mm Min (.060")	1.5 mm Min (.060")	7.5±0.10 mm (.295±.004")	7.9 mm Max (.311")	4.0±0.2 mm (.157±.001") PQFN 5x5	2.0±0.1 mm (.079±.004")	2.0±0.5 mm (.079±.002") PQFN 5x5	0.4 mm (.016")	0.30 mm (.012") PQFN 5x5	16±.3 mm (.642±.008")		
	6.1 mm (.241") PQFN 5x5											2.8 mm Max (.110") PQFN 5x5	
24 mm	20.1 mm (.791")				11.5±0.1 mm (.453±.004")							11.9 mm Max (.468")	4.0±0.1 mm (.157±.004")
11.1 mm (.437") TO-270-2 Gull	2.82 mm Max (.111") TO-270-2 Gull	0.338 mm (.013") TO-270-2 Gull											
32 mm	23.0 mm (.906")	1.5 mm Min (.059")	1.5 mm Min (.059")	14.2±0.1 mm (.559±.004")	4.6 mm (.181") NI-360/S	4.3 mm (.169") NI-400/S	5.34 mm (.210") NI-600/S	3.5 mm (.138") TO-270 WB-4	50 mm (1.969")	0.6 mm (.024")	32.2 mm (1.272")		
												19.7 mm (.776") TO-270 WB-4	2.0 mm Min (.079")
	32.0 mm± 0.3 mm (1.260±.012") TO-270 WB-4												
44 mm	35.0 mm (1.378")	11.5±0.1 mm (.453±.004")	15.9 mm Max (.625")	20.2±0.15 mm (0.796±.006")	2.92 mm (.115") TO-272 WB-4, TO-272 WB-16	20.0±0.1 mm (.788±.004") TO-272 WB-4, TO-272 WB-16	2.0±0.15 mm (.079±.006")	.318 mm (.012") TO-272 WB-4, TO-272 WB-16	.343 mm (.013") TO-272 WB-16 Gull	44±.30 mm (1.732±.012")			
	24.0 mm (.946") TO-272 WB-4, TO-272 WB-16										3.20 mm (.126") TO-272 WB-16 Gull	16.0±0.1 mm (.630±.004") TO-272 WB-16 Gull	
													23.77 mm (.936") TO-272 WB-16 Gull

Metric dimensions govern — English are in parentheses for reference only.

NOTE 1: A₀, B₀, and K₀ are determined by component size. The clearance between the components and the cavity must be within .05 mm min. to .50 mm max., the component cannot rotate more than 10° within the determined cavity.

NOTE 2: Pitch information is contained in the Embossed Tape and Reel Ordering Information on pg. 4.

DIMENSIONS (continued)

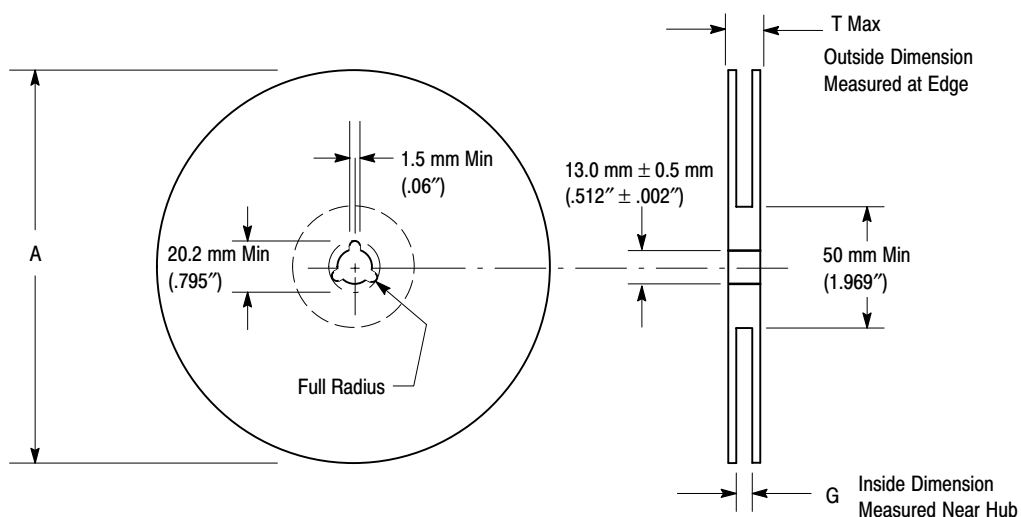
Tape Size	B ₁ Max	D	D ₁	E ₁	F	K	P ₀	P ₂	R Min	t Max	W Max	
56 mm	34.7 mm (1.366") NI-780/S NI-860 NI-880/S	1.5+0.1 mm -0.0 (.059+.004" -0.0)	2.0 mm Min (.079")	1.75±0.1 mm (.069±.004")	26.2 ±0.15 mm (1.031±.006")	4.5 mm (0.177") NI-780/S	4.0±0.1 mm (.157±.004")	2.0±0.15 mm (.079±.006")			0.6 mm (.024") NI-780/S NI-860 NI-880/S NI-1230	56±.30 mm (2.205± .012")
	5.0 mm (0.197") NI-860											
	5.23 mm (0.206") NI-880/S											
	5.2 mm (0.205") NI-1230 HF-600											
	41.6 mm (1.638") NI-1230											
	25.85 mm (1.018") HF-600									0.4 mm (.016") HF-600		

Metric dimensions govern — English are in parentheses for reference only.

NOTE 1: A₀, B₀, and K₀ are determined by component size. The clearance between the components and the cavity must be within .05 mm min. to .50 mm max., the component cannot rotate more than 10° within the determined cavity.

NOTE 2: Pitch information is contained in the Embossed Tape and Reel Ordering Information on pg. 4.

EMBOSSED TAPE AND REEL DATA FOR DISCRETES



Size	A Max	G	T Max
12 mm	330 mm (12.992")	12.4 mm + 2.0 mm, - 0.0 (.49" + .079", - 0.00)	18.4 mm (.72")
12 mm QFN 3x3	178 mm (7")	12.4 mm + 2.0 mm, - 0.0 (.49" + .079", - 0.00)	18.4 mm (.72")
12 mm SOT-89	178 mm (7")	13.5 mm (.53")	16.5 mm (.65")
16 mm	330 mm (14.173")	16.4 mm + 2.0 mm, - 0.0 (.646" + .078", - 0.00)	22.4 mm (.882")
16 mm PQFN 5x5	360 mm (14.173")	16.4 mm + 2.0 mm, - 0.0 (.646" + .078", - 0.00)	22.4 mm (.882")
24 mm	360 mm (14.173")	24.4 mm + 2.0 mm, - 0.0 (.961" + .070", - 0.00)	30.4 mm (1.197")
24 mm TO-270-2 Gull	330 mm (12.992")	24.4 mm + 2.0 mm, - 0.0 (.961" + .070", - 0.00)	30.4 mm (1.197")
32 mm	360 mm (14.163")	32.4 mm + 2.0 mm, - 0.0 (1.276" + 0.79", - 0.00)	38.4 mm (1.512")
44 mm	330 mm (12.992")	44.4 mm + 2.0 mm, - 0.0 (1.748" + 0.79", - 0.00)	50.4 mm (1.984")
44 mm TO-272 WB-4, WB-16, WB-16 Gull	330 mm (12.992")	45.3 mm + 0.5 mm, - 0.0 (1.785" + 0.02", - 0.00)	50.4 mm (1.984")
56 mm	330 mm (12.992")	56.4 mm + 2.0 mm, - 0.0 (2.220" + 0.79", - 0.00)	62 mm (2.441")

Reel Dimensions

Metric Dimensions Govern — English are in parentheses for reference only

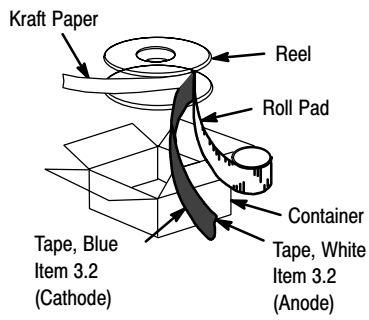


Figure 1. Reel Packing

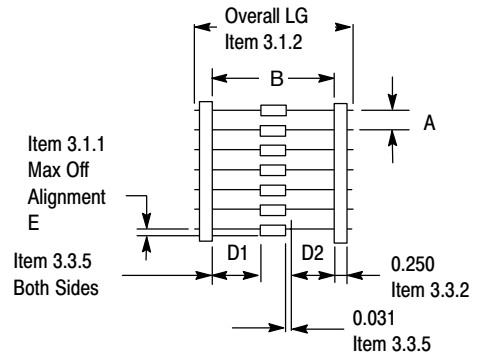


Figure 2. Component Spacing

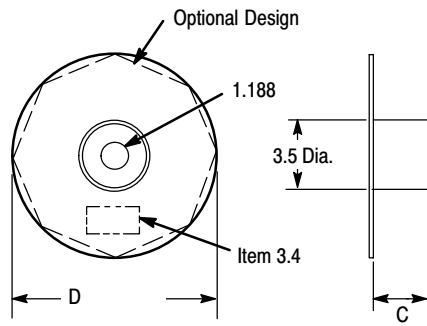


Figure 3. Reel Dimensions

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