

# Series M1213 Metallized Polypropylene Pulse Capacitors

**Features:** Flame retardant to UL94, high peak/pulse current, low ESR, low inductance, high frequency operation, self healing.

**Applications:** DC, AC and pulse applications.

**Packaging:** Axial wrap and fill (TF, TC), radial lead box (EFR).

## Specifications

### 1) Temperature Range

-55°C to +85°C at rated voltage.

### 2) Capacitance

0.047μF to 4.7μF

### 3) Dielectric Strength

At 25°C, 200% of rated voltage when applied terminal to terminal for 10 seconds through a current limiting resistance.

### 4) Insulation Resistance

At 25°C after 2 minutes charge time at rated voltage or 500 VDC, whichever is less, the minimum IR shall be 80,000 Megohm-Microfarads, but need not exceed 120,000 Megohms.

### 5) Humidity Resistance

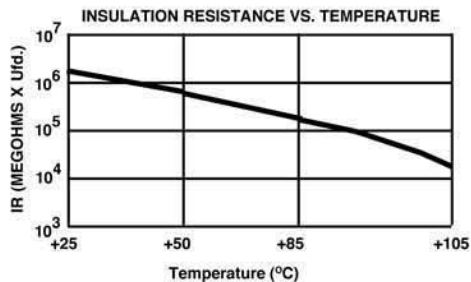
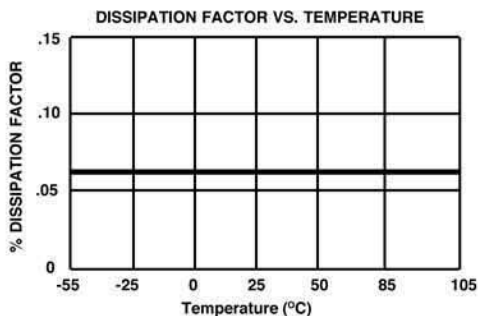
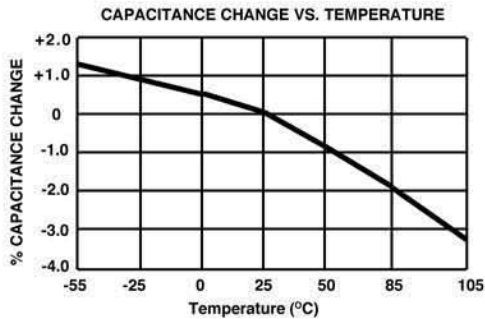
Series M1213 shall meet the requirements of MIL-STD. 202, Method 103B.

### 6) Dissipation Factor

Shall be 0.1% max. when measured at 1 KHz and 25°C.

### 7) Life Test

Will withstand the application of 150% rated voltage at + 85°C for 250 hours with not more than one failure in 12 permitted.



### Typical Temperature Curves Metallized Polypropylene

# Catalog Nomenclature

**\* 1 3 0 6 E F R - 3 - . 0 0 1 - 1 - 5**

**Case Code:**

- TC - Wrap & Fill - Round - Axial
- TF - Wrap & Fill - Flat - Axial
- EC - Epoxy Case - Round - Axial
- EFR - Epoxy Case - Flat - Radial
- DFR - Dipped Construction - Flat - Radial
- HS - Hermetically Sealed

**Dielectric Code:**

- 1206 - Polypropylene/Foil
- 1213 - Metallized Polypropylene
- 1306 - Polyester/Foil
- 1313 - Metallized Polyester
- 1613 - Metallized Polycarbonate
- 1906 - Polystyrene/Foil
- 2113 - Metallized Polyphenylene Sulfide

**Size Code:**

- 3 - Standard
- 2 - Miniature (1313DFR Series Only)
- X - Non-standard
- Or one letter case code

**Capacitance:**

In microfarads ( $\mu$ F)

**Voltage:**

- .35 - 35 VDC
- 0 - 50 VDC
- 1 - 100 VDC
- 2 - 200 VDC
- 3 - 300 VDC
- 4 - 400 VDC
- 10 - 1000 VDC
- 1.6K - 1600VDC
- Etc.

**Tolerance:**

- 1 - 1%
- 2 - 2%
- 5 - 5%
- Etc.

**\* Options**

The following options are available from EFC by specifying the appropriate prefix.

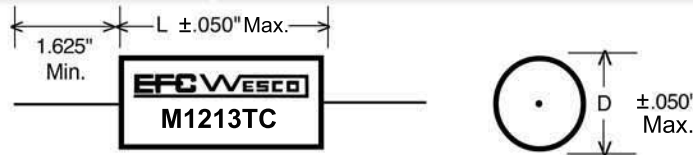
- A - Aluminum foil electrodes
- T - Tin foil electrodes
- HV - High voltage DC applications
- AC - AC voltage rated applications
- MF - Metallized and foil hybrid for maximum pulse current applications
- M - Dual metallized design for pulse current applications
- SP - Low ESR, high RMS current applications
- PC - Direct mount terminals for high current filter applications
- FT - Feed thru filter applications
- RC - Resistor capacitor suppressors



# M1213TC

## Tubular Wrap & Fill

# Metallized Polypropylene Pulse Capacitors



## Dimensions and Ratings

Cap.		<b>850 VDC / 450 VAC</b>						
μF	Part #	D inches (mm)	L inches (mm)	Lead Dia.	dv/dt (V/μsec.)	PK Current (amps)	100 kHz ESR (Milliohms)	RMS Current (amps)
0.10	M1213TC-3-.1-8.5-*	.390	1.300	.031	450	45	16.5	5
0.15	M1213TC-3-.15-8.5-*	.460	1.300	.031	450	68	11.5	7
0.22	M1213TC-3-.22-8.5-*	.540	1.300	.040	450	99	8.1	9
0.33	M1213TC-3-.33-8.5-*	.640	1.300	.040	450	149	5.7	9
0.47	M1213TC-3-.47-8.5-*	.760	1.300	.040	450	212	4.7	9
0.68	M1213TC-3-.68-8.5-*	.720	1.800	.040	295	201	5.1	9
1.00	M1213TC-3-1.0-8.5-*	.860	1.800	.050	295	295	3.9	12
1.50	M1213TC-3-1.5-8.5-*	1.030	1.800	.050	295	443	3.1	12
2.00	M1213TC-3-2.0-8.5-*	1.040	2.300	.050	205	410	3.9	12
3.00	M1213TC-3-3.0-8.5-*	1.300	2.300	.050	205	615	3.4	12

Cap.		<b>1200 VDC / 500 VAC</b>						
μF	Part #	D inches (mm)	L inches (mm)	Lead Dia.	dv/dt (V/μsec.)	PK Current (amps)	100 kHz ESR (Milliohms)	RMS Current (amps)
0.047	M1213TC-3-.047-1.2K-*	.390	1.300	.031	710	33	27.0	4
0.068	M1213TC-3-.068-1.2K-*	.460	1.300	.031	710	48	19.0	5
0.10	M1213TC-3-.1-1.2K-*	.540	1.300	.031	710	71	13.4	7
0.15	M1213TC-3-.15-1.2K-*	.650	1.300	.040	710	107	9.3	9
0.22	M1213TC-3-.22-1.2K-*	.790	1.300	.040	710	156	6.8	9
0.33	M1213TC-3-.33-1.2K-*	.760	1.800	.040	450	149	7.2	9
0.47	M1213TC-3-.47-1.2K-*	.860	1.800	.040	450	212	5.7	9
0.68	M1213TC-3-.68-1.2K-*	1.070	1.800	.050	450	306	4.3	12
1.00	M1213TC-3-1.0-1.2K-*	1.260	1.800	.050	450	450	3.4	12
1.50	M1213TC-3-1.5-1.2K-*	1.280	2.300	.050	280	420	4.1	12
2.00	M1213TC-3-2.0-1.2K-*	1.450	2.300	.050	280	560	3.7	12

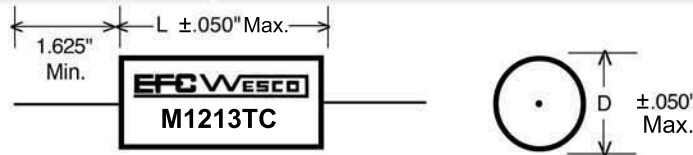
\* - Please insert appropriate tolerance code



# M1213TC

## Tubular Wrap & Fill

# Metallized Polypropylene Pulse Capacitors



## Dimensions and Ratings

Cap.	2000 VDC / 630 VAC							
µF	Part #	D inches (mm)	L inches (mm)	Lead Dia.	dv/dt (V/µsec.)	PK Current (amps)	100 kHz ESR (Milliohms)	RMS Current (amps)
0.022	M1213TC-3-.022-2K-*	.420	1.300	.031	1150	25	48.0	3
0.033	M1213TC-3-.033-2K-*	.500	1.300	.031	1150	38	32.4	4
0.047	M1213TC-3-.047-2K-*	.580	1.300	.040	1150	54	23.2	6
0.068	M1213TC-3-.068-2K-*	.690	1.300	.040	1150	78	16.3	7
0.10	M1213TC-3-.1-2K-*	.810	1.300	.040	1150	115	11.5	9
0.15	M1213TC-3-.15-2K-*	.770	1.800	.040	710	107	11.2	9
0.22	M1213TC-3-.22-2K-*	.920	1.800	.050	710	156	8.1	12
0.33	M1213TC-3-.33-2K-*	1.110	1.800	.050	710	234	5.9	12
0.47	M1213TC-3-.47-2K-*	1.310	1.800	.050	710	334	4.8	12
0.68	M1213TC-3-.68-2K-*	1.340	2.300	.050	405	275	5.4	12

Cap.	3000 VDC / 750 VAC							
µF	Part #	D inches (mm)	L inches (mm)	Lead Dia.	dv/dt (V/µsec.)	PK Current (amps)	100 kHz ESR (Milliohms)	RMS Current (amps)
0.0068	M1213TC-3-.0068-3K-*	.400	1.300	.031	2050	14	130.0	2
0.010	M1213TC-3-.01-3K-*	.470	1.300	.031	2050	21	91.0	3
0.015	M1213TC-3-.015-3K-*	.560	1.300	.040	2050	31	61.0	4
0.022	M1213TC-3-.022-3K-*	.660	1.300	.040	2050	45	42.0	5
0.033	M1213TC-3-.033-3K-*	.800	1.300	.040	2050	68	27.0	7
0.047	M1213TC-3-.047-3K-*	.720	1.800	.040	1250	59	25.0	9
0.068	M1213TC-3-.068-3K-*	.850	1.800	.040	1250	85	18.0	9
0.100	M1213TC-3-.1-3K-*	1.010	1.800	.050	1250	125	13.0	12
0.150	M1213TC-3-.15-3K-*	1.230	1.800	.050	1250	188	9.0	12
0.220	M1213TC-3-.22-3K-*	1.230	2.300	.050	745	164	9.4	12

\* - Please insert appropriate tolerance code