

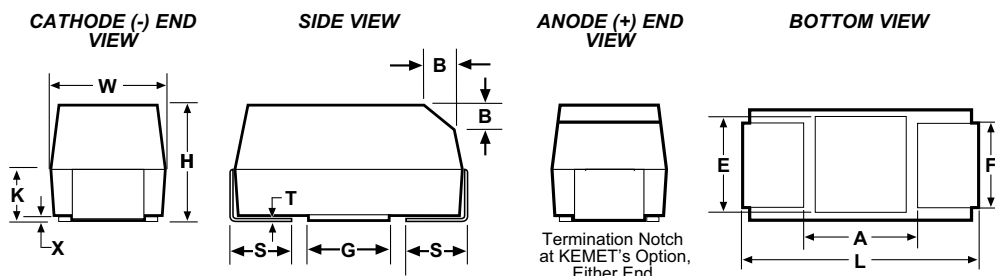
CONDUCTIVE POLYMER CHIP CAPACITORS **KEMET**

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	K ± 0.20	F ± 0.1	S ± 0.3	X(Ref)	T(Ref)	A(Min)	G(ref)	E(ref)
KEMET	EIA											
D	7343-31	7.3 \pm 0.3	4.3 \pm 0.3	2.8 \pm 0.3	1.5	2.4	1.3	0.10 \pm 0.10	0.13	3.8	3.5	3.5
Y	7343-40	7.3 \pm 0.3	4.3 \pm 0.3	4.0 max	1.9	2.4	1.3	0.10 \pm 0.10	0.13	3.8	3.5	3.5
X	7343-43	7.3 \pm 0.3	4.3 \pm 0.3	4.0 \pm 0.3	2.3	2.4	1.3	0.10 \pm 0.10	0.13	3.8	3.5	3.5

T530 RATINGS & PART NUMBER REFERENCE

Capacitance μ F	Case Size	KEMET Part Number	DCL V_R	DF % 120Hz	ESR m Ω @100 kHz 25°C Max	Ripple Current (Arms) @ 100 kHz	
						w/ Δ T= 20°C @ -55°C to 105°C	w/ Δ T= 2°C @ 125°C
2.5 Volt Rating at 105°C (1.7 Volt Rating at 125°C)							
470.0	D	T530D477M2R5A(1)E005	118 μ A	8.0	5.0	7.1	2.3
470.0	D	T530D477M2R5A(1)E006	118 μ A	8.0	6.0	6.5	2.1
470.0	D	T530D477M2R5A(1)E010	118 μ A	10.0	10.0	5.0	1.6
560.0	D	T530D567M2R5A(1)E005	140 μ A	8.0	5.0	7.1	2.3
680.0	Y	T530Y687M2R5A(1)E005	170 μ A	8.0	5.0	7.2	2.3
680.0	Y	T530Y687M2R5A(1)E006	170 μ A	8.0	6.0	6.6	2.1
680.0	D	T530D687M2R5A(1)E006	170 μ A	8.0	6.0	6.5	2.1
680.0	D	T530D687M2R5A(1)E010	170 μ A	8.0	10.0	5.0	1.6
680.0	X	T530X687M2R5A(1)E006	170 μ A	8.0	6.0	6.7	2.1
1000.0	Y	T530Y108M2R5A(1)E005	250 μ A	8.0	5.0	7.2	2.3
1000.0	Y	T530Y108M2R5A(1)E006	250 μ A	8.0	6.0	6.6	2.1
1000.0	X	T530X108M2R5A(1)E004	250 μ A	8.0	4.0	8.2	2.6
1000.0	X	T530X108M2R5A(1)E005	250 μ A	8.0	5.0	7.3	2.3
1000.0	X	T530X108M2R5A(1)E006	250 μ A	8.0	6.0	6.7	2.1
1500.0	X	T530X158M2R5A(1)E005	375 μ A	8.0	5.0	7.3	2.3
3 Volt Rating at 105°C (2 Volt Rating at 125°C)							
470.0	D	T530D477M003A(1)E010	141 μ A	8.0	10.0	5.0	1.6
680.0	D	T530D687M003A(1)E010	204 μ A	8.0	10.0	5.0	1.6
1000.0	X	T530X108M003A(1)E010	300 μ A	8.0	10.0	5.2	1.6
1500.0	X	T530X158M003A(1)E008	450 μ A	8.0	8.0	5.8	1.8
4 Volt Rating at 105°C (2.7 Volt Rating at 125°C)							
330.0	D	T530D337M004A(1)E005	132 μ A	8.0	5.0	7.1	2.3
330.0	D	T530D337M004A(1)E006	132 μ A	8.0	6.0	6.5	2.1
470.0	D	T530D477M004A(1)E006	188 μ A	8.0	6.0	6.5	2.1
470.0	D	T530D477M004A(1)E010	188 μ A	8.0	10.0	5.0	1.6
470.0	Y	T530Y477M004A(1)E005	188 μ A	8.0	5.0	7.2	2.3
470.0	Y	T530Y477M004A(1)E006	188 μ A	8.0	6.0	6.6	2.1
680.0	Y	T530Y687M004A(1)E005	272 μ A	8.0	5.0	7.2	2.3
680.0	X	T530X687M004A(1)E004	272 μ A	8.0	4.0	8.2	2.6
680.0	X	T530X687M004A(1)E005	272 μ A	8.0	5.0	7.3	2.3
680.0	X	T530X687M004A(1)E006	272 μ A	8.0	6.0	6.7	2.1
680.0	X	T530X687M004A(1)E010	272 μ A	8.0	10.0	5.2	1.6
1000.0	X	T530X108M004A(1)E006	400 μ A	8.0	6.0	6.7	2.1

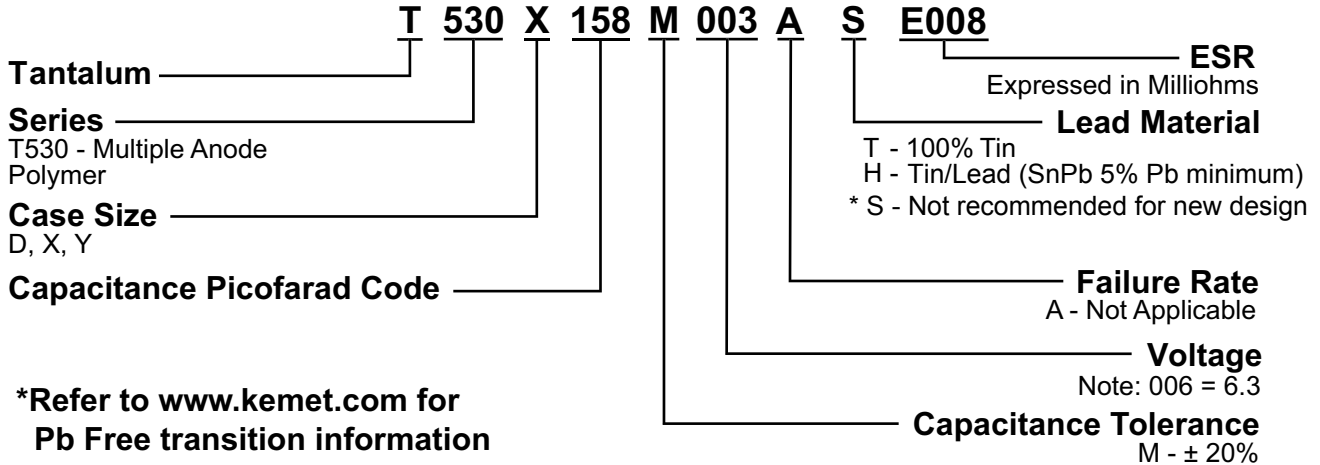
Capacitance μ F	Case Size	KEMET Part Number	DCL V_R	DF % 120Hz	ESR m Ω @100 kHz 25°C Max	Ripple Current (Arms) @ 100 kHz	
						w/ Δ T= 20°C @ -55°C to 105°C	w/ Δ T= 2°C @ 125°C
6.3 Volt Rating at 105°C (4.2 Volt Rating at 125°C)							
220.0	D	T530D227M006A(1)E005	139 μ A	8.0	5.0	7.1	2.3
220.0	D	T530D227M006A(1)E006	139 μ A	8.0	6.0	6.5	2.1
330.0	D	T530D337M006A(1)E006	208 μ A	8.0	6.0	6.5	2.1
330.0	D	T530D337M006A(1)E010	208 μ A	8.0	10.0	5.0	1.6
330.0	Y	T530Y337M006A(1)E005	208 μ A	8.0	5.0	7.2	2.3
330.0	Y	T530Y337M006A(1)E006	208 μ A	8.0	6.0	6.6	2.1
330.0	Y	T530Y337M006A(1)E010	208 μ A	8.0	10.0	5.1	1.6
470.0	Y	T530Y477M006A(1)E005	296 μ A	8.0	5.0	7.2	2.3
470.0	X	T530X477M006A(1)E004	296 μ A	8.0	4.0	8.2	2.6
470.0	X	T530X477M006A(1)E005	296 μ A	8.0	5.0	7.3	2.3
470.0	X	T530X477M006A(1)E006	296 μ A	8.0	6.0	6.7	2.1
470.0	X	T530X477M006A(1)E010	296 μ A	8.0	10.0	5.2	1.6
10 Volt Rating at 105°C (6.6 Volt Rating at 125°C)							
150.0	D	T530D157M010A(1)E005	150 μ A	8.0	5.0	7.1	2.3
150.0	D	T530D157M010A(1)E006	150 μ A	8.0	6.0	6.5	2.1
150.0	D	T530D157M010A(1)E010	150 μ A	8.0	10.0	5.0	1.6
220.0	D	T530D227M010A(1)E006	220 μ A	8.0	6.0	6.5	2.1
220.0	D	T530D227M010A(1)E010	220 μ A	8.0	10.0	5.0	1.6
220.0	Y	T530Y227M010A(1)E006	220 μ A	8.0	6.0	6.6	2.1
330.0	X	T530X337M010A(1)E004	330 μ A	8.0	4.0	8.2	2.6
330.0	X	T530X337M010A(1)E005	330 μ A	8.0	5.0	7.3	2.3
330.0	X	T530X337M010A(1)E006	330 μ A	8.0	6.0	6.7	2.1
330.0	X	T530X337M010A(1)E010	330 μ A	8.0	10.0	5.2	1.6
16 Volt Rating at 105°C (10.6 Volt Rating at 125°C)							
150.0	X	T530X157M016A(1)E015	240 μ A	8.0	15.0	4.2	1.3
150.0	X	T530X157M016A(1)E025	240 μ A	8.0	25.0	3.3	1.0
150.0	X	T530X157M016A(1)E040	240 μ A	8.0	40.0	2.6	0.8

(1) To complete KEMET Part Number, insert lead material designation from ordering information on page 58. 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 rating.

KEMET[®] CONDUCTIVE POLYMER CHIP CAPACITORS

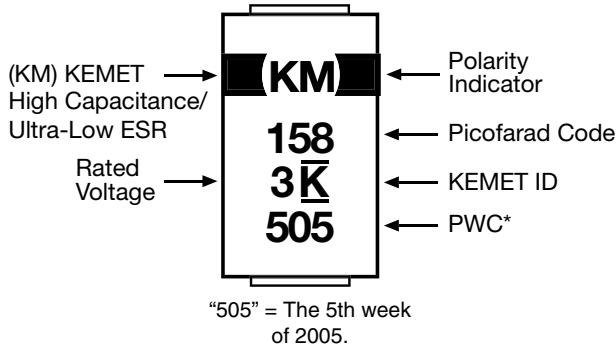
T530 SERIES - High Capacitance/Ultra-Low ESR

T530 ORDERING INFORMATION

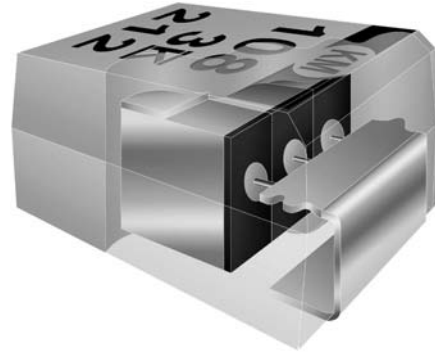


*Refer to www.kemet.com for Pb Free transition information

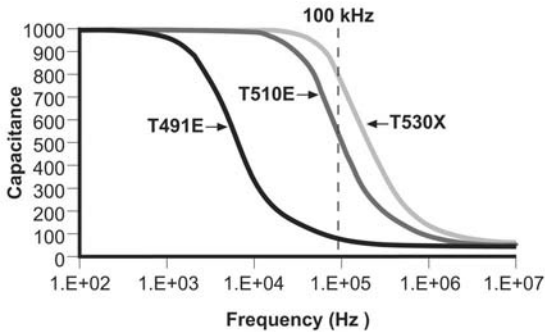
COMPONENT MARKING



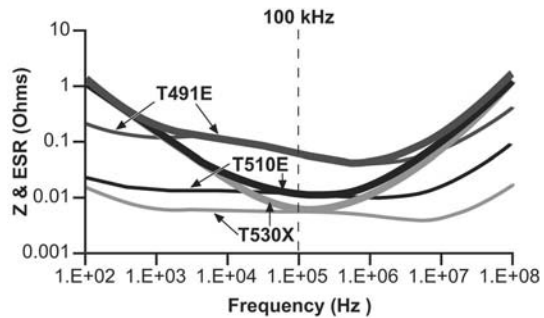
T530 SERIES CONSTRUCTION



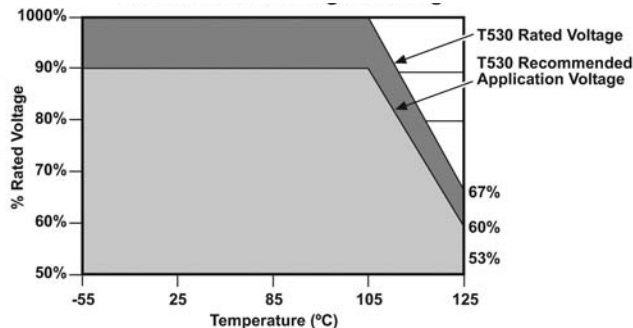
T530X/T510E/T491E 1,000µF Capacitance vs. Frequency



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

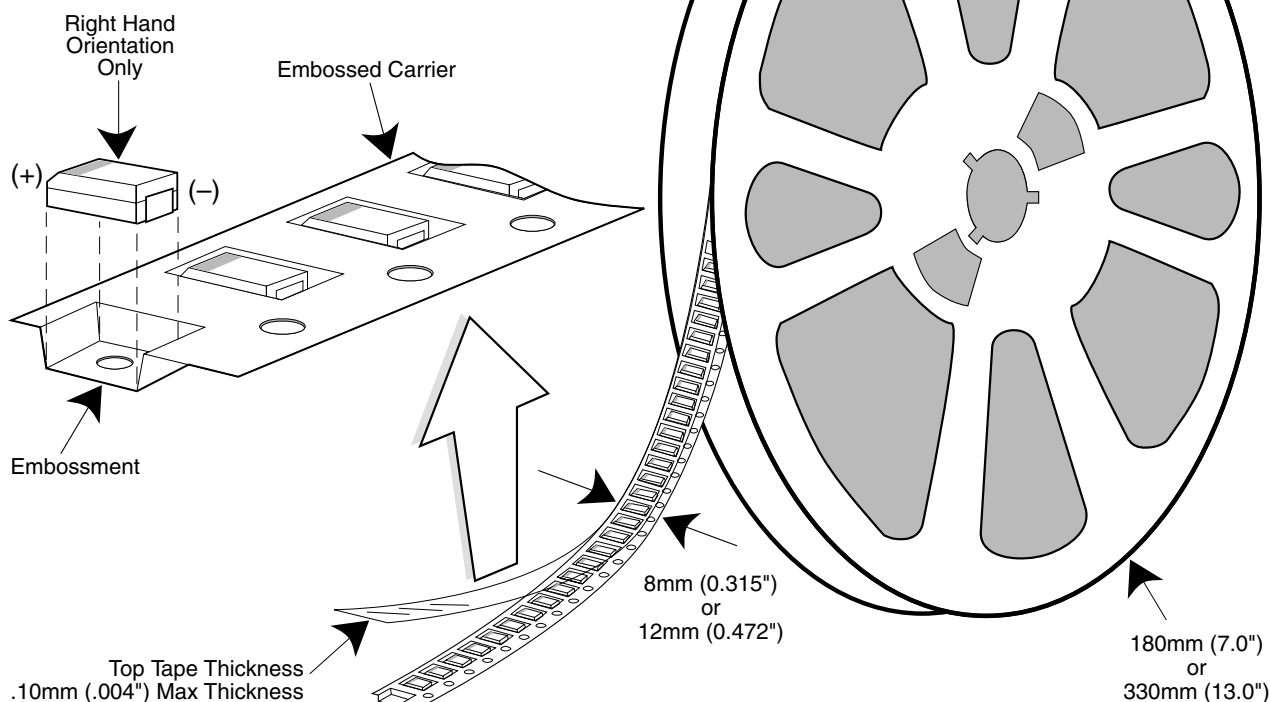


RECOMMENDED TEMPERATURE/VOLTAGE DERATING



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
S	3216-12	8	2,500	10,000
T	3528-12	8	2,500	10,000
U	6032-15	12	1,000	5,000
W	7343-15	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.

TANTALUM, CERAMIC AND ALUMINUM CHIP CAPACITORS



Packaging Information

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

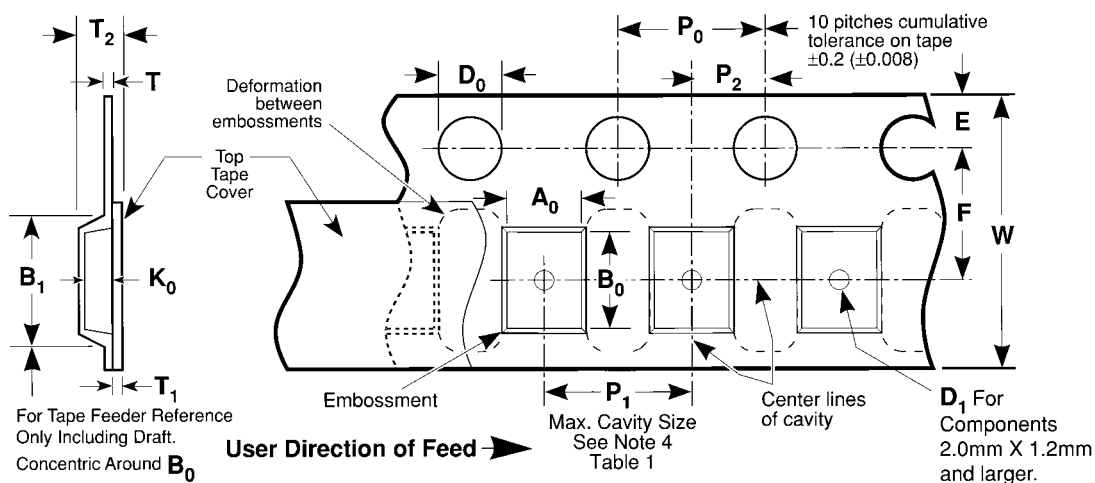


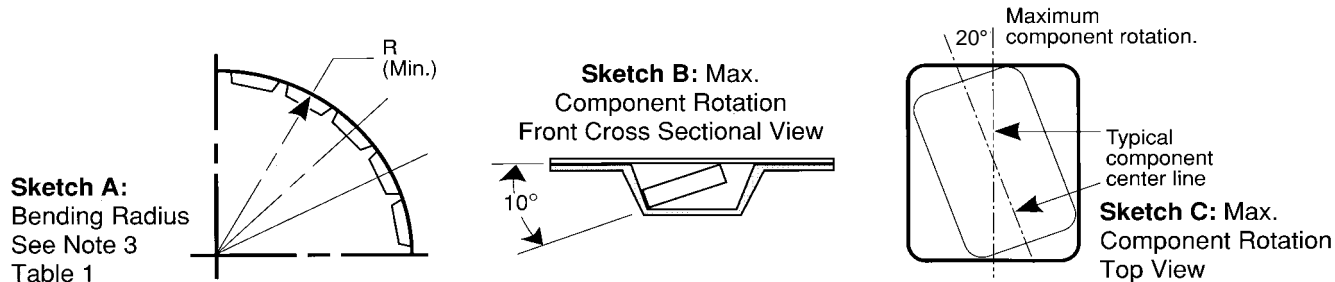
Table 1 — EMBOSSED TAPE DIMENSIONS (Metric will govern)

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.)

Embossed Carrier Tape Configuration (cont.)



Sketch D: Tape Camber (Top View)

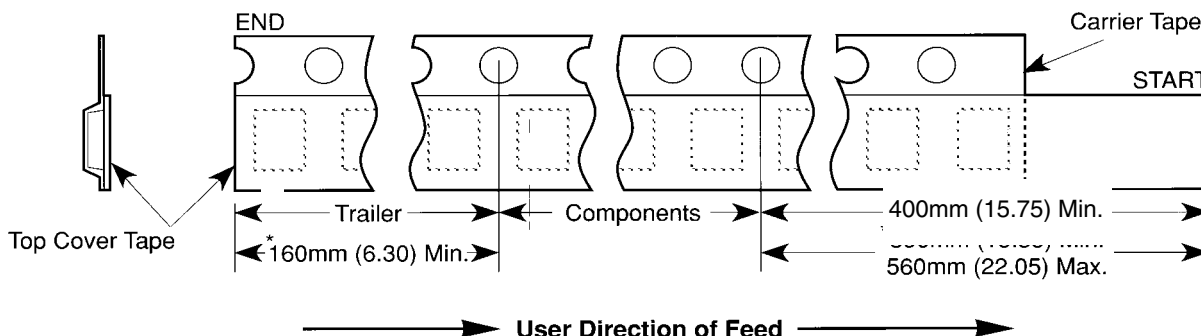
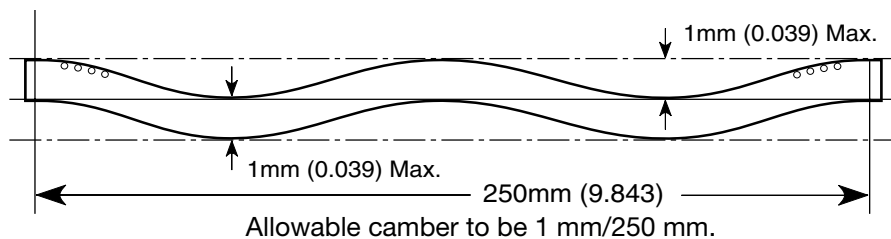


Figure 2:
Tape Leader
& Trailer
Dimensions
(Metric
Dimensions
Will Govern)

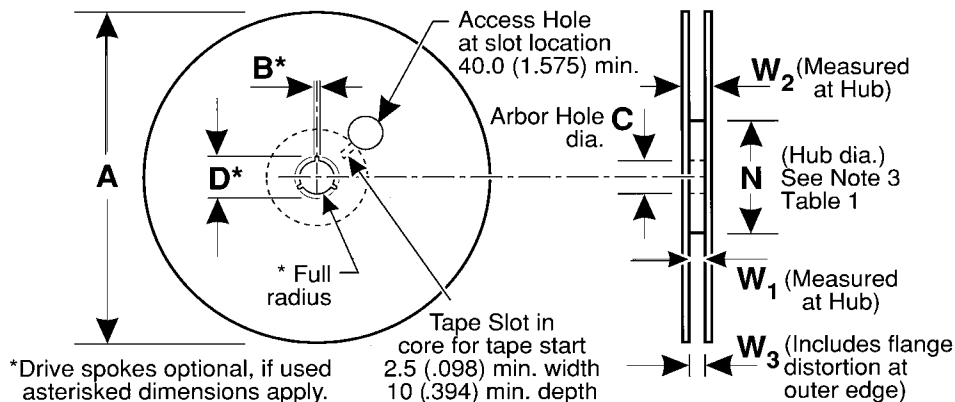


Figure 3: Reel Dimensions (Metric Dimensions will govern)

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	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)	Table 1	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)