

Series 1213

Metallized Polypropylene

Features: Flame retardant to UL94, excellent long term stability, self healing, high insulation resistance, low dissipation factor, high frequency operation.

Applications: Timing circuits, switch mode power supplies (SMPS).

Packaging: Axial wrap and fill (TF, TC), radial lead box (EFR), axial lead epoxy tube (EC).

Specifications

1) Temperature Range

-55°C to +105°C at rated voltage.

2) Capacitance

0.001µF to 20µF

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

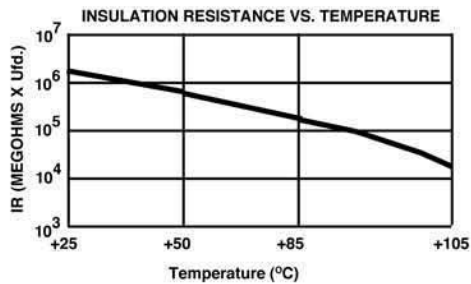
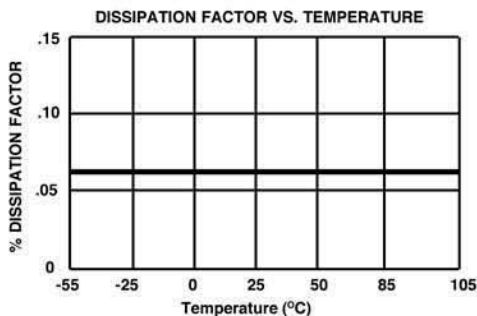
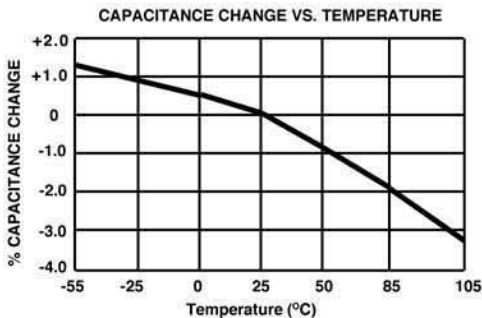
Series 1213 shall meet the requirements of MIL-STD. 202, Method 103B.

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 (μ 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



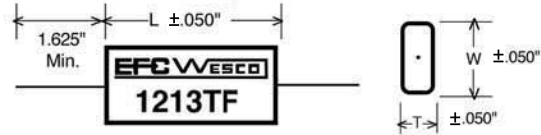
Please consult factory for special requirements, including non-standard values and sizes

1213TF Oval Wrap & Fill

Metallized Polypropylene Capacitors

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

Dimensions and Ratings



Cap.	50 VDC			
μF	Part #	T	W	L
.001	1213TF-3-.001-0-*	.100	.190	.406
.0012	1213TF-3-.0012-0-*	.100	.190	.406
.0015	1213TF-3-.0015-0-*	.100	.190	.406
.0022	1213TF-3-.0022-0-*	.100	.190	.406
.0027	1213TF-3-.0027-0-*	.100	.190	.406
.0039	1213TF-3-.0039-0-*	.100	.190	.406
.0047	1213TF-3-.0047-0-*	.100	.190	.406
.0056	1213TF-3-.0056-0-*	.100	.190	.406
.0068	1213TF-3-.0068-0-*	.100	.190	.406
.0082	1213TF-3-.0082-0-*	.100	.190	.406
.01	1213TF-3-.01-0-*	.100	.190	.406
.012	1213TF-3-.012-0-*	.100	.190	.406
.015	1213TF-3-.015-0-*	.100	.190	.406
.018	1213TF-3-.018-0-*	.100	.190	.406
.022	1213TF-3-.022-0-*	.100	.190	.406
.027	1213TF-3-.027-0-*	.110	.200	.406
.033	1213TF-3-.033-0-*	.120	.220	.406
.039	1213TF-3-.039-0-*	.140	.230	.406
.047	1213TF-3-.047-0-*	.150	.250	.406
.056	1213TF-3-.056-0-*	.170	.270	.406
.068	1213TF-3-.068-0-*	.190	.290	.406
.082	1213TF-3-.082-0-*	.130	.220	.531
.1	1213TF-3-.1-0-*	.150	.240	.531
.12	1213TF-3-.12-0-*	.160	.260	.531
.15	1213TF-3-.15-0-*	.190	.280	.531
.18	1213TF-3-.18-0-*	.210	.300	.531
.22	1213TF-3-.22-0-*	.240	.330	.531
.27	1213TF-3-.27-0-*	.200	.300	.656
.33	1213TF-3-.33-0-*	.230	.320	.656
.39	1213TF-3-.39-0-*	.250	.350	.656
.47	1213TF-3-.47-0-*	.280	.380	.656
.56	1213TF-3-.56-0-*	.260	.360	.781
.68	1213TF-3-.68-0-*	.290	.390	.781
.82	1213TF-3-.82-0-*	.330	.420	.781
1.0	1213TF-3-1.0-0-*	.360	.460	.781
1.25	1213TF-3-1.2-0-*	.360	.460	.906
1.5	1213TF-3-1.5-0-*	.400	.500	.906
2.0	1213TF-3-2.0-0-*	.390	.480	1.190
3.0	1213TF-3-3.0-0-*	.470	.590	1.190
4.0	1213TF-3-4.0-0-*	.440	.680	1.190
5.0	1213TF-3-5.0-0-*	.540	.670	1.440
6.0	1213TF-3-6.0-0-*	.600	.720	1.440

Cap.	100 VDC			
μF	Part #	T	W	L
.001	1213TF-3-.001-1-*	.120	.210	.406
.0012	1213TF-3-.0012-1-*	.120	.210	.406
.0015	1213TF-3-.0015-1-*	.120	.210	.406
.0022	1213TF-3-.0022-1-*	.120	.210	.406
.0027	1213TF-3-.0027-1-*	.120	.210	.406
.0039	1213TF-3-.0039-1-*	.120	.210	.406
.0047	1213TF-3-.0047-1-*	.120	.210	.406
.0056	1213TF-3-.0056-1-*	.120	.210	.406
.0068	1213TF-3-.0068-1-*	.120	.210	.406
.0082	1213TF-3-.0082-1-*	.120	.210	.406
.01	1213TF-3-.01-1-*	.120	.210	.406
.012	1213TF-3-.012-1-*	.120	.210	.406
.015	1213TF-3-.015-1-*	.120	.210	.406
.018	1213TF-3-.018-1-*	.120	.210	.406
.022	1213TF-3-.022-1-*	.120	.220	.406
.027	1213TF-3-.027-1-*	.140	.230	.406
.033	1213TF-3-.033-1-*	.160	.250	.406
.039	1213TF-3-.039-1-*	.180	.270	.406
.047	1213TF-3-.047-1-*	.120	.210	.531
.056	1213TF-3-.056-1-*	.130	.220	.531
.068	1213TF-3-.068-1-*	.150	.240	.531
.082	1213TF-3-.082-1-*	.160	.260	.531
.1	1213TF-3-.1-1-*	.190	.280	.531
.12	1213TF-3-.12-1-*	.210	.300	.531
.15	1213TF-3-.15-1-*	.240	.330	.531
.18	1213TF-3-.18-1-*	.200	.300	.656
.22	1213TF-3-.22-1-*	.230	.320	.656
.27	1213TF-3-.27-1-*	.260	.350	.656
.33	1213TF-3-.33-1-*	.290	.380	.656
.39	1213TF-3-.39-1-*	.270	.360	.781
.47	1213TF-3-.47-1-*	.300	.390	.781
.56	1213TF-3-.56-1-*	.330	.420	.781
.68	1213TF-3-.68-1-*	.310	.430	.906
.82	1213TF-3-.82-1-*	.340	.470	.906
1.0	1213TF-3-1.0-1-*	.380	.510	.906
1.25	1213TF-3-1.2-1-*	.360	.480	1.190
1.5	1213TF-3-1.5-1-*	.400	.520	1.190
2.0	1213TF-3-2.0-1-*	.470	.590	1.190
3.0	1213TF-3-3.0-1-*	.490	.650	1.440
4.0	1213TF-3-4.0-1-*	.570	.740	1.440
5.0	1213TF-3-5.0-1-*	.650	.820	1.440
6.0	1213TF-3-6.0-1-*	.680	.850	1.570
8.0	1213TF-3-8.0-1-*	.800	.970	1.570
10.0	1213TF-3-10.0-1-*	.840	1.040	1.690
12.0	1213TF-3-12.0-1-*	.850	1.040	1.940
15.0	1213TF-3-15.0-1-*	.960	1.160	1.940
20.0	1213TF-3-20.0-1-*	1.040	1.230	2.250

Cap.	160 VDC			
μF	Part #	T	W	L
.001	1213TF-3-.001-1.6-*	.120	.210	.406
.0012	1213TF-3-.0012-1.6-*	.120	.210	.406
.0015	1213TF-3-.0015-1.6-*	.120	.210	.406
.0022	1213TF-3-.0022-1.6-*	.120	.210	.406
.0027	1213TF-3-.0027-1.6-*	.120	.210	.406
.0039	1213TF-3-.0039-1.6-*	.120	.210	.406
.0047	1213TF-3-.0047-1.6-*	.120	.210	.406
.0056	1213TF-3-.0056-1.6-*	.120	.210	.406
.0068	1213TF-3-.0068-1.6-*	.120	.210	.406
.0082	1213TF-3-.0082-1.6-*	.120	.210	.406
.01	1213TF-3-.01-1.6-*	.120	.210	.406
.012	1213TF-3-.012-1.6-*	.120	.210	.406
.015	1213TF-3-.015-1.6-*	.120	.210	.406
.018	1213TF-3-.018-1.6-*	.120	.210	.406
.022	1213TF-3-.022-1.6-*	.120	.220	.406
.027	1213TF-3-.027-1.6-*	.140	.230	.406
.033	1213TF-3-.033-1.6-*	.160	.250	.406
.039	1213TF-3-.039-1.6-*	.180	.270	.406
.047	1213TF-3-.047-1.6-*	.120	.210	.531
.056	1213TF-3-.056-1.6-*	.130	.220	.531
.068	1213TF-3-.068-1.6-*	.150	.240	.531
.082	1213TF-3-.082-1.6-*	.160	.260	.531
.1	1213TF-3-.1-1.6-*	.190	.280	.531
.12	1213TF-3-.12-1.6-*	.210	.300	.531
.15	1213TF-3-.15-1.6-*	.240	.330	.531
.18	1213TF-3-.18-1.6-*	.200	.300	.656
.22	1213TF-3-.22-1.6-*	.230	.320	.656
.27	1213TF-3-.27-1.6-*	.260	.350	.656
.33	1213TF-3-.33-1.6-*	.290	.380	.656
.39	1213TF-3-.39-1.6-*	.270	.360	.781
.47	1213TF-3-.47-1.6-*	.300	.390	.781
.56	1213TF-3-.56-1.6-*	.330	.420	.781
.68	1213TF-3-.68-1.6-*	.310	.430	.906
.82	1213TF-3-.82-1.6-*	.340	.470	.906
1.0	1213TF-3-1.0-1.6-*	.380	.510	.906
1.25	1213TF-3-1.25-1.6-*	.360	.480	1.190
1.5	1213TF-3-1.5-1.6-*	.400	.520	1.190
2.0	1213TF-3-2.0-1.6-*	.470	.590	1.190
3.0	1213TF-3-3.0-1.6-*	.490	.650	1.440
4.0	1213TF-3-4.0-1.6-*	.570	.740	1.440
5.0	1213TF-3-5.0-1.6-*	.650	.820	1.440
6.0	1213TF-3-6.0-1.6-*	.680	.850	1.570
8.0	1213TF-3-8.0-1.6-*	.800	.970	1.570
10.0	1213TF-3-10.0-1.6-*	.840	1.040	1.690
12.0	1213TF-3-12.0-1.6-*	.850	1.040	1.940
15.0	1213TF-3-15.0-1.6-*	.960	1.160	1.940
20.0	1213TF-3-20.0-1.6-*	1.040	1.230	2.250

* - Please insert appropriate tolerance code



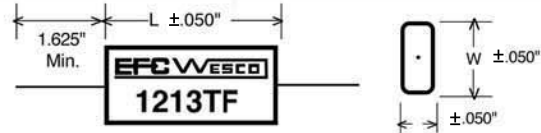
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1213TF Oval Wrap & Fill

Metallized Polypropylene Capacitors

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

Dimensions and Ratings



200 VDC					400 VDC					600 VDC				
Cap.	Part #	T	W	L	Cap.	Part #	T	W	L	Cap.	Part #	T	W	L
.001	1213TF-3-.001-2-*	.120	.210	.406	.001	1213TF-3-.001-4-*	.120	.210	.406	.001	1213TF-3-.001-6-*	.120	.210	.531
.0012	1213TF-3-.0012-2-*	.120	.210	.406	.0012	1213TF-3-.0012-4-*	.120	.210	.406	.0012	1213TF-3-.0012-6-*	.120	.210	.531
.0015	1213TF-3-.0015-2-*	.120	.210	.406	.0015	1213TF-3-.0015-4-*	.120	.210	.406	.0015	1213TF-3-.0015-6-*	.120	.210	.531
.0022	1213TF-3-.0022-2-*	.120	.210	.406	.0022	1213TF-3-.0022-4-*	.120	.210	.406	.0022	1213TF-3-.0022-6-*	.120	.210	.531
.0027	1213TF-3-.0027-2-*	.120	.210	.406	.0027	1213TF-3-.0027-4-*	.120	.210	.406	.0027	1213TF-3-.0027-6-*	.120	.210	.531
.0039	1213TF-3-.0039-2-*	.120	.210	.406	.0039	1213TF-3-.0039-4-*	.120	.210	.406	.0039	1213TF-3-.0039-6-*	.120	.210	.531
.0047	1213TF-3-.0047-2-*	.120	.210	.406	.0047	1213TF-3-.0047-4-*	.120	.210	.406	.0047	1213TF-3-.0047-6-*	.120	.210	.531
.0056	1213TF-3-.0056-2-*	.120	.210	.406	.0056	1213TF-3-.0056-4-*	.120	.210	.406	.0056	1213TF-3-.0056-6-*	.120	.210	.531
.0068	1213TF-3-.0068-2-*	.120	.210	.406	.0068	1213TF-3-.0068-4-*	.120	.210	.406	.0068	1213TF-3-.0068-6-*	.120	.210	.531
.0082	1213TF-3-.0082-2-*	.120	.210	.406	.0082	1213TF-3-.0082-4-*	.120	.210	.406	.0082	1213TF-3-.0082-6-*	.120	.210	.531
.01	1213TF-3-.01-2-*	.120	.210	.406	.01	1213TF-3-.01-4-*	.130	.230	.406	.01	1213TF-3-.01-6-*	.130	.230	.531
.012	1213TF-3-.012-2-*	.120	.210	.406	.012	1213TF-3-.012-4-*	.150	.250	.406	.012	1213TF-3-.012-6-*	.150	.240	.531
.015	1213TF-3-.015-2-*	.120	.210	.406	.015	1213TF-3-.015-4-*	.170	.270	.406	.015	1213TF-3-.015-6-*	.170	.260	.531
.018	1213TF-3-.018-2-*	.140	.230	.406	.018	1213TF-3-.018-4-*	.190	.290	.406	.018	1213TF-3-.018-6-*	.190	.280	.531
.022	1213TF-3-.022-2-*	.150	.250	.406	.022	1213TF-3-.022-4-*	.130	.220	.531	.022	1213TF-3-.022-6-*	.210	.310	.531
.027	1213TF-3-.027-2-*	.170	.270	.406	.027	1213TF-3-.027-4-*	.150	.240	.531	.027	1213TF-3-.027-6-*	.240	.340	.531
.033	1213TF-3-.033-2-*	.120	.210	.531	.033	1213TF-3-.033-4-*	.170	.260	.531	.033	1213TF-3-.033-6-*	.210	.300	.656
.039	1213TF-3-.039-2-*	.130	.220	.531	.039	1213TF-3-.039-4-*	.190	.280	.531	.039	1213TF-3-.039-6-*	.230	.330	.656
.047	1213TF-3-.047-2-*	.150	.240	.531	.047	1213TF-3-.047-4-*	.210	.300	.531	.047	1213TF-3-.047-6-*	.260	.350	.656
.056	1213TF-3-.056-2-*	.160	.260	.531	.056	1213TF-3-.056-4-*	.230	.330	.531	.056	1213TF-3-.056-6-*	.290	.380	.656
.068	1213TF-3-.068-2-*	.180	.280	.531	.068	1213TF-3-.068-4-*	.200	.290	.656	.068	1213TF-3-.068-6-*	.250	.380	.781
.082	1213TF-3-.082-2-*	.210	.300	.531	.082	1213TF-3-.082-4-*	.220	.320	.656	.082	1213TF-3-.082-6-*	.280	.410	.781
.1	1213TF-3-.1-2-*	.230	.330	.531	.1	1213TF-3-.1-4-*	.250	.340	.656	.1	1213TF-3-.1-6-*	.280	.400	.906
.12	1213TF-3-.12-2-*	.200	.290	.656	.12	1213TF-3-.12-4-*	.280	.370	.656	.12	1213TF-3-.12-6-*	.310	.430	.906
.15	1213TF-3-.15-2-*	.230	.320	.656	.15	1213TF-3-.15-4-*	.250	.370	.781	.15	1213TF-3-.15-6-*	.350	.480	.906
.18	1213TF-3-.18-2-*	.250	.350	.656	.18	1213TF-3-.18-4-*	.280	.400	.781	.18	1213TF-3-.18-6-*	.390	.520	.906
.22	1213TF-3-.22-2-*	.280	.380	.656	.22	1213TF-3-.22-4-*	.310	.440	.781	.22	1213TF-3-.22-6-*	.340	.510	1.190
.27	1213TF-3-.27-2-*	.250	.380	.781	.27	1213TF-3-.27-4-*	.310	.430	.906	.27	1213TF-3-.27-6-*	.380	.550	1.190
.33	1213TF-3-.33-2-*	.280	.410	.781	.33	1213TF-3-.33-4-*	.350	.470	.906	.33	1213TF-3-.33-6-*	.430	.600	1.190
.39	1213TF-3-.39-2-*	.310	.440	.781	.39	1213TF-3-.39-4-*	.380	.510	.906	.39	1213TF-3-.39-6-*	.480	.640	1.190
.47	1213TF-3-.47-2-*	.300	.430	.906	.47	1213TF-3-.47-4-*	.330	.490	1.190	.47	1213TF-3-.47-6-*	.530	.700	1.190
.56	1213TF-3-.56-2-*	.340	.460	.906	.56	1213TF-3-.56-4-*	.370	.530	1.190	.56	1213TF-3-.56-6-*	.510	.670	1.190
.68	1213TF-3-.68-2-*	.380	.500	.906	.68	1213TF-3-.68-4-*	.410	.580	1.190	.68	1213TF-3-.68-6-*	.570	.730	1.190
.82	1213TF-3-.82-2-*	.420	.550	.906	.82	1213TF-3-.82-4-*	.460	.630	1.190	.82	1213TF-3-.82-6-*	.630	.800	1.440
1.0	1213TF-3-1.0-2-*	.370	.530	1.190	1.0	1213TF-3-1.0-4-*	.520	.680	1.190	1.0	1213TF-3-1.0-6-*	.670	.830	1.570
1.25	1213TF-3-1.25-2-*	.420	.590	1.190	1.25	1213TF-3-1.25-4-*	.500	.670	1.440	1.25	1213TF-3-1.25-6-*	.750	.920	1.570
1.5	1213TF-3-1.5-2-*	.470	.630	1.190	1.5	1213TF-3-1.5-4-*	.560	.730	1.440	1.5	1213TF-3-1.5-6-*	.770	.970	1.690
2.0	1213TF-3-2.0-2-*	.470	.640	1.440	2.0	1213TF-3-2.0-4-*	.660	.830	1.440	2.0	1213TF-3-2.0-6-*	.910	1.110	1.690
3.0	1213TF-3-3.0-2-*	.600	.770	1.440	3.0	1213TF-3-3.0-4-*	.780	.950	1.570	3.0	1213TF-3-3.0-6-*	1.140	1.340	1.690
4.0	1213TF-3-4.0-2-*	.670	.830	1.570	4.0	1213TF-3-4.0-4-*	.850	1.050	1.690	4.0	1213TF-3-4.0-6-*	1.220	1.410	1.940
5.0	1213TF-3-5.0-2-*	.750	.920	1.570	5.0	1213TF-3-5.0-4-*	.970	1.160	1.690	5.0	1213TF-3-5.0-6-*	1.270	1.460	2.250
6.0	1213TF-3-6.0-2-*	.770	.970	1.690	6.0	1213TF-3-6.0-4-*	.970	1.170	1.940					
8.0	1213TF-3-8.0-2-*	.830	1.020	1.940	8.0	1213TF-3-8.0-4-*	1.050	1.250	2.250					
10.0	1213TF-3-10.0-2-*	.940	1.130	1.940	10.0	1213TF-3-10.0-4-*	1.190	1.380	2.250					
12.0	1213TF-3-12.0-2-*	.960	1.150	2.250										

* - Please insert appropriate tolerance code