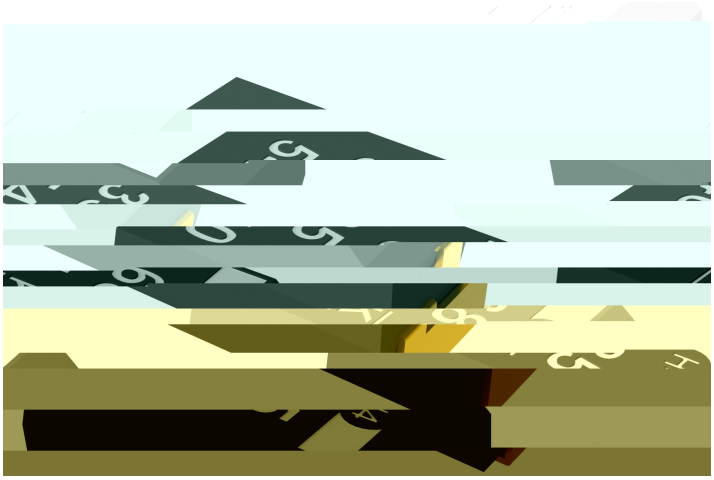
Benefits

- F-Tech and 100% SBDS (KEMET's patented Simulated Breakdown Voltage Screening)
- 3 Sigma Screening for iL, DF and ESR
- Qualified at 1,000 hours of life test at 230°C at 0.33 Vr
- Voltage derating of 67% at 230°C
- Unique high temperature material set
- Meets or exceeds EIA standard 535BAAC
- Standard gold-plated terminations
- RoHS compliant
- Operating temperature range of −55°C to +230°C
-



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Ordering Information

T	502	D	685	M	035	A	G	61	10
Capacitor Class	Series	Case Size	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Failure Rate/ Design	Termination Finish	Performance	ESR
T = Tantalum	High temperature 230°C	B C D	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% M = ±20%	016 = 16 025 = 25 035 = 35	A = N/A	G = Gold-plated	61 = Surge none 62 = Surge at 25°C 63 = Surge −55°C and +85°C	10 = Standard ESR

Performance Characteristics

Item	Performance Characteristics
Operating Temperature	−55°C to 230°C
Rated Capacitance Range	4.7 – 10 µF at 120 Hz/25°C
Capacitance Tolerance	K Tolerance (10%), M Tolerance (20%)
Rated Voltage Range	16 – 35 V
DF (120 Hz)	Refer to Part Number Electrical Specification Table
ESR (100 kHz)	Refer to Part Number Electrical Specification Table
Leakage Current	≤ 0.01 CV (µA) at rated voltage after 5 minutes

Qualification

Test	Condition		Characteristics			
Endurance	230°C at 1/3 rated voltage, 1,000 hours		Δ C/C	Within ±10% of initial value		
			DF	Within 1.5 x initial limits		
			DCL	1 mAmp maximum		
			ESR	Within 2.0 x initial limits		
Storage Life	230°C at 0 volts, 1,000 hours		Δ C/C	Within ±10% of initial value		
			DF	Within 1.5 x initial limits		
			DCL	1 mAmp maximum		
			ESR	Within 2.0 x initial limits		
Humidity	85°C, 85% RH, 0 V, 500 hours		Δ C/C	Within ±10% of initial value		
			DF	Within initial limits		
			DCL	Within initial limits		
			ESR	Within initial limits		
Temperature Stability	Extreme temperature exposure at a succession of continuous steps at +25°C, −55°C, +25°C, +85°C, +150°C, +25°C		+25°C	−55°C	+85°C	+150°C
		Δ C/C	IL*	±10%	±10%	±20%
		DF	IL	IL	1.5 x IL	1.5 x IL
		DCL	IL	N/A	10 x IL	12 x IL
Mechanical Shock/ Vibration	MIL–STD–202, Method 213, Condition I, 100 G peak MIL–STD–202, Method 204, 10 Hz to 2,000 Hz, 5G's for 20 minutes, 12 cycles each of 3 orientations		Δ C/C	Within ±10 of initial value		
			DF	Within initial limits		
			DCL	Within initial limits		

**IL = Initial limit*

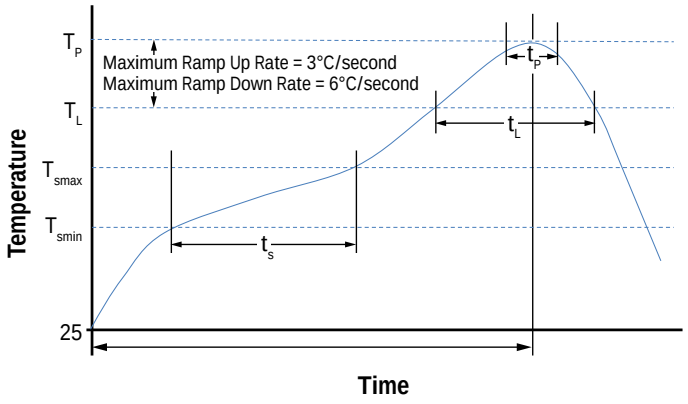
Dimensions – Millimeters

Reverse Voltage

Solid tantalum capacitors are polar devices and may be permanently damaged or destroyed if connected with the wrong polarity. The positive terminal is identified on the capacitor body by a stripe, plus in some cases a beveled edge. A small degree of transient reverse voltage is permissible for short periods per the below table. The capacitors should not be operated continuously in reverse mode, even within these limits.

Temperature	Permissible Transient Reverse Voltage
25°C	15% of Rated Voltage
85°C	5% of Rated Voltage
125°C	1% of Rated Voltage

Table 2 – Land Dimensions/Courtyard


T_P
Maximum Ramp Up Rate = 3°C/second
Maximum Ramp Down Rate = 6°C/second
T_L
T_smax
T_smin
25
t_P
t_L
t_s
Temperature
Time

Construction

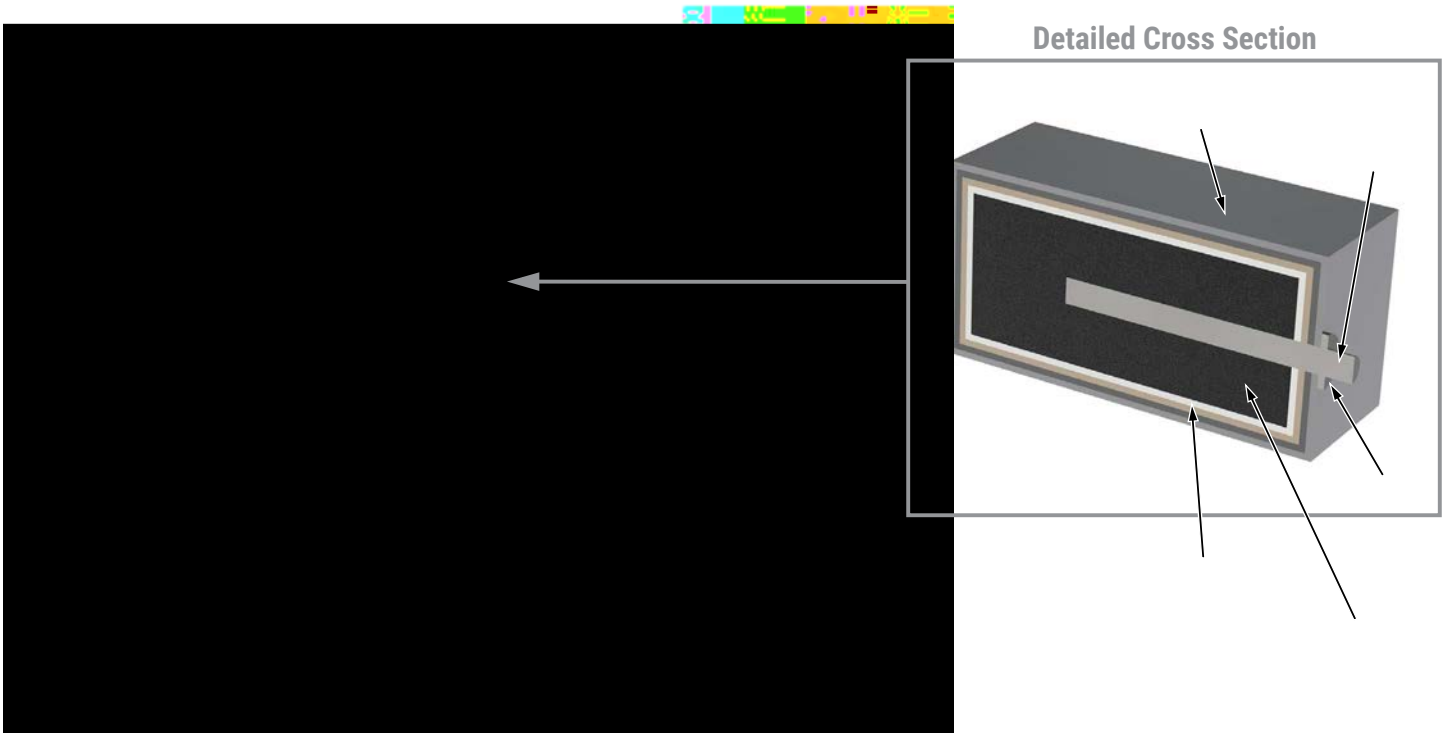
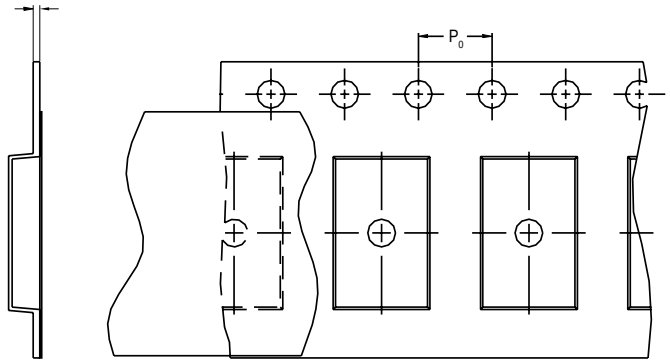


Figure 1 – Embossed (Plastic) Carrier Tape Dimensions



Packaging Information Performance Notes

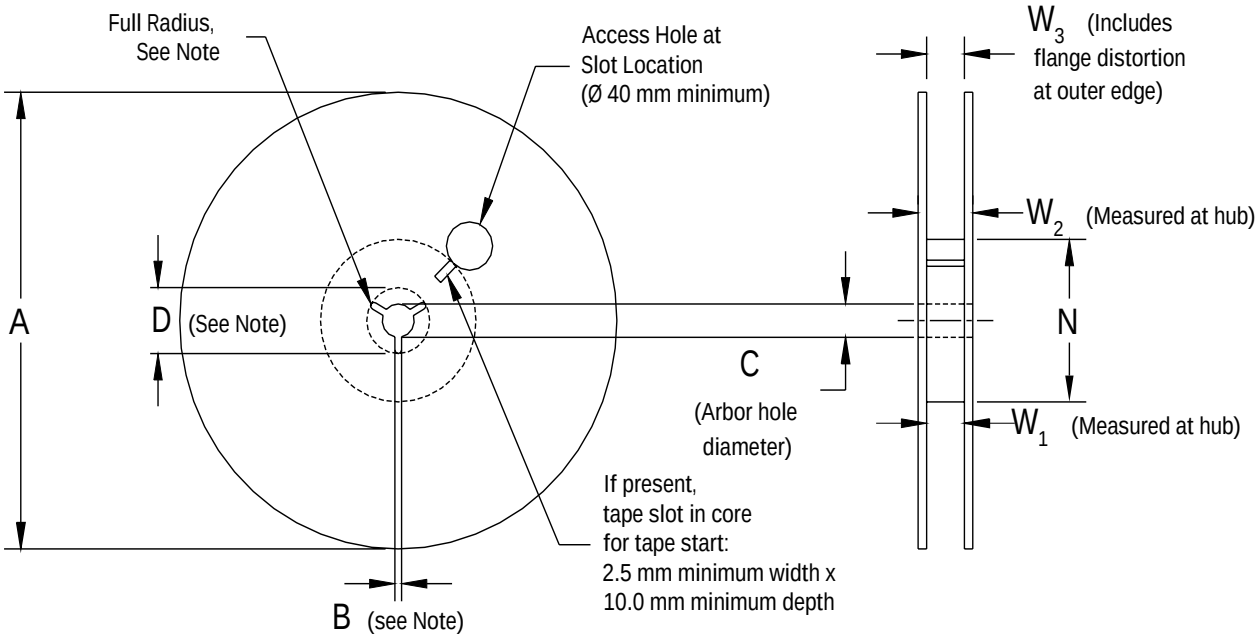
1. Cover tape break force: 1.0 kg minimum.
2. Cover tape peel strength: The total peel strength of the cover tape from the carrier tape shall be:

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

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.
3. Labeling: Bar code labeling (standard or custom) shall be on the side of the reel opposite the sprocket holes. *Refer to EIA Standards 556 and 624*.

Figure 2 – Maximum Component Rotation

Figure 5 – Reel Dimensions



Note: Drive spokes optional; if used, dimensions B and D shall apply.

Table 5 – Reel Dimensions

Metric will govern

Figure 6 – Tape Leader & Trailer Dimensions

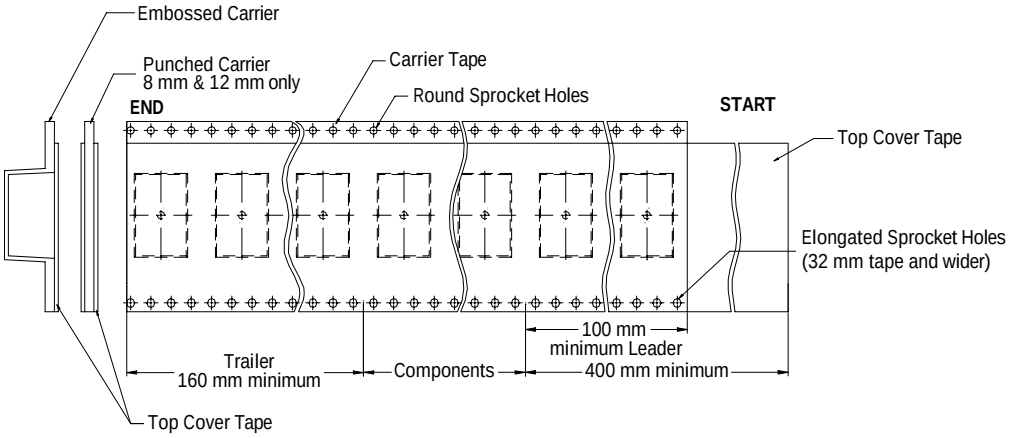


Figure 7 – Maximum Camber

KEMET Electronics Corporation Sales O ces

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