

# 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

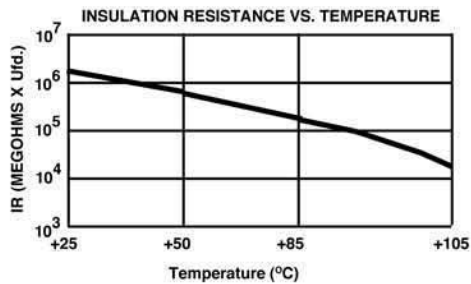
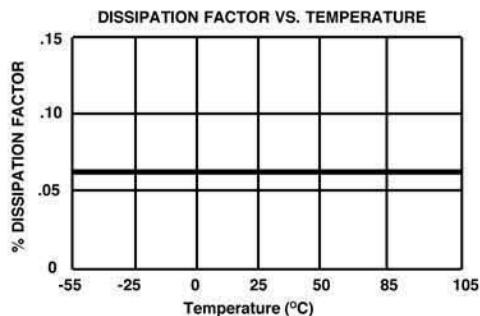
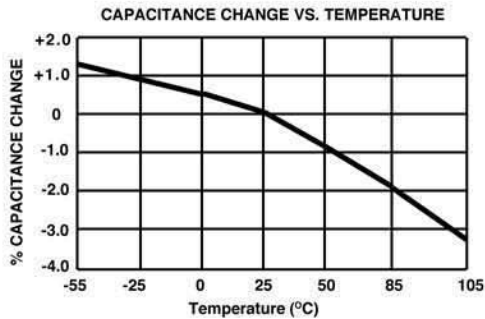
Series M1213 shall meet the requirements of MIL-STD. 202, Method 103B.

### 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.

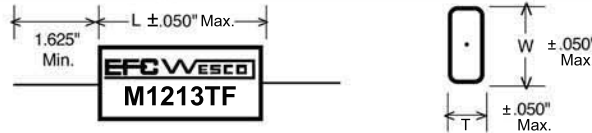
- A - Aluminum foil electrodes
- T - Tin foil electrodes
- HV - High voltage DC applications
- AC - AC voltage rated applications
- MF - Metallized and foil hybrid for maximum pulse current applications
- M - Dual metallized design for pulse current applications
- SP - Low ESR, high RMS current applications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



# M1213TF

## Oval Wrap & Fill

# Metallized Polypropylene Pulse Capacitors



## Dimensions and Ratings

Cap.	850 VDC / 450 VAC								
µF	Part #	T inches (mm)	W inches (mm)	L inches (mm)	Lead Dia.	dv/dt (V/µsec.)	PK Current (amps)	100 kHz ESR (Milliohms)	RMS Current (amps)
0.10	M1213TF-3-.1-8.5-*	0.290	0.460	1.300	.031	450	45	16.5	5
0.15	M1213TF-3-.15-8.5-*	0.360	0.530	1.300	.031	450	68	11.5	7
0.22	M1213TF-3-.22-8.5-*	0.420	0.620	1.300	.040	450	99	8.1	9
0.33	M1213TF-3-.33-8.5-*	0.520	0.720	1.300	.040	450	149	5.7	9
0.47	M1213TF-3-.47-8.5-*	0.640	0.840	1.300	.040	450	212	4.7	9
0.68	M1213TF-3-.68-8.5-*	0.600	0.800	1.800	.040	295	201	5.1	9
1.00	M1213TF-3-1.0-8.5-*	0.740	0.940	1.800	.050	295	295	3.9	12
1.50	M1213TF-3-1.5-8.5-*	0.910	1.110	1.800	.050	295	443	3.1	12
2.00	M1213TF-3-2.0-8.5-*	0.920	1.120	2.300	.050	205	410	3.9	12
3.00	M1213TF-3-3.0-8.5-*	1.180	1.380	2.300	.050	205	615	3.4	12

Cap.	1200 VDC / 500 VAC								
µF	Part #	T inches (mm)	W inches (mm)	L inches (mm)	Lead Dia.	dv/dt (V/µsec.)	PK Current (amps)	100 kHz ESR (Milliohms)	RMS Current (amps)
0.047	M1213TF-3-.047-1.2K-*	0.290	0.460	1.300	.031	710	33	27.0	4
0.068	M1213TF-3-.068-1.2K-*	0.360	0.530	1.300	.031	710	48	19.0	5
0.10	M1213TF-3-.1-1.2K-*	0.420	0.620	1.300	.031	710	71	13.4	7
0.15	M1213TF-3-.15-1.2K-*	0.530	0.730	1.300	.040	710	107	9.3	9
0.22	M1213TF-3-.22-1.2K-*	0.670	0.870	1.300	.040	710	156	6.8	9
0.33	M1213TF-3-.33-1.2K-*	0.640	0.840	1.800	.040	450	149	7.2	9
0.47	M1213TF-3-.47-1.2K-*	0.740	0.940	1.800	.040	450	212	5.7	9
0.68	M1213TF-3-.68-1.2K-*	0.950	1.150	1.800	.050	450	306	4.3	12
1.00	M1213TF-3-1.0-1.2K-*	1.140	1.340	1.800	.050	450	450	3.4	12
1.50	M1213TF-3-1.5-1.2K-*	1.160	1.360	2.300	.050	280	420	4.1	12
2.00	M1213TF-3-2.0-1.2K-*	1.330	1.530	2.300	.050	280	560	3.7	12

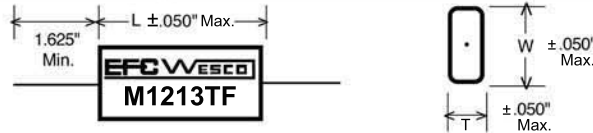
\* - Please insert appropriate tolerance code



# M1213TF

## Oval Wrap & Fill

# Metallized Polypropylene Pulse Capacitors



## Dimensions and Ratings

Cap.		<b>2000 VDC / 630 VAC</b>							
µF	Part #	T inches (mm)	W inches (mm)	L inches (mm)	Lead Dia.	dv/dt (V/µsec.)	PK Current (amps)	100 kHz ESR (Milliohms)	RMS Current (amps)
0.022	M1213TF-3-.022-2K-*	0.320	0.490	1.300	.031	1150	25	48.0	3
0.033	M1213TF-3-.033-2K-*	0.380	0.580	1.300	.031	1150	38	32.4	4
0.047	M1213TF-3-.047-2K-*	0.460	0.660	1.300	.040	1150	54	23.2	6
0.068	M1213TF-3-.068-2K-*	0.570	0.770	1.300	.040	1150	78	16.3	7
0.10	M1213TF-3-.1-2K-*	0.690	0.890	1.300	.040	1150	115	11.5	9
0.15	M1213TF-3-.15-2K-*	0.650	0.850	1.800	.040	710	107	11.2	9
0.22	M1213TF-3-.22-2K-*	0.800	1.000	1.800	.050	710	156	8.1	12
0.33	M1213TF-3-.33-2K-*	0.990	1.190	1.800	.050	710	234	5.9	12
0.47	M1213TF-3-.47-2K-*	1.190	1.390	1.800	.050	710	334	4.8	12
0.68	M1213TF-3-.68-2K-*	1.220	1.420	2.300	.050	405	275	5.4	12

Cap.		<b>3000 VDC / 750 VAC</b>							
µF	Part #	T inches (mm)	W inches (mm)	L inches (mm)	Lead Dia.	dv/dt (V/µsec.)	PK Current (amps)	100 kHz ESR (Milliohms)	RMS Current (amps)
0.0068	M1213TF-3-.0068-3K-*	0.300	0.470	1.300	.031	2050	14	130.0	2
0.010	M1213TF-3-.01-3K-*	0.350	0.550	1.300	.031	2050	21	91.0	3
0.015	M1213TF-3-.015-3K-*	0.440	0.640	1.300	.040	2050	31	61.0	4
0.022	M1213TF-3-.022-3K-*	0.540	0.740	1.300	.040	2050	45	42.0	5
0.033	M1213TF-3-.033-3K-*	0.680	0.880	1.300	.040	2050	68	27.0	7
0.047	M1213TF-3-.047-3K-*	0.600	0.800	1.800	.040	1250	59	25.0	9
0.068	M1213TF-3-.068-3K-*	0.730	0.930	1.800	.040	1250	85	18.0	9
0.100	M1213TF-3-.1-3K-*	0.890	1.090	1.800	.050	1250	125	13.0	12
0.150	M1213TF-3-.15-3K-*	1.110	1.310	1.800	.050	1250	188	9.0	12
0.220	M1213TF-3-.22-3K-*	1.110	1.310	2.300	.050	745	164	9.4	12

\* - Please insert appropriate tolerance code