

Surface Mount (SMD) Packaging

Reel and Carrier Tape Specifications

MINIMUM PACKING QUANTITY					
PACKAGE TYPE	Bulk Type Quantity	7" Tape and Reel		13" Tape and Reel	
		Quantity	Part Number Suffix	Quantity	Part Number Suffix
DFN Series	NA	3K	-7	10K	-13
DF-S	50	NA	NA	1.5K	-T
D ² PAK	NA	NA	NA	800	-T
D-PAK	NA	NA	NA	2500	-13
MELF	NA	NA	-7	5K	-13
MiniDIP	NA	NA	NA	3K	-T
MiniMELF	NA	2.5K	-7	10K	-13
MSOP-8L	100	NA	NA	2.5K	-13
MSOP-10L	100	NA	NA	2.5K	-13
PowerDI [®] 5	NA	NA	NA	5K	-13
PowerDI [®] 123 / POWERMITE [®] 3	NA	3K	-7	10K	-13
SC-59	NA	3K	-7	10K	-13
SMA	NA	NA	NA	5K	-13
SMB	NA	NA	NA	3K	-13
SMC	NA	NA	NA	3K	-13
SOD-123/323/523*	NA	3K*	-7*	10K	-13
SON-6L	NA	3K	-7	NA	NA
SOP-8L	100	NA	NA	2.5K	-13
SOP-14L	100	NA	NA	2.5K	-13
SOP-16L	50	NA	NA	2.5K	-13
SOT-23/323/353/363/523	NA	3K	-7	10K	-13
SOT-23/-26/SC-74R/SOT-563	NA	3K	-7	10K	-13
SOT89-3L	NA	1K	-7	2.5K	-13
SOT89-5L	NA	NA	NA	2.5K	-13
SOT-143	NA	3K	-7	10K	-13
SOT-223	75	1K	-7	2.5K	-13
SOT-553	NA	3K	-7	NA	NA
TO-252-3L / TO-252-5L	80	NA	NA	2.5K	-13
TO-263-3L / TO-263-5L	50	NA	NA	800	-13
TSSOP-14L	96	NA	NA	2.5K	-13

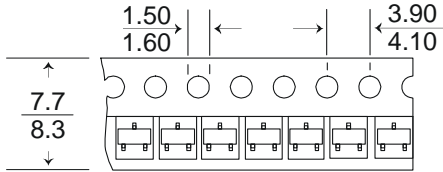
- Notes:
1. Package quantities given are for minimum packaging quantity only, not minimum order quantity. For minimum order quantity, please contact the Sales Department.
 2. No mixed date codes or partial quantity (less than minimum packaging quantity) per packaging is allowed.
 3. In no case shall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

*SOD-523 available in 6K quantity on 7-inch reel, part number suffix "-76K".

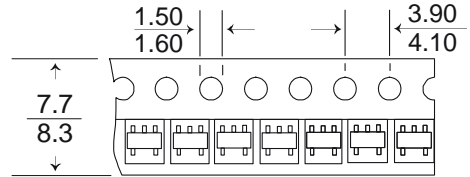
**Tape Dimensions and Orientation: (Dimensions in mm)
For Part Marking, Refer to Datasheet**

8mm

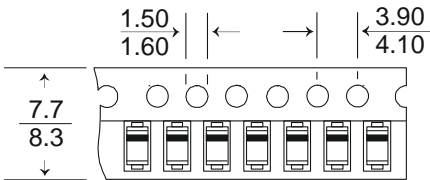
SC-59 / SOT-23 / 323 / 523



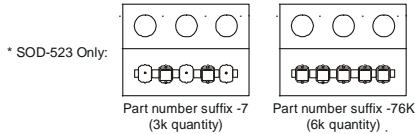
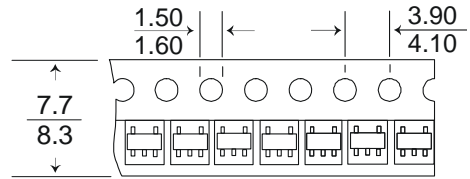
SOT-25 / SOT-353 / SOT-553



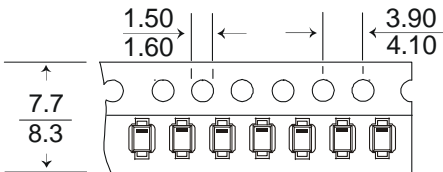
SOD-123 / 323 / 523*



SOT-25 / SOT-353 for Analog Only

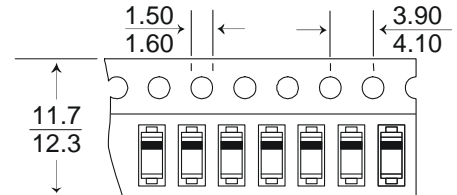


PowerDI®123 / 323

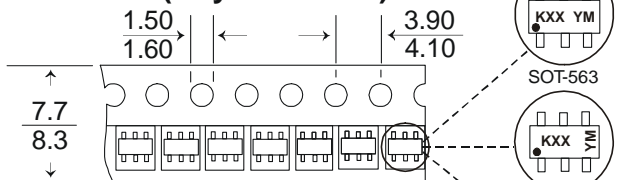


12mm

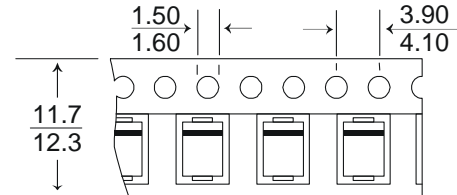
SMA



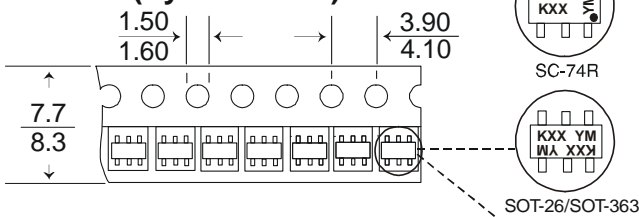
**SC-74R / SOT-26 / SOT-363 / SOT-563
(Asymmetrical)**



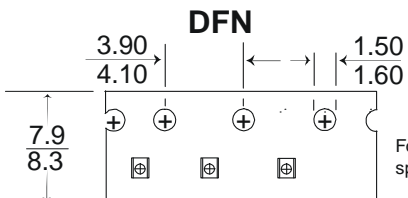
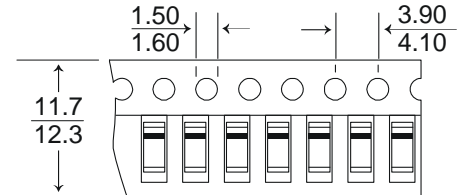
SMB



**SOT-26 / SOT-363 / SOT-563
(Symmetrical)**

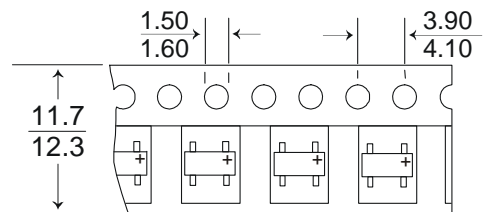


MELF



For DFN details - refer to specific datasheet.

MiniDIP

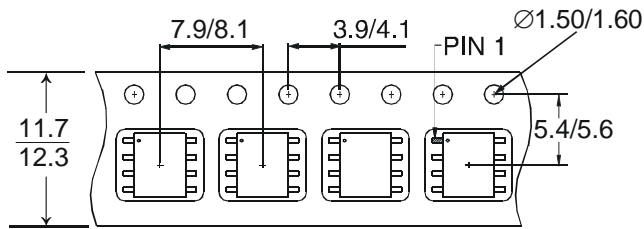


Direction of feed

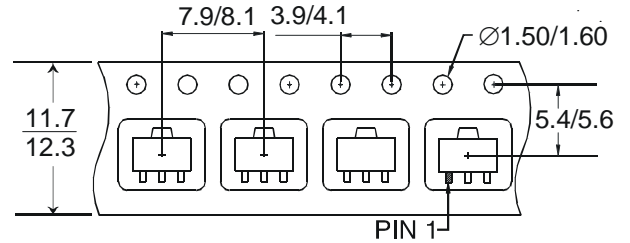
Tape Dimensions and Orientation: (Dimensions in mm)
For Part Marking, Refer to Datasheet

12mm (Continued)

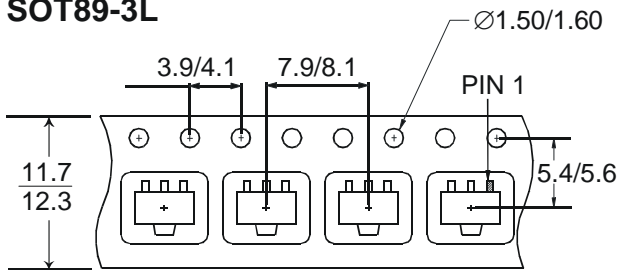
SOP-8L



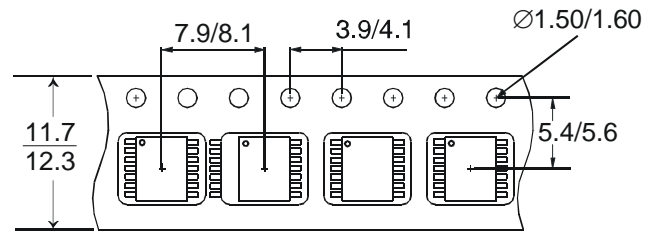
SOT-223



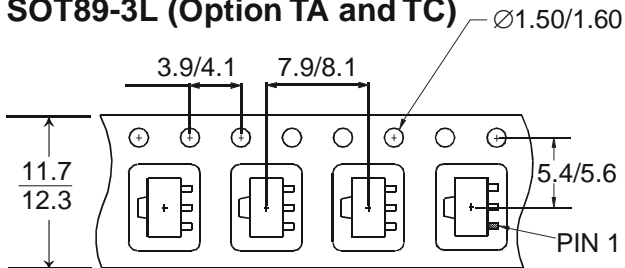
SOT89-3L



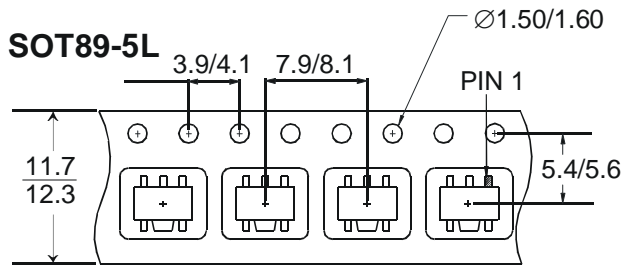
TSSOP-14L



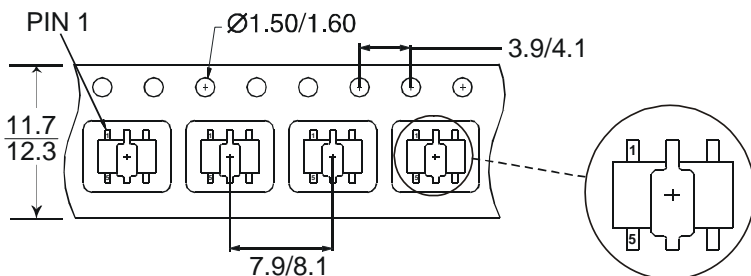
SOT89-3L (Option TA and TC)



SOT89-5L



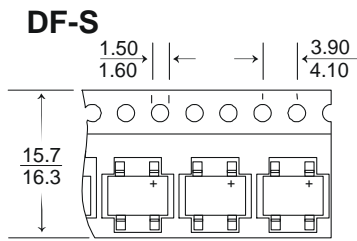
SOT89-5L (reverse taping)



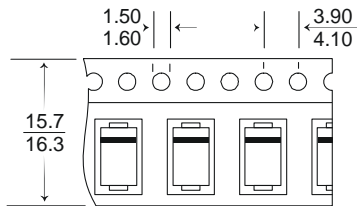
Direction of feed

Tape Dimensions and Orientation: (Dimensions in mm)
For Part Marking, Refer to Datasheet

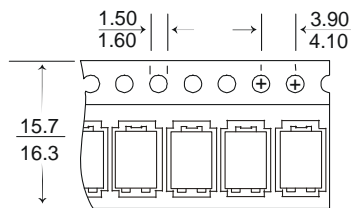
16mm



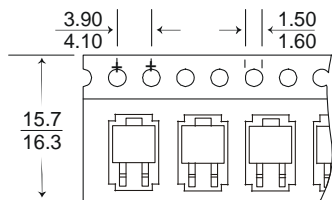
SMC



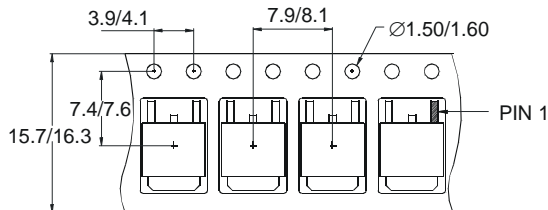
PowerDI®5



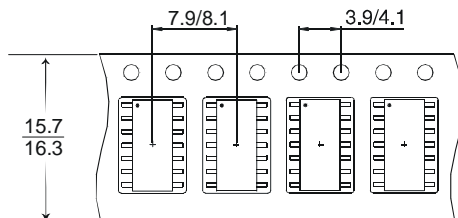
POWERMITE®3



TO252 / D-PAK

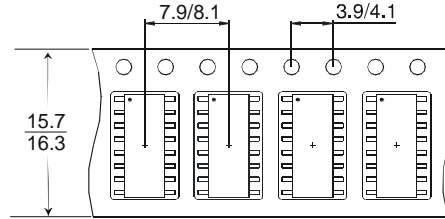


SOP-14L



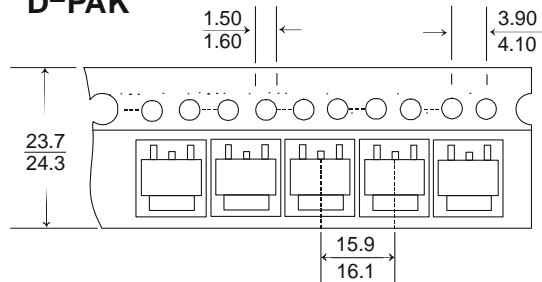
16mm

SOP-16L

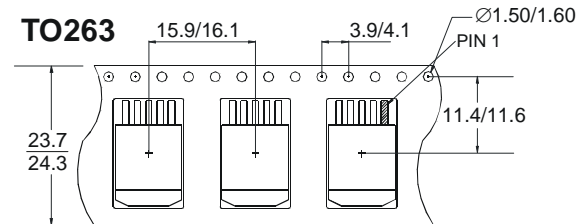


24mm

D²PAK



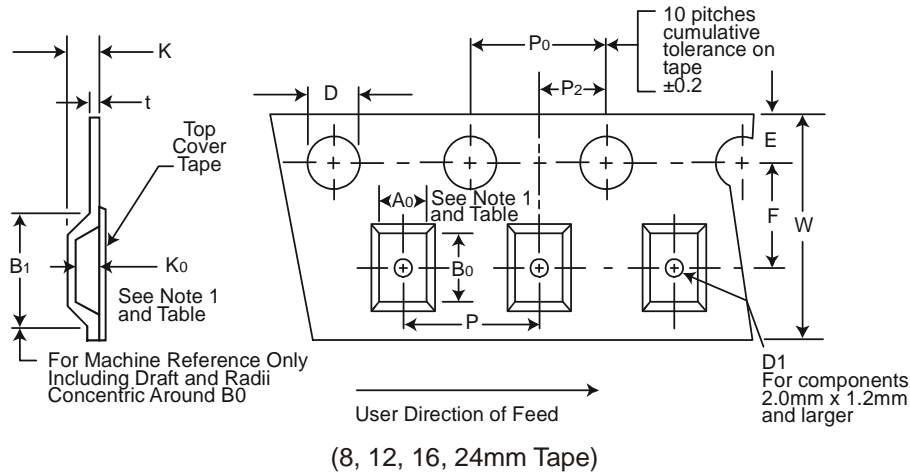
TO263



Direction of feed



EMBOSSED CARRIER TAPE SPECIFICATIONS

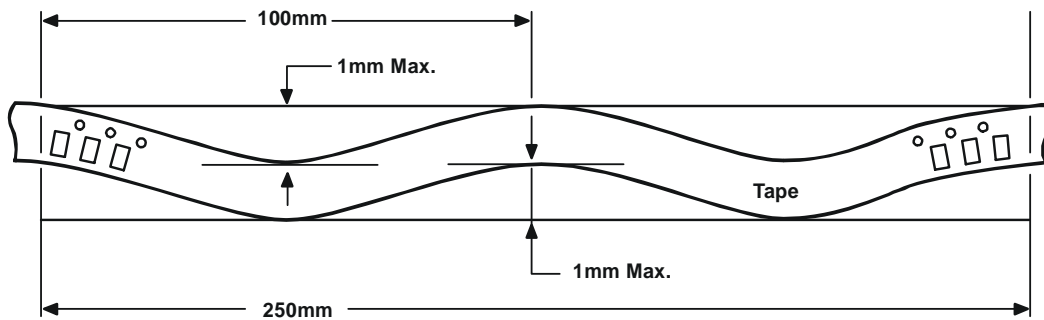
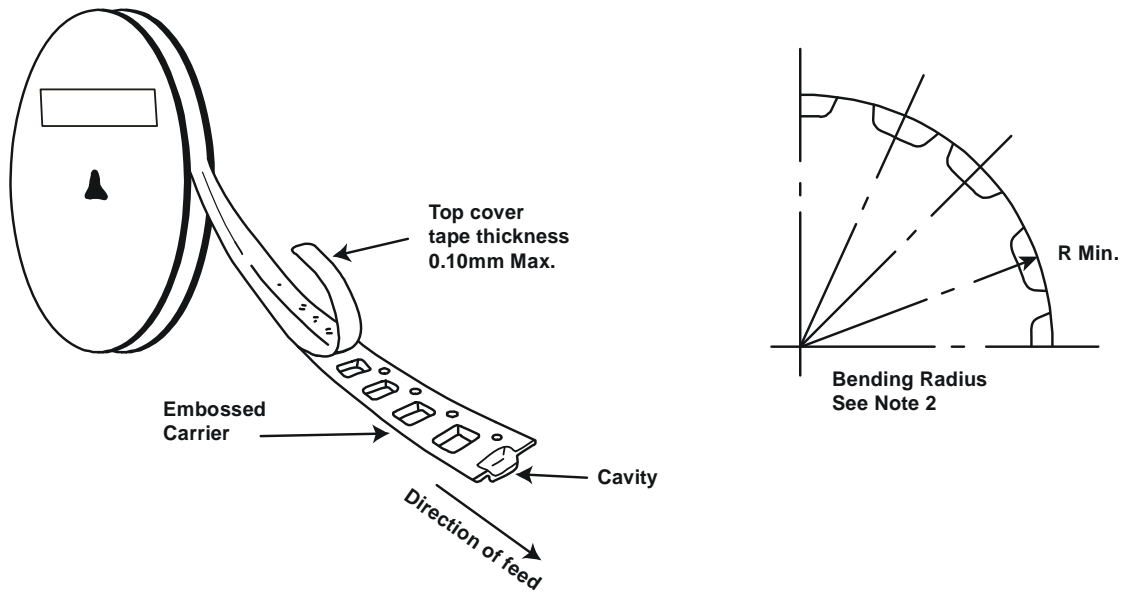


8, 12, 16, 24mm EMBOSSED TAPE DIMENSIONS IN mm						
Tape Size	D	E	P ₀	t _{max}	A ₀ B ₀ K ₀	Constant Dimensions
8, 12, 16, 24mm	1.50 ^{+0.10} _{-0.0}	1.75 ± 0.10	4.0 ± 0.10	0.400	See Note 1	

8, 12, 16, 24mm EMBOSSED TAPE DIMENSIONS IN mm								
Tape Size	B ₁ max	D ₁ min	F	K max	P ₂	R min	W	Product Type
8mm	4.5	1.0	3.5 ± 0.05	2.4	2.0 ± 0.05	25	8.0 ± 0.30	DFN Series, SOT-23, SOT-25, SOT-26, SOT-143, SOT-323, SOT53, MiniMELF, PowerDI [®] 123, PowerDI [®] 323, SOD-123, SOD-323, SOD-523, SC-59, SC-74R
12mm	8.2	1.5	5.5 ± 0.05	4.5	2.0 ± 0.05	30	12.0 ± 0.30	MELF, SMA, SMB, miniDIP, SOP-8L, SOT-223, SOT-89
16mm	12.1	1.4 1.5 1.5 1.5	7.5 ± 0.10 7.5 ± 0.10 7.5 ± 0.10 7.5 ± 0.05	2.25 3.29 3.70 2.89	2.0 ± 0.10 2.0 ± 0.10 2.0 ± 0.10 2.0 ± 0.05	40	16.0 ± 0.30 16.0 ± 0.30 16.0 ± 0.30 16.0 ± 0.2	SOP-14L, SOP-16L, SMC DFS, POWERMITE [®] 3 PowerDI [®] 5, TO-252
24mm	20.1	1.5	11.5 ± 0.10	6.5	2.0 ± 0.10	50	24.0 ± 0.30	D ² PAK, TO-263

P					
Tape Size	2.0 ± 0.05	4.0 ± 0.10	8.0 ± 0.10	12.0 ± 0.10	16.0 ± 0.10
8mm	SOD-523-76K	See above (except SOD-523-76K)	—	—	—
12mm	—	SMA, MELF	SMB, miniDIP, SOP-8L, SOT-89L, SOT-223	—	—
16mm	—	—	SMC, D-PAK, SOP-14L, SOP-16L, PowerDI [®] 5	DF-S	—
24mm	—	—	—	—	D ² PAK

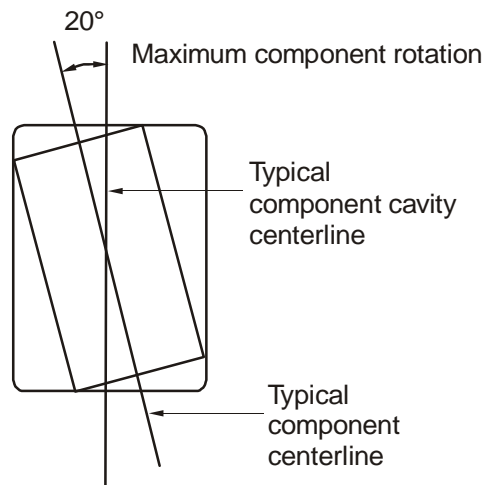
Notes: 1. A₀ B₀ K₀ are determined by component size. The clearance between the component and the cavity must be within 0.5mm min. to 0.50mm max. for 8mm tape, 0.55mm min. to 0.65mm max. for 12mm tape and 0.15mm min. to 0.90mm max. for 16mm tape.



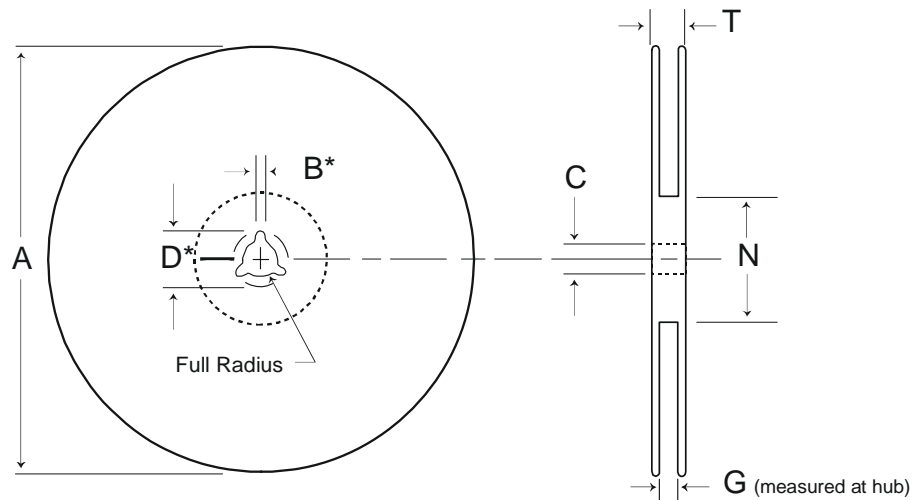
Camber (Top View)

Allowable camber to be 1.0mm/100mm non-accumulative over 250mm

- Notes:
2. Add 0.05mm min. to 1.00mm min. for 24mm tape and larger. The component cannot rotate more than 20° within the determined cavity, see sketch next page.
 3. Tape and components shall pass around radius 'R' without damage.



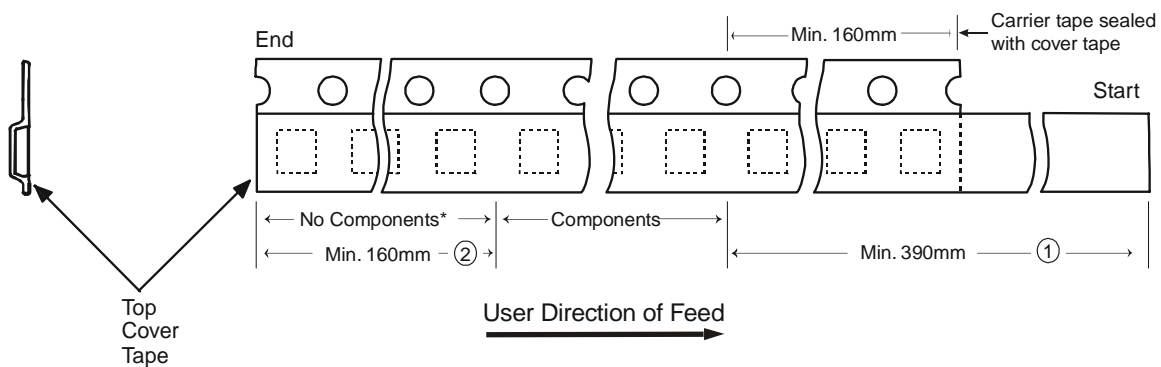
SURFACE MOUNT CARRIER TAPE SPECIFICATIONS SURFACE MOUNT REEL SPECIFICATIONS (All Dimensions in mm)



* Drive spokes optional. If used, dimensions with asterisks apply.

Tape Size	A Max	B* Max	C	D* Max	N Min	G	T Max
8mm	330 ±2	2.0 ^{+0.5} ₋₀	13 ^{+0.5} _{-0.2}	20.5 ±0.2	100 ±2	8.4 ^{+2.0} _{-0.0}	14.4
	178 ±2	2.0 ^{+0.5} ₋₀	13 ^{+0.5} _{-0.2}	20.5 ±0.2	55 ±5	8.4 ^{+1.5} _{-0.0}	14.4
12mm	330 ±2	2.0 ^{+0.5} ₋₀	13 ^{+0.5} _{-0.2}	20.5 ±0.2	100 ±2	12.4 ^{+2.0} _{-0.0}	18.4
	178 ±2	2.0 ^{+0.5} ₋₀	13 ^{+0.5} _{-0.2}	20.5 ±0.2	55 ±5	12.4 ^{+2.0} _{-0.0}	18.4
16mm	330 ±2	2.0 ^{+0.5} ₋₀	13 ^{+0.5} _{-0.2}	20.5 ±0.2	100 ±2	16.4 ^{+2.0} _{-0.0}	22.4
24mm	330 ±2	2.0 ^{+0.5} ₋₀	13 ^{+0.5} _{-0.2}	20.5 ±0.2	100 ±2	24.4 ^{+2.0} _{-0.0}	30.4

Tape Leader and Trailer



- Notes:
1. There shall be a leader of 230mm [9.05] minimum which may consist of carrier and/or cover tape or a start tape followed by a minimum of 160mm [6.30] of empty carrier tape sealed with cover tape.
 2. There shall be a trailer of 160mm [6.30] minimum of empty carrier tape sealed with cover tape. The entire carrier tape must release from the reel hub as the last portion of the tape unwinds from the reel without damage to the carrier tape and the remaining components in the cavities.