



**SERIES 1213**

EFC Series 1213 are metallized polypropylene capacitors. This series offers the advantage of superior stability, self healing, high insulation resistance, low dissipation factor and high frequency operation. Suggested applications include: timing circuits, switch mode power supplies (SMPS). Packaging options include: wrap and fill (TF, TC), radial lead box (EFR), axial lead (EC, EF). Application options include: switching power supply (SP).

**SPECIFICATIONS**

**1. TEMPERATURE RANGE**

- 55 °C to + 85 °C at rated voltage.  
 To 105 °C with 25% voltage derating.

**2. CAPACITANCE**

Capacitors  $\leq$  1.0 MFD shall be measured at 1 KHz  $\pm$  20 HZ. Capacitors  $>$ 1.0 MFD shall be measured at 60 HZ. Measurements shall be taken at 25 °C.

**3. DIELECTRIC STRENGTH**

At 25 °C, 150% of rated voltage when applied terminal to terminal for one minute 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 1213 shall meet the requirements of MIL-STD. 202C, Method 103B.

**6. DISSIPATION FACTOR**

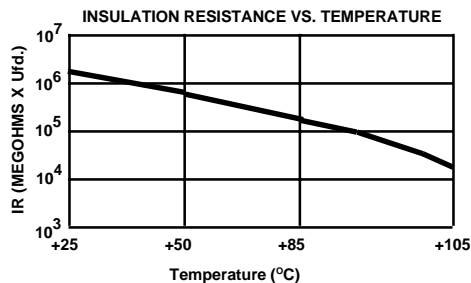
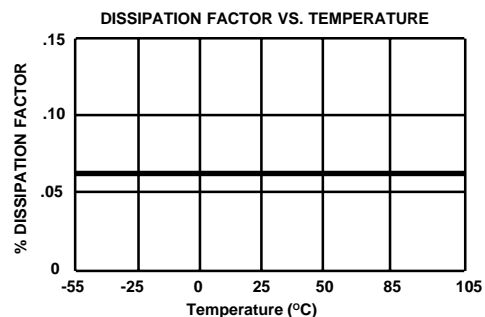
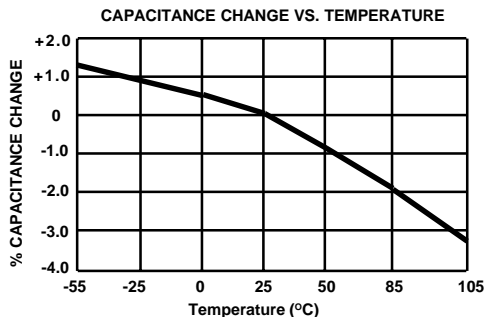
Shall be 0.1 % max. when measured as in Par. 2.

**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**

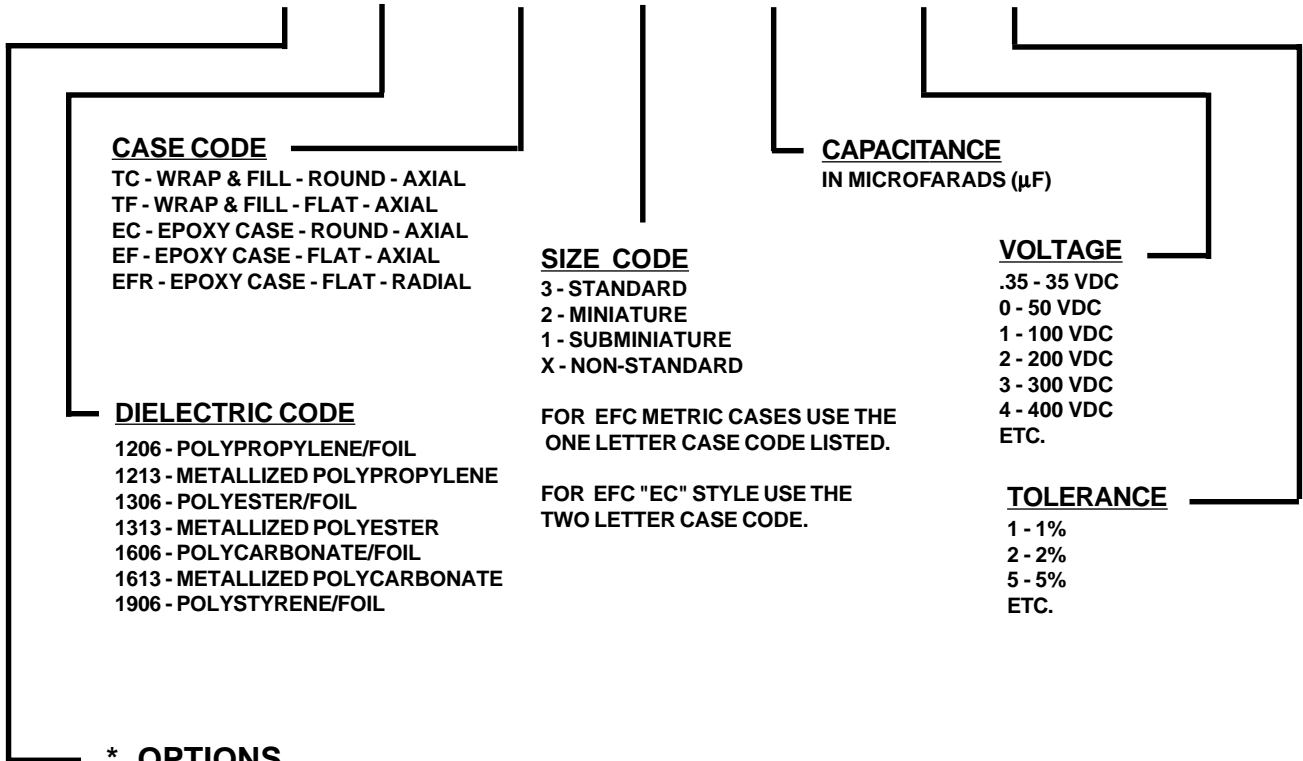
**METALLIZED POLYPROPYLENE**





# CATALOG NOMENCLATURE

\* 1213 EFR - 3 - .1 - 1 - 5



THE FOLLOWING OPTIONS ARE AVAILABLE FROM EFC BY SPECIFYING THE APPROPRIATE PREFIX.

### TEMPERATURE COEFFICIENTS:

Different T.C.'s are available in both Polypropylene and Polystyrene dielectrics. T.C.'s and the appropriate prefixes are as follows:

- $\underline{A}1206 = -150 \text{ PPM}/^\circ\text{C} \pm 30 \text{ PPM}$
- $\underline{T}1206 = -270 \text{ PPM}/^\circ\text{C} \pm 30 \text{ PPM}$
- $\underline{0}1906 = \text{ZERO PPM}/^\circ\text{C} \pm 50 \text{ PPM}$
- $\underline{A}1906 = -80 \text{ PPM}/^\circ\text{C} \pm 30 \text{ PPM}$
- $\underline{T}1906 = -120 \text{ PPM}/^\circ\text{C} \pm 30 \text{ PPM}$

### HIGH VOLTAGE:

EFC high voltage metallized polyester capacitors are designed for use in high voltage power supplies, rectifiers and other similar circuits. Voltage ratings to 15,000 DC are common-place at EFC. Specify with the prefix **HV**.

### AC CURRENT:

Specify metallized polyester and termination procedures to enable EFC to supply a small sized **AC** rated capacitor for general purpose use at 60 HZ. Specify with the prefix **AC**.

### HIGH AMPERAGE AND PULSE CURRENTS:

Dual metallized carriers allow these capacitors to handle high amperage and pulsing currents. Available in both polyester and polypropylene dielectrics. Specify with the prefix **MF**. Contact the factory for an **MF** spec. sheet.

### SWITCH MODE POWER SUPPLY:

Polypropylene and polyester capacitors designed for SMPS have low ESR and high current rating should be specified with the **SP** prefix.

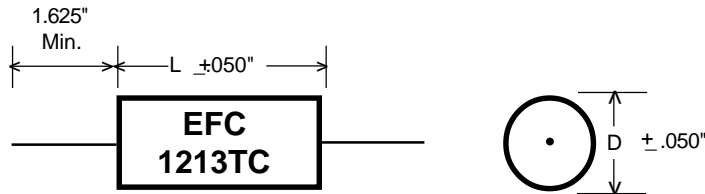
EFC will manufacture to any non-standard value and size. Please consult factory for special requirements.



**1213TC**

**Tubular  
Wrap and Fill**

Lead Specs.  
Tinned Copperweld  
Under .250D = 24 AWG  
.250 - .440D = 22 AWG  
Above .440D = 20 AWG



**Metallized  
Polypropylene  
Capacitors**

(All dimensions in inches)

**DIMENSIONS and RATINGS**

Cap. μF	1213TC-1 50 VDC		1213TC-2 100 VDC		1213TC-3 150 VDC		1213TC-3 200 VDC		1213TC-3 400 VDC		1213TC-3 600 VDC		
	D	L	D	L	D	L	D	L	D	L	D	L	
.001	.160	.406	.180	.406	.180	.406	.180	.406	.180	.406	.180	.531	
.0012	.160	.406	.180	.406	.180	.406	.180	.406	.180	.406	.180	.531	
.0015	.160	.406	.180	.406	.180	.406	.180	.406	.180	.406	.180	.531	
.0022	.160	.406	.180	.406	.180	.406	.180	.406	.180	.406	.180	.531	
.0027	.160	.406	.180	.406	.180	.406	.180	.406	.180	.406	.180	.531	
.0039	.160	.406	.180	.406	.180	.406	.180	.406	.180	.406	.180	.531	
.0047	.160	.406	.180	.406	.180	.406	.180	.406	.180	.406	.180	.531	
.0056	.160	.406	.180	.406	.180	.406	.180	.406	.180	.406	.180	.531	
.0068	.160	.406	.180	.406	.180	.406	.180	.406	.180	.406	.180	.531	
.0082	.160	.406	.180	.406	.180	.406	.180	.406	.180	.406	.180	.531	
.01	.160	.406	.180	.406	.180	.406	.180	.406	.190	.406	.190	.531	
.012	.160	.406	.180	.406	.180	.406	.180	.406	.210	.406	.210	.531	
.015	.160	.406	.180	.406	.180	.406	.180	.406	.230	.406	.230	.531	
.018	.160	.406	.180	.406	.180	.406	.180	.406	.250	.406	.250	.531	
.022	.160	.406	.180	.406	.180	.406	.180	.406	.190	.531	.270	.531	
.027	.170	.406	.200	.406	.200	.406	.230	.406	.210	.531	.300	.531	
.033	.180	.406	.220	.406	.220	.406	.180	.531	.230	.531	.270	.656	
.039	.200	.406	.240	.406	.240	.406	.190	.531	.250	.531	.290	.656	
.047	.210	.406	.180	.531	.180	.531	.210	.531	.270	.531	.320	.656	
.056	.230	.406	.190	.531	.190	.531	.220	.531	.290	.531	.350	.656	
.068	.250	.406	.210	.531	.210	.531	.240	.531	.260	.656	.330	.781	
.082	.190	.531	.220	.531	.220	.531	.270	.531	.280	.656	.360	.781	
.1	.210	.531	.250	.531	.250	.531	.290	.531	.310	.656	.360	.906	
.12	.220	.531	.270	.531	.270	.531	.260	.656	.340	.656	.390	.906	
.15	.250	.531	.300	.531	.300	.531	.290	.656	.330	.781	.430	.906	
.18	.270	.531	.260	.656	.260	.656	.310	.656	.360	.781	.470	.906	
.22	.300	.531	.290	.656	.290	.656	.340	.656	.390	.781	.450	1.190	
.27	.260	.656	.320	.656	.320	.656	.330	.781	.390	.906	.490	1.190	
.33	.290	.656	.350	.656	.350	.656	.360	.781	.430	.906	.540	1.190	
.39	.310	.656	.330	.781	.330	.781	.390	.781	.460	.906	.580	1.190	
.47	.340	.656	.360	.781	.360	.781	.380	.906	.430	1.190	.640	1.190	
.56	.320	.781	.390	.781	.390	.781	.420	.906	.470	1.190	.610	1.190	
.68	.350	.781	.390	.906	.390	.906	.460	.906	.520	1.190	.670	1.190	
.82	.390	.781	.420	.906	.420	.906	.500	.906	.570	1.190	.740	1.440	
1.0	.420	.781	.460	.906	.460	.906	.470	1.190	.620	1.190	.770	1.570	
1.25	.420	.906	.440	1.190	.440	1.190	.530	1.190	.610	1.440	.860	1.570	
1.5	.460	.906	.480	1.190	.480	1.190	.570	1.190	.670	1.440	.900	1.690	
2.0	.450	1.190	.550	1.190	.550	1.190	.580	1.440	.770	1.440	1.040	1.690	
3.0	.550	1.190	.590	1.440	.590	1.440	.710	1.440	.890	1.570	1.260	1.690	
4.0	.630	1.190	.680	1.440	.680	1.440	.770	1.570	.980	1.690	1.340	1.940	
5.0	.620	1.440	.760	1.440	.760	1.440	.860	1.570	1.090	1.690	1.390	2.250	
6.0	.680	1.440	.790	1.570	.790	1.570	.900	1.690	1.100	1.940			
8.0			.910	1.570	.910	1.570	.950	1.940	1.180	2.250			
10.0			.970	1.690	.970	1.690	1.060	1.940	1.310	2.250			
12.0			.970	1.940	.970	1.940	1.080	2.250					
15.0			1.080	1.940	1.080	1.940	1.210	2.250					
20.0			1.160	2.250	1.160	2.250							

**ELECTRONIC FILM CAPACITORS, INC.**

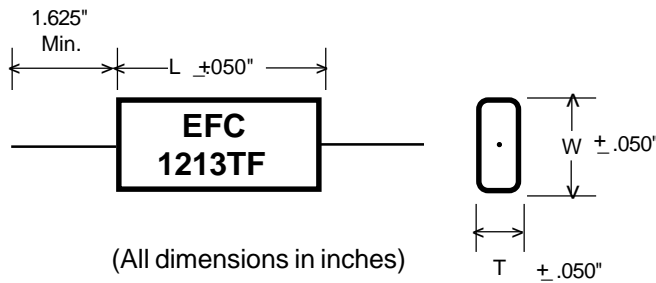
Reidville Industrial Park \* 41 Interstate Lane \* WATERBURY, CONNECTICUT 06705  
Phone (203) 755-5629 FAX (203) 755-0659

EFC will manufacture to any non-standard value and size. Please consult factory for special requirements.



**1213TF**

**Metallized  
Polypropylene  
Capacitors**



**Oval  
Wrap and Fill**

Lead Specs.  
Tinned Copperweld  
Under .190T = 24 AWG  
.190 - .380T = 22 AWG  
Above .380T = 20 AWG

**DIMENSIONS and RATINGS**

Cap. μF	1213TF-1 50 VDC			1213TF-2 100 VDC			1213TF-3 150 VDC			1213TF-3 200 VDC			1213TF-3 400 VDC			1213TF-3 600 VDC		
	T	W	L	T	W	L	T	W	L	T	W	L	T	W	L	T	W	L
.001	.100	.190	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.531
.0012	.100	.190	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.531
.0015	.100	.190	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.531
.0022	.100	.190	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.531
.0027	.100	.190	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.531
.0039	.100	.190	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.531
.0047	.100	.190	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.531
.0056	.100	.190	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.531
.0068	.100	.190	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.531
.0082	.100	.190	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.120	.210	.531
.01	.100	.190	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.130	.230	.406	.130	.230	.531
.012	.100	.190	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.150	.250	.406	.150	.240	.531
.015	.100	.190	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.170	.270	.406	.170	.260	.531
.018	.100	.190	.406	.120	.210	.406	.120	.210	.406	.120	.210	.406	.140	.230	.406	.190	.280	.531
.022	.100	.190	.406	.120	.220	.406	.120	.220	.406	.150	.250	.406	.130	.220	.531	.210	.310	.531
.027	.110	.200	.406	.140	.230	.406	.140	.230	.406	.170	.270	.406	.150	.240	.531	.240	.340	.531
.033	.120	.220	.406	.160	.250	.406	.160	.250	.406	.120	.210	.531	.170	.260	.531	.210	.300	.656
.039	.140	.230	.406	.180	.270	.406	.180	.270	.406	.130	.220	.531	.190	.280	.531	.230	.330	.656
.047	.150	.250	.406	.120	.210	.531	.120	.210	.531	.150	.240	.531	.210	.300	.531	.260	.350	.656
.056	.170	.270	.406	.130	.220	.531	.130	.220	.531	.160	.260	.531	.230	.330	.531	.290	.380	.656
.068	.190	.290	.406	.150	.240	.531	.150	.240	.531	.180	.280	.531	.200	.290	.656	.250	.380	.781
.082	.130	.220	.531	.160	.260	.531	.160	.260	.531	.210	.300	.531	.220	.320	.656	.280	.410	.781
.1	.150	.240	.531	.190	.280	.531	.190	.280	.531	.230	.330	.531	.250	.340	.656	.280	.400	.906
.12	.160	.260	.531	.210	.300	.531	.210	.300	.531	.200	.290	.656	.280	.370	.656	.310	.430	.906
.15	.190	.280	.531	.240	.330	.531	.240	.330	.531	.230	.320	.656	.250	.370	.781	.350	.480	.906
.18	.210	.300	.531	.200	.300	.656	.200	.300	.656	.250	.350	.656	.280	.400	.781	.390	.520	.906
.22	.240	.330	.531	.230	.320	.656	.230	.320	.656	.280	.380	.656	.310	.440	.781	.340	.510	1.156
.27	.200	.300	.656	.260	.350	.656	.260	.350	.656	.250	.380	.781	.310	.430	.906	.380	.550	1.156
.33	.230	.320	.656	.290	.380	.656	.290	.380	.656	.280	.410	.781	.350	.470	.906	.430	.600	1.156
.39	.250	.350	.656	.270	.360	.781	.270	.360	.781	.310	.440	.781	.380	.510	.906	.480	.640	1.190
.47	.280	.380	.656	.300	.390	.781	.300	.390	.781	.300	.430	.906	.330	.490	1.156	.530	.700	1.190
.56	.260	.360	.781	.330	.420	.781	.330	.420	.781	.340	.460	.906	.370	.530	1.156	.510	.670	1.190
.68	.290	.390	.781	.310	.430	.906	.310	.430	.906	.380	.500	.906	.410	.580	1.156	.570	.730	1.190
.82	.330	.420	.781	.340	.470	.906	.340	.470	.906	.420	.550	.906	.460	.630	1.190	.630	.800	1.440
1.0	.360	.460	.781	.380	.510	.906	.380	.510	.906	.370	.530	1.190	.520	.680	1.190	.670	.830	1.570
1.25	.360	.460	.906	.360	.480	1.190	.360	.480	1.190	.420	.590	1.190	.500	.670	1.440	.750	.920	1.570
1.5	.400	.500	.906	.400	.520	1.190	.400	.520	1.190	.470	.630	1.190	.560	.730	1.440	.770	.970	1.690
2.0	.390	.480	1.190	.470	.590	1.190	.470	.590	1.190	.470	.640	1.440	.660	.830	1.440	.910	1.110	1.690
3.0	.470	.590	1.190	.490	.650	1.440	.490	.650	1.440	.600	.770	1.440	.780	.950	1.570	1.140	1.340	1.690
4.0	.550	.680	1.190	.570	.740	1.440	.570	.740	1.440	.670	.830	1.570	.850	1.050	1.690	1.220	1.410	1.940
5.0	.540	.670	1.440	.650	.820	1.440	.650	.820	1.440	.750	.920	1.570	.970	1.160	1.690	1.270	1.460	2.250
6.0	.600	.720	1.440	.680	.850	1.570	.680	.850	1.570	.770	.970	1.690	.970	1.170	1.940			
8.0				.800	.970	1.570	.800	.970	1.570	.830	1.020	1.940	1.050	1.250	2.250			
10.0				.840	1.040	1.690	.840	1.040	1.690	.940	1.130	1.940	1.190	1.380	2.250			
12.0				.850	1.040	1.940	.850	1.040	1.940	.960	1.150	2.250						
15.0				.960	1.160	1.940	.960	1.160	1.940	1.080	1.280	2.250						
20.0				1.040	1.230	2.250	1.040	1.230	2.250									

**ELECTRONIC FILM CAPACITORS, INC.**

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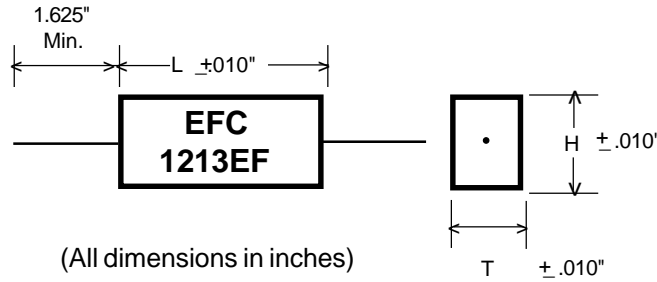
**1213EF**

**Epoxy Case  
(Axial Leads)**

Lead Specs.

Tinned Copperweld  
Under .190T = 24 AWG  
.190 - .380T = 22 AWG  
Above .380T = 20 AWG

**Metallized  
Polypropylene  
Capacitors**



**DIMENSIONS and RATINGS**

Cap. μF	1213EF-1 50 VDC			1213EF-2 100 -150 VDC			1213EF-3 200 VDC			1213EF-3 400 VDC			1213EF-3 600 VDC					
	T	H	L	T	H	L	T	H	L	T	H	L	T	H	L			
.001	.160	.240	.420	.160	.240	.420	.160	.240	.420	.160	.240	.420	.170	.290	.570			
.0012	.160	.240	.420	.160	.240	.420	.160	.240	.420	.160	.240	.420	.170	.290	.570			
.0015	.160	.240	.420	.160	.240	.420	.160	.240	.420	.160	.240	.420	.170	.290	.570			
.0022	.160	.240	.420	.160	.240	.420	.160	.240	.420	.160	.240	.420	.170	.290	.570			
.0027	.160	.240	.420	.160	.240	.420	.160	.240	.420	.160	.240	.420	.170	.290	.570			
.0039	.160	.240	.420	.160	.240	.420	.160	.240	.420	.160	.240	.420	.170	.290	.570			
.0047	.160	.240	.420	.160	.240	.420	.160	.240	.420	.160	.240	.420	.170	.290	.570			
.0056	.160	.240	.420	.160	.240	.420	.160	.240	.420	.160	.240	.420	.170	.290	.570			
.0068	.160	.240	.420	.160	.240	.420	.160	.240	.420	.160	.240	.420	.170	.290	.570			
.0082	.160	.240	.420	.160	.240	.420	.160	.240	.420	.160	.240	.420	.170	.290	.570			
.01	.160	.240	.420	.160	.240	.420	.160	.240	.420	.170	.290	.420	.170	.290	.570			
.012	.160	.240	.420	.160	.240	.420	.160	.240	.420	.170	.290	.420	.230	.360	.550			
.015	.160	.240	.420	.160	.240	.420	.160	.240	.420	.170	.290	.570	.230	.360	.550			
.018	.160	.240	.420	.160	.240	.420	.170	.290	.420	.170	.290	.570	.230	.360	.550			
.022	.160	.240	.420	.160	.240	.420	.170	.290	.570	.170	.290	.570	.290	.420	.570			
.027	.160	.240	.420	.170	.290	.420	.170	.290	.570	.170	.290	.570	.290	.420	.570			
.033	.170	.290	.420	.170	.290	.550	.170	.290	.570	.230	.360	.550	.290	.420	.670			
.039	.170	.290	.420	.170	.290	.550	.170	.290	.570	.230	.360	.550	.290	.420	.670			
.047	.170	.290	.550	.170	.290	.550	.230	.360	.550	.230	.360	.550	.290	.420	.670			
.056	.170	.290	.550	.170	.290	.550	.230	.360	.550	.290	.420	.570	.290	.420	.820			
.068	.170	.290	.550	.170	.290	.550	.230	.360	.550	.290	.420	.570	.290	.420	.820			
.082	.170	.290	.550	.230	.360	.550	.290	.420	.570	.290	.420	.670	.390	.540	.820			
.1	.230	.360	.550	.230	.360	.550	.290	.420	.570	.290	.420	.670	.390	.540	.820			
.12	.230	.360	.550	.230	.360	.550	.290	.420	.570	.290	.420	.670	.390	.540	.820			
.15	.230	.360	.550	.290	.420	.570	.290	.420	.670	.290	.420	.820	.390	.540	1.040			
.18	.290	.420	.570	.290	.420	.570	.290	.420	.670	.390	.540	.820	.390	.540	1.240			
.22	.290	.420	.570	.290	.420	.670	.290	.420	.820	.390	.540	.820	.390	.540	1.240			
.27	.290	.420	.570	.290	.420	.670	.390	.540	.820	.390	.540	.820	.560	.720	1.240			
.33	.290	.420	.670	.290	.420	.820	.390	.540	.820	.390	.540	1.040	.560	.720	1.240			
.39	.290	.420	.670	.390	.540	.820	.390	.540	.820	.390	.540	1.240	.560	.720	1.240			
.47	.290	.420	.820	.390	.540	.820	.390	.540	.820	.390	.540	1.240	.560	.720	1.500			
.56	.390	.540	.820	.390	.540	.820	.390	.540	1.040	.560	.720	1.240	.560	.720	1.500			
.68	.390	.540	.820	.390	.540	.820	.390	.540	1.040	.560	.720	1.240						
.82	.390	.540	.820	.390	.540	1.040	.390	.540	1.240	.560	.720	1.240						
1.0	.390	.540	.820	.390	.540	1.240	.560	.720	1.240	.560	.720	1.240						
1.25	.390	.540	1.040	.390	.540	1.240	.560	.720	1.240									
1.5	.390	.540	1.240	.560	.720	1.240	.560	.720	1.240									
2.0	.560	.720	1.240	.560	.720	1.240												
3.0	.560	.720	1.240	.560	.720	1.500												

**ELECTRONIC FILM CAPACITORS, INC.**

Reidville Industrial Park \* 41 Interstate Lane \* WATERBURY, CONNECTICUT 06705

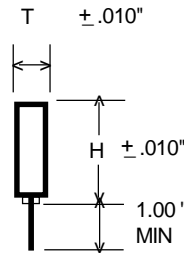
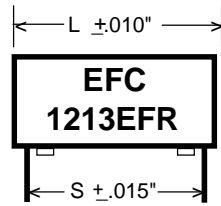
Phone (203) 755-5629

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EFC will manufacture to any non-standard value and size. Please consult factory for special requirements.



# Metallized Polypropylene Capacitors



# 1213EFR

**Epoxy Case  
(Radial Leads)**

(All dimensions in inches)

## DIMENSIONS and RATINGS

Cap. μF	1213EFR-1 50 VDC			1213EFR-2 100 VDC			1213EFR-3 150 VDC			1213EFR-3 200 VDC			1213EFR-3 400 VDC			1213EFR-3 600 VDC			Lead Specs. Tinned Copperweld		
	T	L	H	T	L	H	T	L	H	T	L	H	T	L	H	T	L	H	L	S	AWG
.001	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.550	.330	.420	.30	22
.0012	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.550	.330	.550	.40	22
.0015	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.550	.330	.670	.50	22
.0022	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.550	.330	.820	.60	22
.0027	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.550	.330	1.04	.80	22
.0039	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.550	.330	1.24	1.10	20
.0047	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.550	.330	1.75	1.60	20
.0056	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.550	.330			
.0068	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.550	.330			
.0082	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.550	.330			
.01	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.420	.330	.180	.550	.330			
.012	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.550	.330	.180	.550	.330			
.015	.160	.420	.330	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.550	.330	.240	.550	.370			
.018	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.420	.330	.180	.550	.330	.240	.550	.370			
.022	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.550	.330	.180	.550	.330	.240	.550	.370			
.027	.160	.420	.330	.160	.420	.330	.160	.420	.330	.180	.550	.370	.240	.550	.370	.300	.550	.430			
.033	.160	.420	.330	.180	.420	.330	.180	.420	.330	.180	.550	.370	.240	.550	.370	.300	.550	.430			
.039	.160	.420	.330	.180	.420	.330	.180	.420	.330	.180	.550	.370	.240	.550	.370	.300	.670	.430			
.047	.160	.420	.330	.180	.550	.330	.180	.550	.330	.240	.550	.370	.300	.550	.430	.300	.670	.430			
.056	.160	.420	.330	.180	.550	.330	.180	.550	.330	.240	.550	.370	.300	.550	.430	.300	.820	.430			
.068	.180	.420	.330	.240	.550	.370	.240	.550	.370	.240	.550	.430	.300	.550	.430	.300	.820	.430			
.082	.180	.420	.330	.240	.550	.370	.240	.550	.370	.240	.550	.430	.300	.670	.430	.400	.820	.550			
.1	.180	.550	.330	.240	.550	.370	.240	.550	.370	.300	.550	.430	.300	.670	.430	.400	.820	.550			
.12	.180	.550	.330	.300	.550	.430	.300	.550	.430	.300	.550	.430	.300	.820	.430	.400	.820	.550			
.15	.180	.550	.330	.300	.550	.430	.300	.550	.430	.300	.670	.430	.300	.820	.430	.400	1.240	.550			
.18	.180	.550	.330	.300	.670	.430	.300	.670	.430	.300	.670	.430	.400	.820	.550	.400	1.240	.550			
.22	.240	.550	.370	.300	.670	.430	.300	.670	.430	.300	.820	.430	.400	.820	.550	.400	1.240	.550			
.27	.240	.550	.370	.300	.670	.430	.300	.670	.430	.300	.820	.430	.400	.820	.550	.570	1.240	.730			
.33	.300	.550	.430	.300	.820	.430	.300	.820	.430	.400	.820	.550	.400	1.040	.550	.570	1.240	.730			
.39	.300	.550	.430	.400	.820	.550	.400	.820	.550	.400	.820	.550	.400	1.240	.550	.570	1.240	.730			
.47	.300	.670	.430	.400	.820	.550	.400	.820	.550	.400	.820	.550	.400	1.240	.550	.570	1.240	.730			
.56	.300	.670	.430	.400	.820	.550	.400	.820	.550	.400	1.040	.550	.570	1.240	.730	.700	1.240	.940			
.68	.300	.670	.430	.400	1.040	.550	.400	1.040	.550	.400	1.240	.550	.570	1.240	.730	.700	1.240	.940			
.82	.300	.820	.430	.400	1.040	.550	.400	1.040	.550	.400	1.240	.550	.570	1.240	.730	.700	1.750	1.125			
1.0	.300	.670	.430	.400	1.240	.550	.400	1.240	.550	.570	1.240	.730	.570	1.240	.730	.700	1.750	1.125			
1.25	.400	.820	.550	.570	1.240	.730	.570	1.240	.730	.570	1.240	.730	.700	1.240	.940	.700	1.750	1.125			
1.50	.400	.820	.550	.570	1.240	.730	.570	1.240	.730	.570	1.240	.730	.700	1.240	.940	.800	1.750	1.125			
2.00	.400	1.040	.550	.570	1.240	.730	.570	1.240	.730	.700	1.240	.940	.700	1.750	1.125						
3.00	.400	1.240	.550	.700	1.240	.940	.700	1.240	.940	.700	1.750	1.125									
4.00	.570	1.240	.730	.700	1.240	1.125	.700	1.750	1.125	.700	1.750	1.125									
5.00	.570	1.240	.730	.700	1.750	1.125	.700	1.750	1.125	.800	1.750	1.125									
6.00	.570	1.240	.730																		

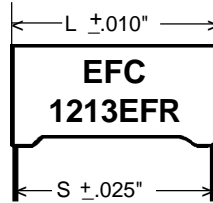
### ELECTRONIC FILM CAPACITORS, INC.

Reidville Industrial Park \* 41 Interstate Lane \* WATERBURY, CONNECTICUT 06705  
Phone (203) 755-5629 FAX (203) 755-0659

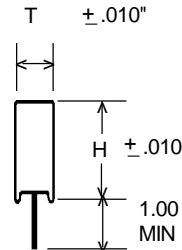
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# Metallized Polypropylene Capacitors



(All dimensions in inches)



# 1213EFR

## Epoxy Case (Radial Leads)

Lead Specs.  
Tinned Copperweld  
B through E cases: 22 AWG  
F through Q cases: 20 AWG

## DIMENSIONS and RATINGS

Cap. μF	63/40 VDC/VAC	160/100 VDC/VAC	250/160 VDC/VAC	400/220 VDC/VAC	630/250 VDC/VAC	CASE SIZE	L $\frac{\text{mm}}{\text{in.}}$	T $\frac{\text{mm}}{\text{in.}}$	H $\frac{\text{mm}}{\text{in.}}$	S $\frac{\text{mm}}{\text{in.}}$
.001	B	B	B	B	C	B	10.5	4	9	7.5
.0012	B	B	B	B	C	C	.413	.157	.354	.295
.0015	B	B	B	B	C		13	4	9	10
.0018	B	B	B	B	C	D	.512	.157	.354	.394
.0022	B	B	B	B	C		13	5	11	10
.0027	B	B	B	B	C	E	.512	.197	.433	.394
.0033	B	B	B	B	C		13	6	12	10
.0039	B	B	B	B	C	F	.512	.236	.472	.394
.0047	B	B	B	B	C		18	5	11	15
.0056	B	B	B	B	C	G	.709	.197	.433	.591
.0068	B	B	B	B	C		18	6	12	15
.0082	B	B	B	C	C	H	.709	.236	.472	.591
.01	B	B	B	C	D		18	7.5	13.5	15
.012	B	B	B	C	D	J	.709	.295	.531	.591
.015	B	B	C	C	E		26.5	6	15	20
.018	B	C	C	C	E	K	1.04	.236	.591	.787
.022	B	C	C	D	F		26.5	7	16	20
.027	B	C	C	D	F	L	1.04	.276	.630	.787
.033	C	C	D	E	G		26.5	6	15	22.5
.039	C	C	D	E	H	M	1.04	.236	.591	.886
.047	C	D	E	F	H		26.5	7	16	22.5
.056	C	D	E	G	H	N	1.04	.276	.630	.886
.068	D	E	E	G	K/M		26.5	8.5	16.3	22.5
.082	D	E	G	H	N	O	1.04	.335	.642	.886
.1	E	F	G	H	N		26.5	10	19	22.5
.12	E	G	G	K/M	O	P	1.04	.394	.748	.886
.15	F	G	H	K/M	P		32	11	20	27.5
.18	F	H	H	N	P	Q	1.26	.433	.787	1.08
.22	G	H	H	N	P		32	13	22	27.5
.27	G	K/M	K/M	O	Q	1.26	.512	.866	1.08	
.33	H	K/M	K/M	P						
.39	H	N	N	P						
.47	J/L	N	O	P						
.56	K/M	O	O	Q						
.68	N	P	P							
.82	O	P	Q							
1.0	O	P								
1.2	P	Q								
1.5	Q									

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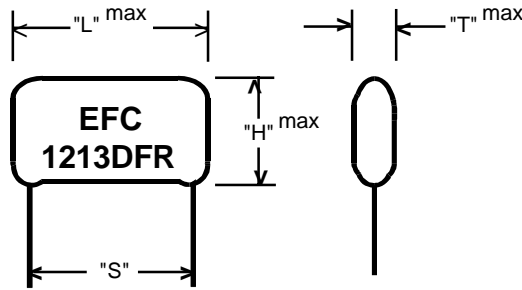
FAX (203) 755-0659

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# Metallized Polypropylene Capacitors



# 1213DFR

## Epoxy Dipped (Radial Leads)

Lead Specs. - Tinned Copperweld

L	S	DIA.
10.0	7.5	0.6
12.5	10.0	0.6
18.0	15.0	0.8
26.0	22.5	0.8
31.0	27.5	0.8
44.0	38.0	1.0

(All dimensions in millimeters)

## DIMENSIONS and RATINGS

Cap. μF	1213DFR-3 160 VDC			1213DFR-3 250 VDC			1213DFR-3 400 VDC			1213DFR-3 630 VDC												
	T	H	L	T	H	L	T	H	L	T	H	L										
.001	4.0	8.0	10.0	4.0	8.0	10.0	4.0	8.0	10.0	4.0	8.0	10.0										
.0012	4.0	8.0	10.0	4.0	8.0	10.0	4.0	8.0	10.0	4.0	8.5	10.0										
.0015	4.0	8.0	10.0	4.0	8.0	10.0	4.0	8.0	10.0	4.0	8.5	10.0										
.0022	4.0	8.0	10.0	4.0	8.0	10.0	4.0	8.0	10.0	4.0	9.0	10.0										
.0027	4.0	8.0	10.0	4.0	8.0	10.0	4.0	8.0	10.0	4.0	9.0	10.0										
.0039	4.0	8.0	10.0	4.0	8.0	10.0	4.0	8.5	10.0	4.0	9.0	10.0										
.0047	4.0	8.0	10.0	4.0	8.0	10.0	4.0	9.0	10.0	4.0	9.0	12.5										
.0056	4.0	8.0	10.0	4.0	8.0	10.0	4.0	9.0	10.0	4.0	9.0	12.5										
.0068	4.0	8.0	10.0	4.0	8.0	10.0	4.5	9.0	10.0	4.5	9.0	12.5										
.0082	4.0	8.0	10.0	4.0	8.0	10.0	4.5	9.0	10.0	5.0	9.5	12.5										
.01	4.0	8.0	10.0	4.0	8.0	10.0	4.5	9.0	10.0	5.0	10.0	12.5										
.012	4.0	8.0	10.0	4.0	8.0	10.0	4.5	9.0	12.5	5.5	11.0	12.5										
.015	4.0	8.0	10.0	4.0	8.5	10.0	4.5	9.0	12.5	6.0	12.0	12.5										
.018	4.0	8.0	10.0	4.0	8.5	10.0	4.5	9.0	12.5	5.5	11.0	18.0										
.022	4.0	8.0	10.0	4.0	9.0	10.0	5.0	9.5	12.5	6.0	12.0	18.0										
.027	4.0	8.5	10.0	4.0	9.0	10.0	5.0	10.0	12.5	6.5	12.0	18.0										
.033	4.0	8.5	10.0	4.5	9.0	12.5	5.5	11.0	12.5	6.5	12.5	18.0										
.039	4.0	9.0	10.0	5.0	10.0	12.5	6.0	12.0	12.5	7.0	13.0	18.0										
.047	4.0	9.0	10.0	5.5	10.5	12.5	6.5	12.5	12.5	7.5	13.5	18.0										
.056	4.0	9.0	10.0	5.5	11.0	12.5	5.5	11.0	18.0	8.0	14.0	18.0										
.068	4.0	9.0	12.5	6.0	12.0	12.5	6.5	12.5	18.0	8.5	16.0	18.0										
.082	4.5	9.0	12.5	5.0	10.0	18.0	7.0	13.0	18.0	8.0	14.0	26.0										
.1	4.5	9.5	12.5	5.5	11.0	18.0	7.5	14.0	18.0	8.5	16.0	26.0										
.12	5.0	10.0	12.5	6.0	12.0	18.0	8.0	14.5	18.0	9.0	16.5	26.0										
.15	5.5	11.0	12.5	6.5	12.5	18.0	8.5	16.0	18.0	9.5	18.0	26.0										
.18	6.0	12.0	12.5	7.0	13.0	18.0	8.0	14.0	26.0	9.5	17.0	31.0										
.22	5.5	11.0	18.0	7.5	14.0	18.0	8.5	16.0	26.0	10.0	19.0	31.0										
.27	6.0	12.0	18.0	8.5	15.5	18.0	9.0	16.5	26.0	10.5	20.0	31.0										
.33	6.5	12.5	18.0	7.5	14.0	26.0	9.5	18.0	26.0	12.0	22.0	31.0										
.39	7.0	13.0	18.0	8.0	14.5	26.0	9.5	18.0	31.0	13.0	23.0	31.0										
.47	7.5	13.5	18.0	8.5	15.0	26.0	10.0	19.0	31.0	14.0	25.0	31.0										
.56	8.0	14.5	18.0	9.0	16.5	26.0	11.0	20.0	31.0	15.0	27.0	31.0										
.68	8.5	16.0	18.0	9.5	18.0	26.0	12.0	22.0	31.0	17.0	32.0	31.0										
.82	8.0	14.5	26.0	9.5	17.0	31.0	13.0	23.0	31.0	15.0	27.0	44.0										
1.0	8.5	16.0	26.0	10.0	19.0	31.0	14.0	25.0	31.0	17.0	32.0	44.0										
1.2	9.0	16.5	26.0	11.0	20.0	31.0	15.0	27.0	31.0													
1.5	9.5	18.0	26.0	12.5	23.0	31.0	17.0	32.0	31.0													
1.8	9.5	18.0	31.0	13.0	24.0	31.0	15.0	27.0	44.0													
2.2	10.0	20.0	31.0	14.0	26.0	31.0	17.0	32.0	44.0													
2.7	11.5	21.0	31.0	15.5	28.0	31.0																
3.3	12.5	23.0	31.0	17.5	33.0	31.0																
3.9	13.5	25.0	31.0	16.5	28.0	44.0																
4.7	15.0	26.0	31.0	17.5	33.0	44.0																
5.6	16.0	28.0	31.0																			
6.8	17.0	30.0	31.0																			

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Phone (203) 755-5629 \* E-Mail: [efc@filmcapacitors.com](mailto:efc@filmcapacitors.com) \* FAX (203) 755-0659