

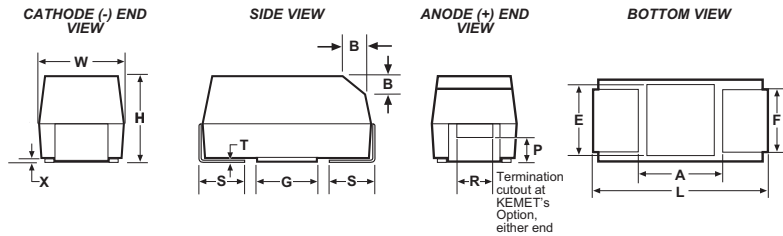
KEMET^{CHARGED} CONDUCTIVE POLYMER CHIP CAPACITORS

T530 SERIES - High Capacitance/Ultra-Low ESR

FEATURES

- Highest CV in Standard EIA Size
- Extremely Low ESR
- Operating Temperature: -55°C to 125°C
- Polymer Cathode Technology
- High Frequency Capacitance Retention
- Non-Ignition Failure Mode
- Capacitance: 150 to 1500 μ F
- Voltage: 2.5V to 10V
- Molded Case (pick-and-place precision)
- 100% Accelerated Steady State Aging
- 100% Surge Current Testing
- Utilizes Multiple Tantalum Anode Technology
- Volumetric Efficiency
- Use Up to 90% of Rated Voltage (10% Derating)
- Self-Healing Mechanism
- True SMT Capability
- RoHS Compliant/Lead Free

OUTLINE DRAWINGS



DIMENSIONS - MILLIMETERS (INCHES)

Case Size		L	W	H	F ± 0.1	S ± 0.3	X (Ref)	T (Ref)	A (Min)	G (Ref)	E (Ref)
KEMET	EIA										
D	7343-31	7.3 ± 0.3	4.3 ± 0.3	2.8 ± 0.3	2.4	1.3	0.10 ± 0.10	0.13	3.8	3.5	3.5
Y	7343-40	7.3 ± 0.3	4.3 ± 0.3	4.0 max	2.4	1.3	0.10 ± 0.10	0.13	3.8	3.5	3.5
X	7373-43	7.3 ± 0.3	4.3 ± 0.3	4.0 ± 0.3	2.4	1.3	0.10 ± 0.10	0.13	3.8	3.5	3.5

T530 RATINGS & PART NUMBER REFERENCE

Rated Voltage (V)	Rated Capacitance (μ F)	Case Code/ Case Size	KEMET Part Number	DC Leakage μ A @ 20°C max/ 5min	DF% @ 20°C 120 Hz Max	ESR m Ω @ 20°C 100 kHz Max	Maximum allowable ripple current (mA rms) 100kHz*	MSL Reflow Temp $\leq 260^\circ$ C
2.5	470	D/7343-31	T530D477M2R5A(1)E005	118	8.0	5.0	7100	3
	470	D/7343-31	T530D477M2R5A(1)E006	118	8.0	6.0	6500	
	470	D/7343-31	T530D477M2R5A(1)E010	118	10.0	10.0	5000	
	560	D/7343-31	T530D567M2R5A(1)E005	140	8.0	5.0	7100	
	680	Y/7343-40	T530Y687M2R5A(1)E005	170	8.0	5.0	7300	
	680	Y/7343-40	T530Y687M2R5A(1)E006	170	8.0	6.0	6600	
	680	D/7343-31	T530D687M2R5A(1)E006	170	8.0	6.0	6500	
	680	D/7343-31	T530D687M2R5A(1)E010	170	8.0	10.0	5000	
	680	X/7343-43	T530X687M2R5A(1)E006	170	8.0	6.0	6700	
	1000	Y/7343-40	T530Y108M2R5A(1)E005	250	8.0	5.0	7300	
	1000	Y/7343-40	T530Y108M2R5A(1)E006	250	8.0	6.0	6600	
	1000	X/7343-43	T530X108M2R5A(1)E004	250	8.0	4.0	8200	
	1000	X/7343-43	T530X108M2R5A(1)E005	250	8.0	5.0	7300	
	1000	X/7343-43	T530X108M2R5A(1)E006	250	8.0	6.0	6700	
	1500	X/7343-43	T530X158M2R5A(1)E005	375	8.0	5.0	7300	
3	470	D/7343-31	T530D477M003A(1)E010	141	8.0	10.0	5000	3
	680	D/7343-31	T530D687M003A(1)E010	204	8.0	10.0	5000	
	1000	X/7343-43	T530X108M003A(1)E010	300	8.0	10.0	5200	
	1500	X/7343-43	T530X158M003A(1)E008	450	8.0	8.0	5800	
4	330	D/7343-31	T530D337M004A(1)E005	132	8.0	5.0	7100	3
	330	D/7343-31	T530D337M004A(1)E006	132	8.0	6.0	6500	
	470	D/7343-31	T530D477M004A(1)E006	188	8.0	6.0	6500	
	470	D/7343-31	T530D477M004A(1)E010	188	8.0	10.0	5000	
	470	Y/7343-40	T530Y477M004A(1)E005	188	8.0	5.0	7300	
	470	Y/7343-40	T530Y477M004A(1)E006	188	8.0	6.0	6600	
	680	Y/7343-40	T530Y687M004A(1)E005	272	8.0	5.0	7300	
	680	X/7343-43	T530X687M004A(1)E004	272	8.0	4.0	8200	
	680	X/7343-43	T530X687M004A(1)E005	272	8.0	5.0	7300	
	680	X/7343-43	T530X687M004A(1)E006	272	8.0	6.0	6700	
	680	X/7343-43	T530X687M004A(1)E010	272	8.0	10.0	5200	
	1000	X/7343-43	T530X108M004A(1)E006	400	8.0	6.0	6700	

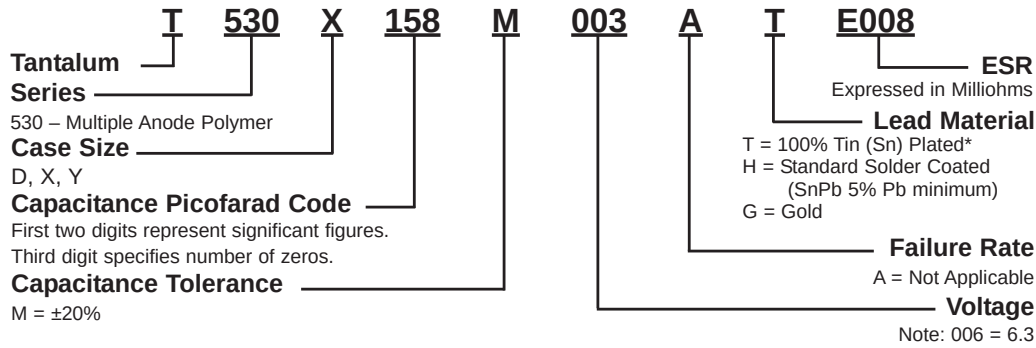
Rated Voltage (V)	Rated Capacitance (μ F)	Case Code/ Case Size	KEMET Part Number	DC Leakage μ A @ 20°C max/ 5min	DF% @ 20°C 120 Hz Max	ESR m Ω @ 20°C 100 kHz Max	Maximum allowable ripple current (mA rms) 100kHz*	MSL Reflow Temp $\leq 260^\circ$ C
6.3	220	D/7343-31	T530D227M006A(1)E005	139	8.0	5.0	7100	3
	220	D/7343-31	T530D227M006A(1)E006	139	8.0	6.0	6500	
	330	D/7343-31	T530D337M006A(1)E006	208	8.0	6.0	6500	
	330	D/7343-31	T530D337M006A(1)E010	208	8.0	10.0	5000	
	330	Y/7343-40	T530Y337M006A(1)E005	208	8.0	5.0	7300	
	330	Y/7343-40	T530Y337M006A(1)E006	208	8.0	6.0	6600	
	330	Y/7343-40	T530Y337M006A(1)E010	208	8.0	10.0	5100	
	470	Y/7343-40	T530Y477M006A(1)E005	296	8.0	5.0	7300	
	470	X/7343-43	T530X477M006A(1)E004	296	8.0	4.0	8200	
	470	X/7343-43	T530X477M006A(1)E005	296	8.0	5.0	7300	
	470	X/7343-43	T530X477M006A(1)E006	296	8.0	6.0	6700	
	470	X/7343-43	T530X477M006A(1)E010	296	8.0	10.0	5200	
	680	X/7343-43	T530X687M006A(1)E010	428	8.0	10.0	5200	
	680	X/7343-43	T530X687M006A(1)E018	428	8.0	18.0	3900	
10	150	D/7343-31	T530D157M010A(1)E005	150	8.0	5.0	7100	3
	150	D/7343-31	T530D157M010A(1)E006	150	8.0	6.0	6500	
	150	D/7343-31	T530D157M010A(1)E010	150	8.0	10.0	5000	
	220	D/7343-31	T530D227M010A(1)E006	220	8.0	6.0	6500	
	220	D/7343-31	T530D227M010A(1)E010	220	8.0	10.0	5000	
	220	Y/7343-40	T530Y227M010A(1)E006	220	8.0	6.0	6600	
	330	X/7343-43	T530X337M010A(1)E004	330	8.0	4.0	8200	
	330	X/7343-43	T530X337M010A(1)E005	330	8.0	5.0	7300	
	330	X/7343-43	T530X337M010A(1)E006	330	8.0	6.0	6700	
	330	X/7343-43	T530X337M010A(1)E010	330	8.0	10.0	5200	
16	150	X/7343-43	T530X157M016A(1)E015	240	8.0	15.0	4200	3
	150	X/7343-43	T530X157M016A(1)E025	240	8.0	25.0	3300	
	150	X/7343-43	T530X157M016A(1)E040	240	8.0	40.0	2600	

*100kHz to 500kHz, 45°C

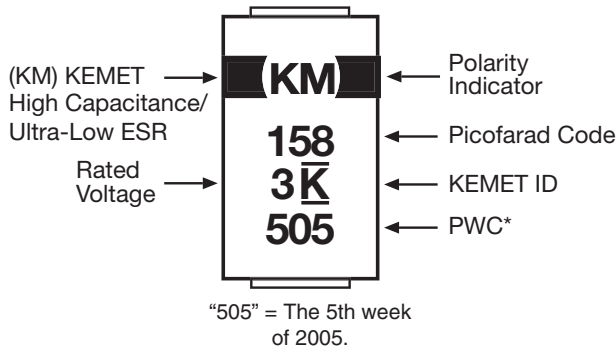
(1) To complete KEMET part number, insert lead material designation from ordering information on page 57.

Higher voltage ratings and tighter tolerance product may be substituted within the same size at KEMET's option. Voltage substitutions will be marked with the higher voltage ratings.

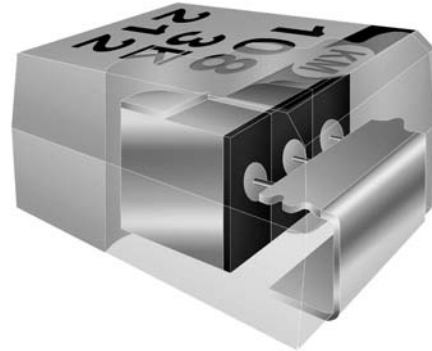
T530 ORDERING INFORMATION



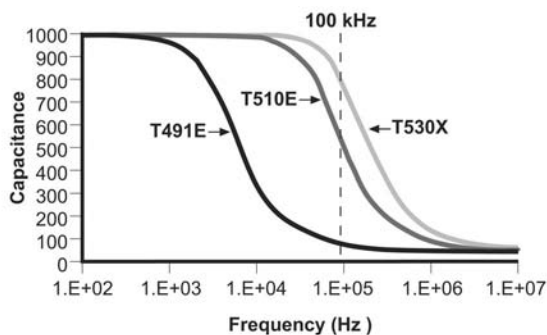
COMPONENT MARKING



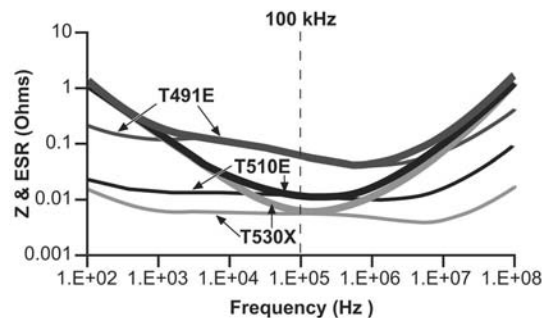
T530 SERIES CONSTRUCTION



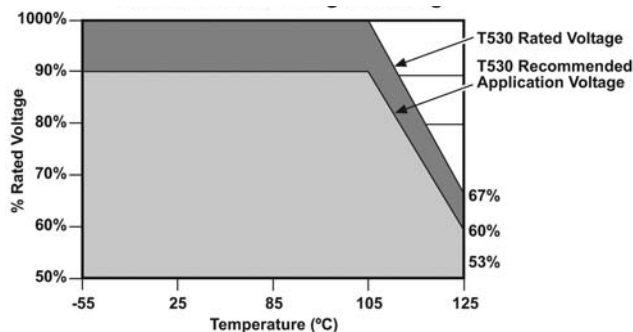
T530X/T510E/T491E 1,000μF Capacitance vs. Frequency



T530X/T510E/T491E 1,000μF Impedance & ESR vs. Frequency

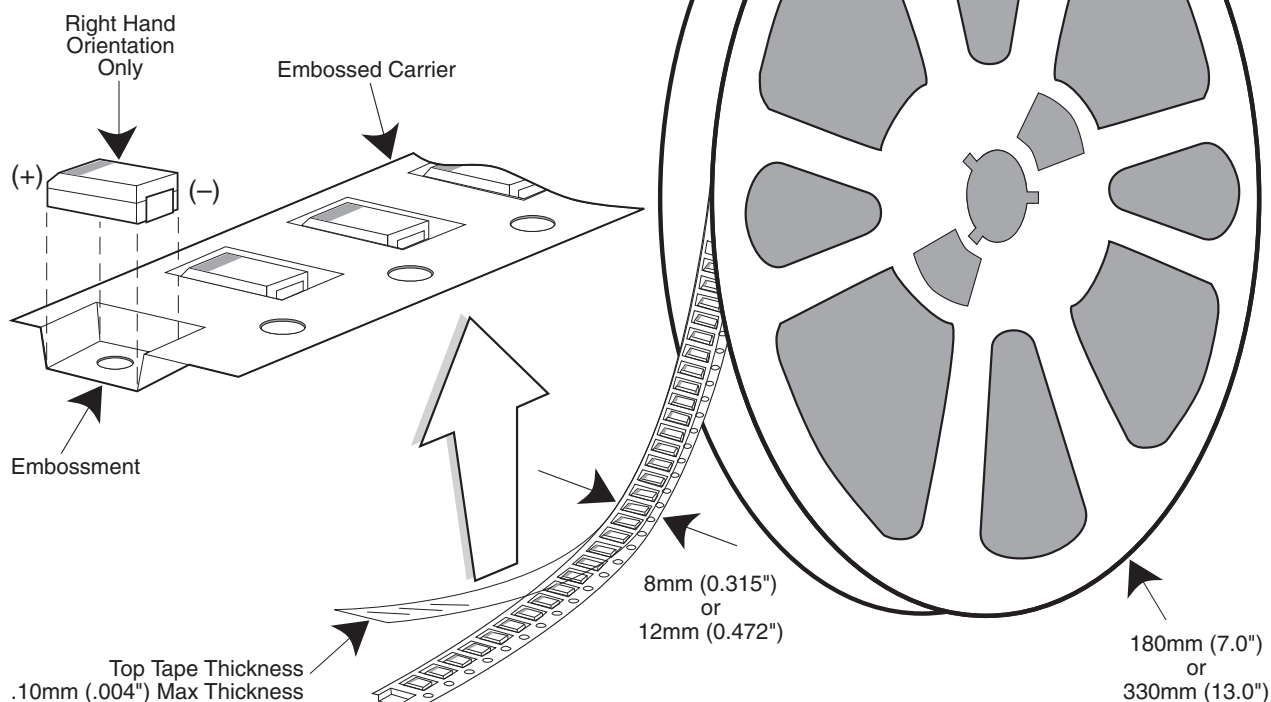


RECOMMENDED TEMPERATURE/VOLTAGE DERATING



Tape & Reel Packaging

KEMET's Molded Tantalum and Aluminum Chip Capacitor families are packaged in 8 mm and 12 mm plastic tape on 7" and 13" reels, in accordance with EIA Standard 481-1: Taping of Surface Mount Components for Automatic Handling. This packaging system is compatible with all tape fed automatic pick and place systems.



Labeling: Bar code labeling (standard or custom) shall be on the side of the reel opposite the sprocket holes. Refer to EIA-556.

QUANTITIES PACKAGED PER REEL

Case Code		Tape Width-mm	7" Reel*	13" Reel
KEMET	EIA			
R	2012-12	8	2,500	10,000
I	3216-10	8	3,000	12,000
S	3216-12	8	2,500	10,000
T	3528-12	8	2,500	10,000
M	3528-15	8	2,000	8,000
U	6032-15	12	1,000	5,000
L	6032-19	12	1,000	5,000
W	7343-15	12	1,000	3,000
Z	7343-17	12	1,000	3,000
V	7343-20	12	1,000	3,000
A	3216-18	8	2,000	9,000
B	3528-21	8	2,000	8,000
C	6032-28	12	500	3,000
D	7343-31	12	500	2,500
Y	7343-40	12	500	2,000
X	7343-43	12	500	2,000
E	7260-38	12	500	2,000

* No c-spec required for 7" reel packaging. C-7280 required for 13" reel packaging.

Performance Notes

- Cover Tape Break Force:** 1.0 Kg Minimum.
- Cover Tape Peel Strength:** The total peel strength of the cover tape from the carrier tape shall be:

Tape Width	Peel Strength
8 mm	0.1 Newton to 1.0 Newton (10g to 100g)
12 mm	0.1 Newton to 1.3 Newton (10g to 130g)

The direction of the pull shall be opposite the direction of the carrier tape travel. The pull angle of the carrier tape shall be 165° to 180° from the plane of the carrier tape. During peeling, the carrier and/or cover tape shall be pulled at a velocity of 300 ±10 mm/minute.

- Reel Sizes:** Molded tantalum capacitors are available on either 180 mm (7") reels (standard) or 330 mm (13") reels (with C-7280). Note that 13" reels are preferred.
- Labeling:** Bar code labeling (standard or custom) shall be on the side of the reel opposite the sprocket holes. Refer to EIA-556.

Embossed Carrier Tape Configuration: Figure 1

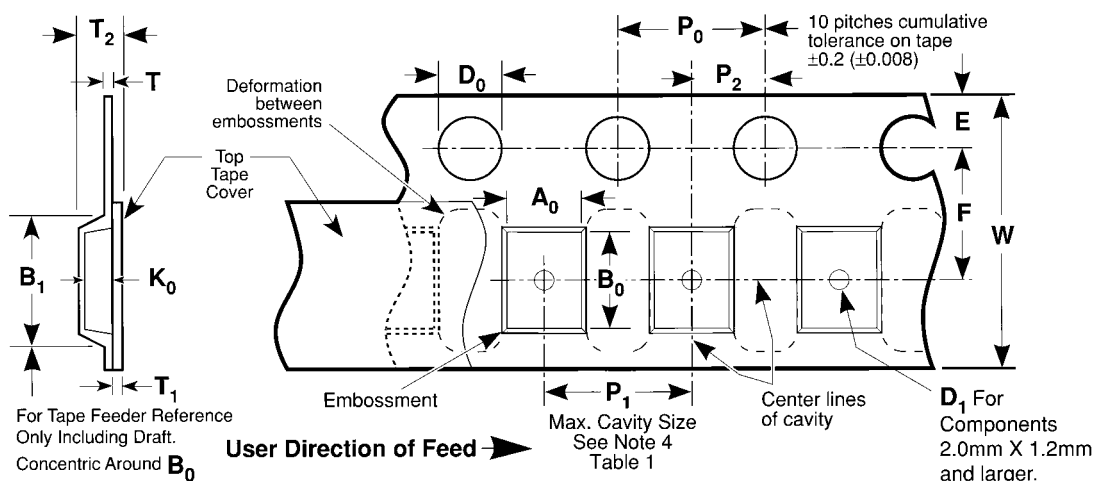


Table 1 — EMBOSSED TAPE DIMENSIONS (Metric will govern)

Constant Dimensions — Millimeters (Inches)									
Tape Size	D ₀	E	P ₀	P ₂	T Max	T ₁ Max			
8 mm and 12 mm	1.5 +0.10 -0.0 (0.059 +0.004, -0.0)	1.75 ±0.10 (0.069 ±0.004)	4.0 ±0.10 (0.157 ±0.004)	2.0 ±0.05 (0.079 ±0.002)	0.600 (0.024)	0.100 (0.004)			
Variable Dimensions — Millimeters (Inches)									
Tape Size	Pitch	B ₁ Max. Note 1	D ₁ Min. Note 2	F	P ₁	R Min. Note 3	T ₂ Max	W	A ₀ B ₀ K ₀ Note 4
8 mm	Single (4 mm)	4.4 (0.173)	1.0 (0.039)	3.5 ±0.05 (0.138 ±0.002)	4.0 ±0.10 (0.157 ±0.004)	25.0 (0.984)	2.5 (0.098)	8.0 ±0.30 (.315 ±0.012)	
12 mm	Double (8 mm)	8.2 (0.323)	1.5 (0.059)	5.5 ±0.05 (0.217 ±0.002)	8.0 ±0.10 (0.315 ±0.004)	30.0 (1.181)	4.6 (0.181)	12.0 ±0.30 (0.472 ±0.012)	

NOTES

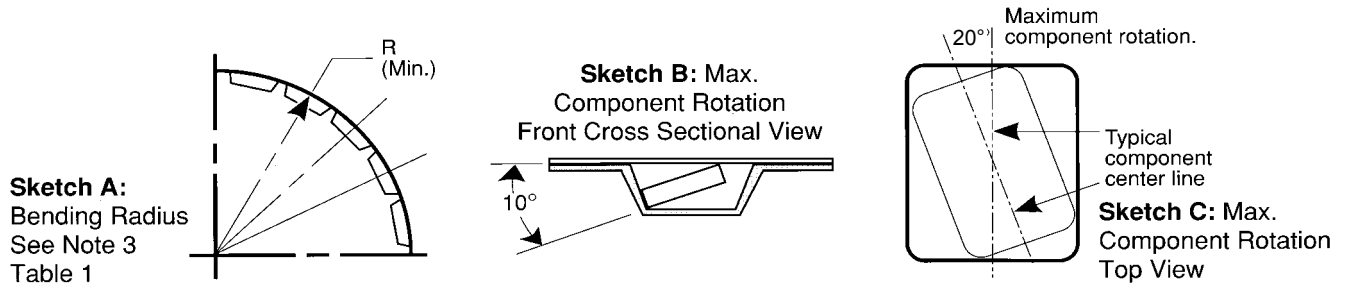
- B₁ dimension is a reference dimension for tape feeder clearance only.
- The embossment hole location shall be measured from the sprocket hole controlling the location of the embossment. Dimensions of embossment location and hole location shall be applied independent of each other.
- Tape with components shall pass around radius "R" without damage (see sketch A). The minimum trailer length (Fig. 2) may require additional length to provide R min. for 12 mm embossed tape for reels with hub diameters approaching N min. (Table 2)
- The cavity defined by A₀, B₀, and K₀ shall be configured to surround the part with sufficient clearance such that the chip does not protrude beyond the sealing plane of the cover tape, the chip can be removed from the cavity in a vertical direction without mechanical restriction, rotation of the chip is limited to 20 degrees maximum in all 3 planes, and lateral movement of the chip is restricted to 0.5 mm maximum in the pocket (not applicable to vertical clearance.)

TANTALUM, CERAMIC AND ALUMINUM CHIP CAPACITORS



Packaging Information

Embossed Carrier Tape Configuration (cont.)



Sketch D: Tape Camber (Top View)

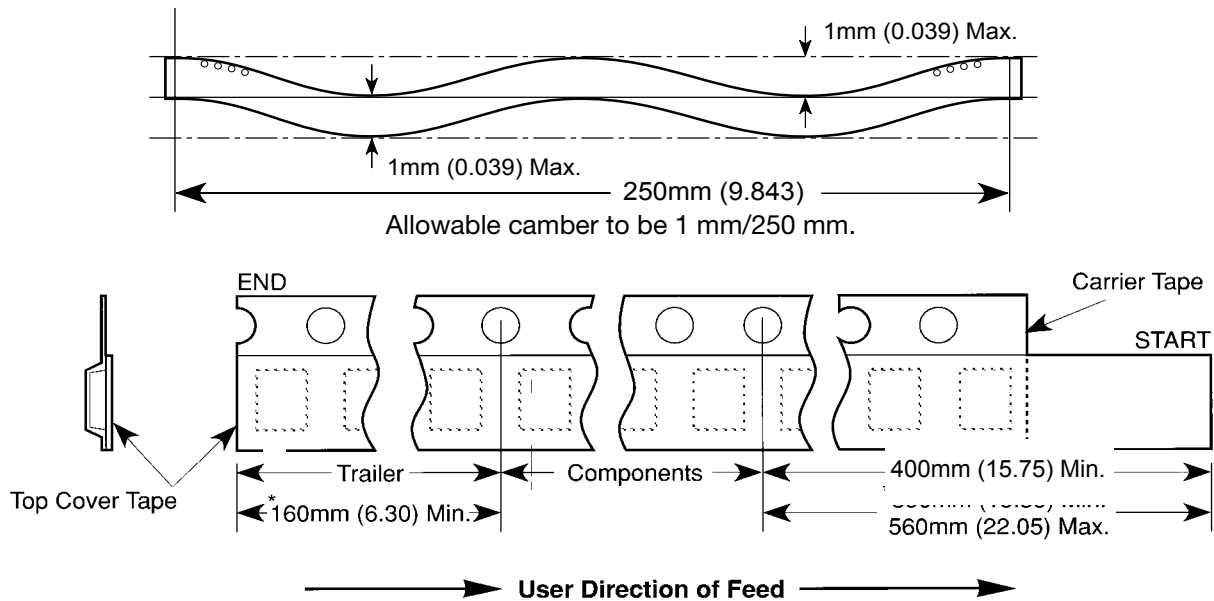


Figure 2:
Tape Leader
& Trailer
Dimensions
(Metric
Dimensions
Will Govern)

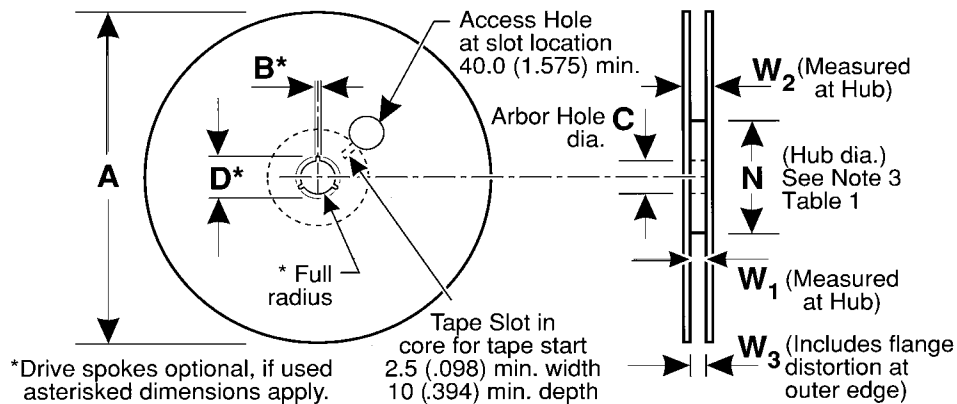


Figure 3: Reel Dimensions (Metric Dimensions will govern)

Table 2 – REEL DIMENSIONS (Metric will govern)

Tape Size	A Max	B* Min	C	D* Min	N Min	W ₁	W ₂ Max	W ₃
8 mm	330.0 (12.992)	1.5 (0.059)	13.0 ± 0.20 (0.512 ± 0.008)	20.2 (0.795)	50.0 (1.969) See Note 3 Table 1	8.4 +1.5, -0.0 (0.331 +0.059, -0.0)	14.4 (0.567)	7.9 Min (0.311) 10.9 Max (0.429)
12 mm	330.0 (12.992)	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)	11.9 Min (0.469) 15.4 Max (0.606)