ELECTRONIC FILM CAPACITORS, INC.

Reidville Industrial Park * 41 Interstate Lane
WATERBURY, CONNECTICUT 06705

PHONE (203) 755-5629 FAX (203) 755-0659

# METALLIZED POLYCARBONATE

# SERIES 1613

EFC Series 1613 are metallized polycarbonate capacitors. This series offers the advantage of miniature size, superior stability, self healing, high insulation resistance, low dissipation factor and high frequency operation. Suggested applications include: timing circuits, filters, high current applications. Packaging options include: wrap and fill (TF, TC), radial lead box (EFR), axial lead (EC, EF).

## SPECIFICATIONS

### 1. TEMPERATURE RANGE

- 55 $^{O}$C to +125 $^{O}$C at rated voltage.

### 2. CAPACITANCE

Capacitors $\leq$ 1.0 MFD shall be measured at 1 KHz $\pm$ 20 HZ. Capacitors >1.0 MFD shall be measured at 120 HZ. Measurements shall be taken at 25 $^{O}$C.

### 3. DIELECTRIC STRENGTH

At 25 $^{O}$C, 150% of rated voltage when applied terminal to terminal for one minute through a current limiting resistance.

### 4. INSULATION RESISTANCE

At 25 $^{O}$C after 2 minutes charge time at rated voltage or 500 VDC, whichever is less, the minimum IR shall be 50,000 Megohm-Microfarad, but need not exceed 100,000 Megohms for voltages greater than 75 VDC, and 15,000 Megohm-Microfarads, but need not exceed 50,000 Megohms for 75 VDC or less.

### 5. HUMIDITY RESISTANCE

Series 1613 shall meet the requirements of MIL-STD. 202C, Method 103B.

### 6. DISSIPATION FACTOR

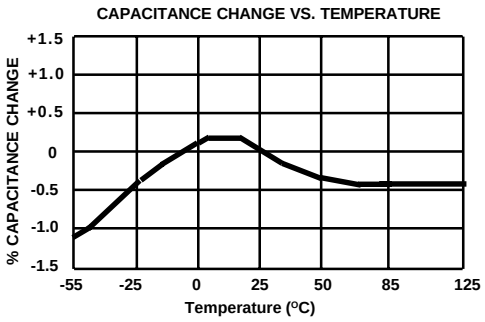
Shall be 0.3 % max. when measured as in Par. 2.

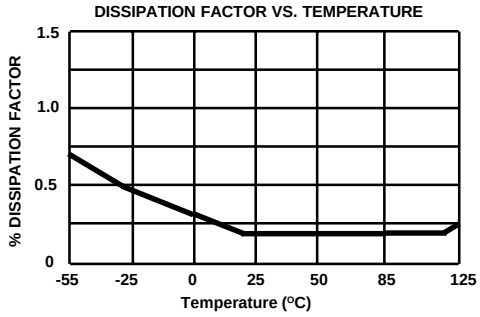
### 7. LIFE TEST

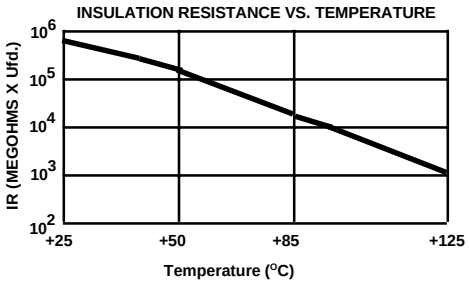
Will withstand the application of 140% rated voltage at +125 $^{0}$C for 250 hours with not more than one failure in 12 permitted.

## TYPICAL TEMPERATURE CURVES

### METALLIZED POLYCARBONATE



# CATALOG NOMENCLATURE

*** 1613 EFR - 3 - .1 - 1 - 5**

**CASE CODE**
TC - WRAP & FILL - ROUND - AXIAL
TF - WRAP & FILL - FLAT - AXIAL
EC - EPOXY CASE - ROUND - AXIAL
EF - EPOXY CASE - FLAT - AXIAL
EFR - EPOXY CASE - FLAT - RADIAL

**DIELECTRIC CODE**
1206 - POLYPROPYLENE/FOIL
1213 - METALLIZED POLYPROPYLENE
1306 - POLYESTER/FOIL
1313 - METALLIZED POLYESTER
1606 - POLYCARBONATE/FOIL
1613 - METALLIZED POLYCARBONATE
1906 - POLYSTYRENE/FOIL

**SIZE CODE**
3 - STANDARD
2 - MINIATURE
1 - SUBMINIATURE
X - NON-STANDARD

FOR EFC METRIC CASES USE THE ONE LETTER CASE CODE LISTED.

FOR EFC "EC" STYLE USE THE TWO LETTER CASE CODE.

**CAPACITANCE**
IN MICROFARADS (µF)

**VOLTAGE**
.35 - 35 VDC
0 - 50 VDC
1 - 100 VDC
2 - 200 VDC
3 - 300 VDC
4 - 400 VDC
ETC.

**TOLERANCE**
1 - 1%
2 - 2%
5 - 5%
ETC.

## * OPTIONS

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:

A1206 = -150 PPM/°C ±30 PPM
T1206 = -270 PPM/°C ±30 PPM
01906 = ZERO PPM/°C ±50 PPM
A1906 = -80 PPM/°C ±30 PPM
T1906 = -120 PPM/°C ±30 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**.

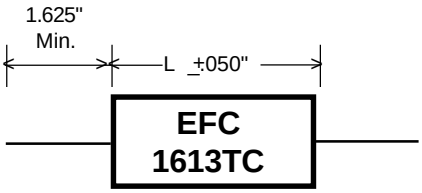
**HIGH AMPERAGE AND PULSE CURRENTS:**
Dual metallized carriers allow these capacitors to handle high amperage and pulsing currents. Available in both polyester and polypropylene dielectrics. Specify with the prefix **MF**. Contact the factory for an **MF** spec. sheet.

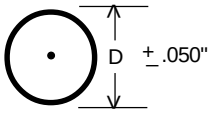
**SWITCH MODE POWER SUPPLY:**
Polypropylene and polyester capacitors designed for SMPS have low ESR and high current rating should be specified with the **SP** prefix.

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

# 1613TC

**Tubular**
**Wrap and Fill**




# Metallized Polycarbonate Capacitors

(All dimensions in inches)

## DIMENSIONS and RATINGS

| Cap. | 1613TC-1 50 VDC | | 1613TC-2 75 VDC | | 1613TC-2 100 VDC | | 1613TC-3 150 VDC | | 1613TC-3 200 VDC | | 1613TC-3 400 VDC | | 1613TC-3 600 VDC | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| µF | D | L | D | L | D | L | D | L | D | L | D | L | D | L |
| .001 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .531 |
| .0012 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .531 |
| .0015 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .531 |
| .0022 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .531 |
| .0027 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .531 |
| .0039 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .531 |
| .0047 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .531 |
| .0056 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .190 | .531 |
| .0068 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .200 | .406 | .210 | .531 |
| .0082 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .220 | .406 | .230 | .531 |
| .01 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .240 | .406 | .250 | .531 |
| .012 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .531 | .270 | .531 |
| .015 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .200 | .531 | .300 | .531 |
| .018 | .180 | .406 | .180 | .406 | .180 | .406 | .180 | .406 | .200 | .406 | .210 | .531 | .270 | .656 |
| .022 | .180 | .406 | .180 | .406 | .180 | .406 | .190 | .406 | .220 | .406 | .230 | .531 | .290 | .656 |
| .027 | .180 | .406 | .180 | .406 | .180 | .406 | .200 | .406 | .240 | .406 | .250 | .531 | .320 | .656 |
| .033 | .180 | .406 | .180 | .406 | .180 | .406 | .220 | .406 | .180 | .531 | .280 | .531 | .350 | .656 |
| .039 | .180 | .406 | .180 | .406 | .180 | .406 | .240 | .406 | .190 | .531 | .250 | .656 | .340 | .781 |
| .047 | .180 | .406 | .180 | .406 | .190 | .406 | .180 | .531 | .210 | .531 | .270 | .656 | .370 | .781 |
| .056 | .180 | .406 | .180 | .406 | .210 | .406 | .190 | .531 | .230 | .531 | .300 | .656 | .400 | .781 |
| .068 | .180 | .406 | .200 | .406 | .230 | .406 | .210 | .531 | .250 | .531 | .320 | .656 | .440 | .781 |
| .082 | .180 | .406 | .220 | .406 | .200 | .468 | .230 | .531 | .270 | .531 | .350 | .656 | .430 | .906 |
| .1 | .180 | .406 | .240 | .406 | .220 | .468 | .250 | .531 | .300 | .531 | .340 | .781 | .470 | .906 |
| .12 | .190 | .406 | .260 | .406 | .240 | .468 | .270 | .531 | .330 | .531 | .370 | .781 | .510 | .906 |
| .15 | .200 | .406 | .230 | .468 | .220 | .531 | .250 | .656 | .290 | .656 | .410 | .781 | .490 | 1.190 |
| .18 | .220 | .406 | .250 | .468 | .240 | .531 | .270 | .656 | .320 | .656 | .400 | .906 | .530 | 1.190 |
| .22 | .240 | .406 | .270 | .468 | .270 | .531 | .290 | .656 | .350 | .656 | .440 | .906 | .580 | 1.190 |
| .27 | .210 | .468 | .300 | .468 | .240 | .656 | .330 | .656 | .390 | .656 | .490 | .906 | .650 | 1.190 |
| .33 | .230 | .468 | .330 | .468 | .260 | .656 | .360 | .656 | .370 | .781 | .540 | .906 | .630 | 1.440 |
| .39 | .250 | .468 | .300 | .531 | .280 | .656 | .340 | .781 | .400 | .781 | .490 | 1.190 | .680 | 1.440 |
| .47 | .230 | .531 | .330 | .531 | .310 | .656 | .370 | .781 | .390 | .906 | .540 | 1.190 | .740 | 1.440 |
| .56 | .250 | .531 | .360 | .531 | .340 | .656 | .400 | .781 | .430 | .906 | .580 | 1.190 | .770 | 1.570 |
| .68 | .280 | .531 | .390 | .531 | .342 | .781 | .390 | .906 | .470 | .906 | .640 | 1.190 | .850 | 1.570 |
| .82 | .300 | .531 | .350 | .656 | .350 | .781 | .430 | .906 | .440 | 1.190 | .620 | 1.440 | .890 | 1.690 |
| 1.0 | .330 | .531 | .380 | .656 | .390 | .781 | .410 | 1.190 | .480 | 1.190 | .680 | 1.440 | .900 | 1.940 |
| 1.25 | .300 | .656 | .430 | .656 | .430 | .781 | .450 | 1.190 | .540 | 1.190 | .760 | 1.440 | 1.000 | 1.940 |
| 1.5 | .330 | .656 | .470 | .656 | .420 | .906 | .490 | 1.190 | .590 | 1.190 | .790 | 1.570 | 1.020 | 2.250 |
| 2.0 | .380 | .656 | .460 | .781 | .480 | .906 | .570 | 1.190 | .590 | 1.440 | .870 | 1.690 | 1.180 | 2.250 |
| 3.0 | .400 | .781 | .560 | .781 | .50 | 1.190 | .610 | 1.440 | .720 | 1.440 | .970 | 1.940 | | |
| 4.0 | .460 | .781 | .580 | .906 | .570 | 1.190 | .700 | 1.406 | .790 | 1.570 | 1.120 | 1.940 | | |
| 5.0 | .450 | .906 | .650 | .906 | .560 | 1.440 | .740 | 1.570 | .840 | 1.690 | 1.160 | 2.250 | | |
| 6.0 | .500 | .906 | .590 | 1.190 | .610 | 1.440 | .810 | 1.570 | .880 | 1.820 | | | | |
| 8.0 | .490 | 1.190 | .680 | 1.190 | .710 | 1.440 | .850 | 1.690 | 1.020 | 1.820 | | | | |
| 10.0 | .540 | 1.190 | .680 | 1.440 | .750 | 1.570 | .950 | 1.820 | 1.090 | 1.940 | | | | |
| 12.0 | .590 | 1.190 | .740 | 1.440 | .820 | 1.570 | 1.000 | 1.820 | 1.110 | 2.250 | | | | |
| 15.0 | .580 | 1.440 | | | .870 | 1.690 | 1.110 | 1.940 | 1.240 | 2.250 | | | | |
| 20.0 | .670 | 1.440 | | | .920 | 1.940 | 1.280 | 1.940 | | | | | | |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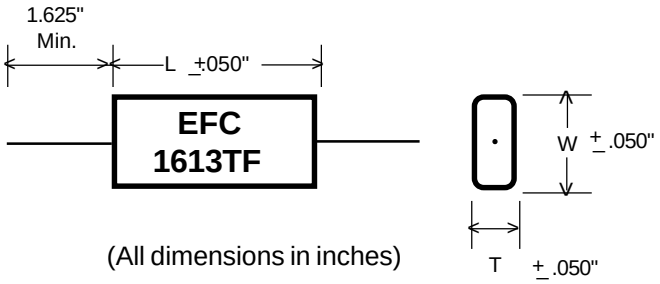
# 1613TF

## Oval
## Wrap and Fill

# Metallized Polycarbonate Capacitors




(All dimensions in inches)

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

## DIMENSIONS and RATINGS

| Cap. | 1613TF-1 50 VDC | | | 1613TF-2 75 VDC | | | 1613TF-2 100 VDC | | | 1613TF-3 150 VDC | | | 1613TF-3 200 VDC | | | 1613TF-3 400 VDC | | | 1613TF-3 600 VDC | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| µF | T | W | L | T | W | L | T | W | L | T | W | L | T | W | L | T | W | L | T | W | L |
| .001 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .531 |
| .0012 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .531 |
| .0015 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .531 |
| .0022 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .531 |
| .0027 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .531 |
| .0039 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .531 |
| .0047 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .531 |
| .0056 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .220 | .406 | .130 | .230 | .531 |
| .0068 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .140 | .230 | .406 | .150 | .240 | .531 |
| .0082 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .160 | .250 | .406 | .170 | .260 | .531 |
| .01 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .180 | .270 | .406 | .190 | .280 | .531 |
| .012 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .531 | .210 | .310 | .531 |
| .015 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .140 | .230 | .531 | .240 | .340 | .531 |
| .018 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .140 | .230 | .406 | .150 | .250 | .531 | .210 | .300 | .656 |
| .022 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .130 | .220 | .406 | .160 | .250 | .406 | .170 | .270 | .531 | .230 | .330 | .656 |
| .027 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .140 | .240 | .406 | .180 | .270 | .406 | .190 | .290 | .531 | .260 | .360 | .656 |
| .033 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .160 | .260 | .406 | .120 | .210 | .531 | .220 | .310 | .531 | .290 | .390 | .656 |
| .039 | .120 | .210 | .406 | .120 | .210 | .406 | .120 | .210 | .406 | .180 | .270 | .406 | .130 | .230 | .531 | .190 | .280 | .656 | .260 | .380 | .781 |
| .047 | .120 | .210 | .406 | .120 | .210 | .406 | .130 | .230 | .406 | .120 | .210 | .531 | .150 | .240 | .531 | .190 | .320 | .656 | .290 | .410 | .781 |
| .056 | .120 | .210 | .406 | .120 | .220 | .406 | .150 | .240 | .406 | .130 | .230 | .531 | .170 | .260 | .531 | .220 | .340 | .656 | .320 | .440 | .781 |
| .068 | .120 | .210 | .406 | .140 | .230 | .406 | .170 | .260 | .406 | .150 | .240 | .531 | .190 | .280 | .531 | .240 | .370 | .656 | .360 | .480 | .781 |
| .082 | .120 | .210 | .406 | .160 | .250 | .406 | .140 | .230 | .468 | .170 | .260 | .531 | .210 | .310 | .531 | .270 | .400 | .656 | .350 | .470 | .906 |
| .1 | .120 | .210 | .406 | .180 | .270 | .406 | .160 | .250 | .468 | .190 | .290 | .531 | .240 | .330 | .531 | .260 | .380 | .781 | .390 | .510 | .906 |
| .12 | .130 | .220 | .406 | .200 | .290 | .406 | .180 | .270 | .468 | .210 | .310 | .531 | .270 | .360 | .531 | .290 | .410 | .781 | .430 | .560 | .906 |
| .15 | .140 | .240 | .406 | .170 | .260 | .468 | .160 | .260 | .531 | .190 | .280 | .656 | .230 | .330 | .656 | .310 | .470 | .781 | .380 | .550 | 1.190 |
| .18 | .160 | .260 | .406 | .190 | .280 | .468 | .180 | .280 | .531 | .210 | .300 | .656 | .260 | .350 | .656 | .300 | .460 | .906 | .430 | .590 | 1.190 |
| .22 | .180 | .280 | .406 | .210 | .300 | .468 | .210 | .300 | .531 | .230 | .330 | .656 | .290 | .390 | .656 | .340 | .500 | .906 | .480 | .650 | 1.190 |
| .27 | .130 | .250 | .468 | .240 | .330 | .468 | .180 | .270 | .656 | .270 | .360 | .656 | .330 | .420 | .656 | .380 | .550 | .906 | .540 | .710 | 1.190 |
| .33 | .170 | .270 | .468 | .270 | .360 | .468 | .200 | .290 | .656 | .300 | .390 | .656 | .290 | .420 | .781 | .430 | .600 | .906 | .520 | .690 | 1.440 |
| .39 | .190 | .290 | .468 | .240 | .340 | .531 | .220 | .320 | .656 | .260 | .380 | .781 | .320 | .450 | .781 | .380 | .550 | 1.190 | .570 | .740 | 1.440 |
| .47 | .170 | .270 | .531 | .270 | .360 | .531 | .250 | .340 | .656 | .290 | .420 | .781 | .310 | .440 | .906 | .430 | .600 | 1.190 | .640 | .810 | 1.440 |
| .56 | .190 | .290 | .531 | .300 | .390 | .531 | .280 | .370 | .656 | .320 | .450 | .781 | .350 | .470 | .906 | .480 | .640 | 1.190 | .660 | .830 | 1.570 |
| .68 | .220 | .310 | .531 | .330 | .430 | .531 | .240 | .370 | .781 | .310 | .440 | .906 | .390 | .520 | .906 | .530 | .700 | 1.190 | .740 | .910 | 1.570 |
| .82 | .240 | .340 | .531 | .290 | .380 | .656 | .270 | .400 | .781 | .350 | .480 | .906 | .330 | .500 | 1.190 | .500 | .690 | 1.440 | .760 | .960 | 1.690 |
| 1.0 | .270 | .370 | .531 | .320 | .420 | .656 | .310 | .430 | .781 | .300 | .470 | 1.190 | .380 | .540 | 1.190 | .560 | .760 | 1.440 | .770 | .970 | 1.940 |
| 1.25 | .240 | .330 | .656 | .370 | .460 | .656 | .350 | .470 | .781 | .350 | .510 | 1.190 | .430 | .600 | 1.190 | .640 | .830 | 1.440 | .880 | 1.070 | 1.940 |
| 1.5 | .270 | .360 | .656 | .410 | .500 | .656 | .340 | .460 | .906 | .390 | .550 | 1.190 | .480 | .650 | 1.190 | .660 | .860 | 1.570 | .900 | 1.090 | 2.250 |
| 2.0 | .320 | .410 | .656 | .380 | .510 | .781 | .400 | .530 | .906 | .460 | .630 | 1.190 | .490 | .650 | 1.440 | .740 | .940 | 1.690 | 1.050 | 1.250 | 2.250 |
| 3.0 | .320 | .440 | .781 | .480 | .610 | .781 | .390 | .560 | 1.190 | .500 | .670 | 1.440 | .620 | .780 | 1.440 | .850 | 1.040 | 1.940 | | | |
| 4.0 | .380 | .500 | .781 | .500 | .620 | .906 | .470 | .630 | 1.190 | .590 | .760 | 1.440 | .680 | .850 | 1.570 | .890 | 1.190 | 1.940 | | | |
| 5.0 | .370 | .500 | .906 | .570 | .690 | .906 | .460 | .620 | 1.440 | .630 | .800 | 1.570 | .720 | .910 | 1.690 | 1.040 | 1.230 | 2.250 | | | |
| 6.0 | .420 | .540 | .906 | .510 | .640 | 1.190 | .510 | .670 | 1.440 | .700 | .870 | 1.570 | .760 | .950 | 1.820 | | | | | | |
| 8.0 | .380 | .550 | 1.190 | .600 | .730 | 1.190 | .600 | .770 | 1.440 | .720 | .920 | 1.690 | .890 | 1.090 | 1.920 | | | | | | |
| 10.0 | .440 | .600 | 1.190 | .570 | .740 | 1.440 | .620 | .820 | 1.570 | .820 | 1.020 | 1.820 | .960 | 1.160 | 1.940 | | | | | | |
| 12.0 | .480 | .650 | 1.190 | .630 | .800 | 1.440 | .690 | .840 | 1.570 | .870 | 1.070 | 1.820 | .980 | 1.180 | 2.250 | | | | | | |
| 15.0 | .470 | .640 | 1.440 | | | | .750 | .890 | 1.690 | .990 | 1.180 | 1.940 | 1.100 | 1.310 | 2.250 | | | | | | |
| 20.0 | .560 | .730 | 1.440 | | | | .800 | .990 | 1.940 | 1.160 | 1.350 | 1.940 | | | | | | | | | |


**ELECTRONIC FILM CAPACITORS, INC.**

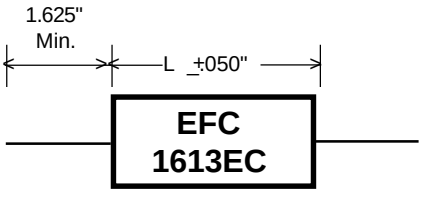
Reidville Industrial Park * 41 Interstate Lane * WATERBURY, CONNECTICUT 06705

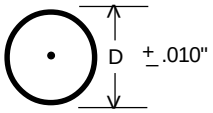
Phone (203) 755-5629 FAX (203) 755-0659


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

# 1613EC

## Epoxy Case (Axial Leads)




(All dimensions in inches)

# Metallized Polycarbonate Capacitors

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

## DIMENSIONS and RATINGS

| Cap. | 1613EC 50 VDC | | 1613EC 75 VDC | | 1613EC 100 VDC | | 1613EC 150 VDC | | 1613EC 200 VDC | | 1613EC 400 VDC | | 1613EC 600 VDC | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| µF | D | L | D | L | D | L | D | L | D | L | D | L | D | L |
| .001 | 1 | A | 1 | A | 1 | A | 1 | A | 1 | A | 1 | A | 1 | B |
| .0012 | 1 | A | 1 | A | 1 | A | 1 | A | 1 | A | 1 | A | 1 | B |
| .0015 | 1 | A | 1 | A | 1 | A | 1 | A | 1 | A | 1 | A | 1 | B |
| .0022 | 1 | A | 1 | A | 1 | A | 1 | A | 1 | A | 1 | A | 1 | B |
| .0027 | 1 | A | 1 | A | 1 | A | 1 | A | 1 | A | 1 | A | 1 | B |
| .0039 | 1 | A | 1 | A | 1 | A | 1 | A | 1 | A | 2 | A | 2 | B |
| .0047 | 1 | A | 1 | A | 1 | A | 1 | A | 1 | A | 2 | A | 2 | B |
| .0056 | 1 | A | 1 | A | 1 | A | 1 | A | 1 | A | 2 | A | 2 | B |
| .0068 | 1 | A | 1 | A | 1 | A | 1 | A | 1 | A | 1 | B | 2 | C |
| .0082 | 1 | A | 1 | A | 1 | A | 1 | A | 1 | A | 2 | B | 2 | C |
| .01 | 1 | A | 1 | A | 1 | A | 1 | A | 2 | A | 2 | B | 3 | C |
| .012 | 1 | A | 1 | A | 1 | A | 1 | A | 2 | A | 2 | B | 4 | C |
| .015 | 1 | A | 2 | A | 1 | A | 2 | A | 2 | A | 3 | B | 4 | C |
| .018 | 1 | A | 2 | A | 1 | A | 2 | A | 1 | B | 3 | B | 4 | C |
| .022 | 1 | A | 2 | A | 1 | A | 2 | A | 2 | B | 3 | C | 4 | D |
| .027 | 1 | A | 2 | A | 1 | A | 2 | B | 2 | B | 3 | C | 4 | D |
| .033 | 1 | A | 3 | A | 2 | A | 2 | B | 2 | B | 4 | C | 5 | D |
| .039 | 1 | A | 3 | A | 2 | A | 2 | B | 2 | B | 4 | C | 5 | E |
| .047 | 1 | A | 2 | A | 2 | A | 2 | B | 3 | B | 4 | C | 5 | E |
| .056 | 1 | A | 2 | A | 2 | A | 2 | B | 3 | C | 4 | D | 6 | E |
| .068 | 1 | A | 2 | A | 2 | B | 3 | B | 3 | C | 4 | D | 7 | E |
| .082 | 1 | A | 2 | A | 2 | B | 2 | C | 4 | C | 5 | D | 7 | E |
| .1 | 2 | A | 3 | A | 2 | B | 3 | C | 4 | C | 5 | E | | |
| .12 | 2 | A | 2 | B | 2 | B | 3 | C | 4 | C | 5 | E | | |
| .15 | 2 | A | 2 | B | 3 | B | 4 | C | 4 | D | 6 | E | | |
| .18 | 3 | A | 2 | B | 2 | C | 4 | C | 4 | D | 7 | E | | |
| .22 | 3 | A | 3 | B | 3 | C | 4 | D | 5 | D | 7 | E | | |
| .27 | 1 | B | 3 | B | 4 | C | 4 | E | 5 | D | 7 | F | | |
| .33 | 2 | B | 3 | C | 4 | C | 5 | D | 5 | E | 7 | F | | |
| .39 | 3 | B | 4 | C | 4 | C | 5 | D | 6 | E | | | | |
| .47 | 3 | C | 4 | C | 4 | D | 5 | E | 6 | E | | | | |
| .56 | 4 | C | 4 | D | 5 | D | 6 | E | 7 | E | | | | |
| .68 | 4 | C | 5 | D | 5 | D | 6 | E | 7 | F | | | | |
| .82 | 4 | C | 5 | D | 5 | E | 7 | E | 7 | F | | | | |
| 1.0 | 4 | C | 5 | D | 6 | E | 7 | E | | | | | | |
| 1.25 | 4 | D | 5 | E | 6 | E | 7 | F | | | | | | |
| 1.5 | 4 | D | 6 | E | 7 | E | | | | | | | | |
| 2.0 | 5 | D | 6 | E | 7 | F | | | | | | | | |
| 3.0 | 5 | E | 7 | F | | | | | | | | | | |
| 4.0 | 6 | F | | | | | | | | | | | | |
| 5.0 | 7 | F | | | | | | | | | | | | |

**DIAMETER**

1 = .187
2 = .225
3 = .250
4 = .312
5 = .375
6 = .437
7 = .500

**SIZE CODE**

**LENGTH**

A = .375
B = .500
C = .625
D = .750
E = .875
F = 1.187

**ELECTRONIC FILM CAPACITORS, INC.**

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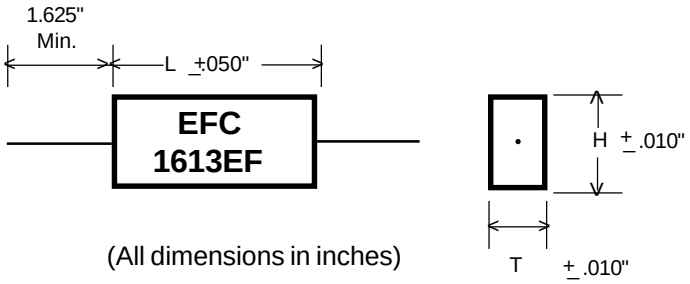
# 1613EF

## Epoxy Case (Axial Leads)




(All dimensions in inches)

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

# Metallized Polycarbonate Capacitors

## DIMENSIONS and RATINGS

| Cap. | 1613EF-1 50 VDC | | | 1613EF-2 75 VDC | | | 1613EF-2 100 VDC | | | 1613EF-3 150 VDC | | | 1613EF-3 200 VDC | | | 1613EF-3 400 VDC | | | 1613EF-3 600 VDC | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| µF | T | H | L | T | H | L | T | H | L | T | H | L | T | H | L | T | H | L | T | H | L |
| .001 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .570 |
| .0012 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .570 |
| .0015 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .570 |
| .0022 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .570 |
| .0027 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .230 | .360 | .550 |
| .0039 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .570 | .230 | .360 | .550 |
| .0047 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .570 | .230 | .360 | .550 |
| .0056 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .570 | .230 | .360 | .550 |
| .0068 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .570 | .230 | .360 | .550 |
| .0082 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .230 | .360 | .550 | .230 | .360 | .550 |
| .01 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .230 | .360 | .550 | .290 | .420 | .570 |
| .012 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .570 | .230 | .360 | .550 | .290 | .420 | .550 |
| .015 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .570 | .170 | .290 | .570 | .230 | .360 | .550 | .290 | .420 | .550 |
| .018 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .570 | .230 | .360 | .550 | .230 | .360 | .550 | .290 | .420 | .670 |
| .022 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .230 | .360 | .550 | .230 | .360 | .550 | .290 | .420 | .570 | .290 | .420 | .670 |
| .027 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .420 | .230 | .360 | .550 | .230 | .360 | .570 | .290 | .420 | .570 | .290 | .420 | .820 |
| .033 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .570 | .230 | .360 | .570 | .230 | .360 | .550 | .290 | .420 | .570 | .290 | .420 | .820 |
| .039 | .170 | .290 | .420 | .170 | .290 | .420 | .170 | .290 | .570 | .230 | .360 | .550 | .230 | .360 | .550 | .290 | .420 | .670 | .390 | .540 | .820 |
| .047 | .170 | .290 | .420 | .230 | .360 | .550 | .170 | .290 | .570 | .230 | .360 | .550 | .230 | .360 | .550 | .290 | .420 | .670 | .390 | .540 | .820 |
| .056 | .170 | .290 | .420 | .230 | .360 | .550 | .170 | .290 | .570 | .230 | .360 | .550 | .230 | .360 | .550 | .290 | .420 | .820 | .390 | .540 | .820 |
| .068 | .170 | .290 | .420 | .230 | .360 | .550 | .230 | .360 | .550 | .230 | .360 | .550 | .290 | .420 | .570 | .290 | .420 | .820 | .390 | .540 | 1.040 |
| .082 | .170 | .290 | .420 | .230 | .360 | .550 | .230 | .360 | .550 | .290 | .420 | .570 | .290 | .420 | .570 | .390 | .540 | .820 | .390 | .540 | 1.240 |
| .1 | .230 | .360 | .550 | .230 | .360 | .550 | .230 | .360 | .550 | .290 | .420 | .570 | .290 | .420 | .670 | .390 | .540 | .820 | .390 | .540 | 1.240 |
| .12 | .230 | .360 | .550 | .230 | .360 | .550 | .230 | .360 | .550 | .290 | .420 | .570 | .290 | .420 | .670 | .390 | .540 | .820 | .560 | .720 | 1.240 |
| .15 | .230 | .360 | .550 | .230 | .360 | .550 | .290 | .360 | .570 | .290 | .420 | .670 | .290 | .420 | .670 | .390 | .540 | .820 | .560 | .720 | 1.240 |
| .18 | .230 | .360 | .550 | .230 | .360 | .570 | .290 | .420 | .570 | .290 | .420 | .670 | .290 | .420 | .820 | .390 | .540 | 1.040 | .560 | .720 | 1.240 |
| .22 | .230 | .360 | .550 | .290 | .420 | .570 | .290 | .420 | .570 | .290 | .420 | .820 | .390 | .540 | .820 | .390 | .540 | 1.240 | .560 | .720 | 1.240 |
| .27 | .230 | .360 | .550 | .290 | .420 | .570 | .290 | .420 | .670 | .290 | .420 | .820 | .390 | .540 | .820 | .390 | .540 | 1.240 | | | |
| .33 | .230 | .360 | .550 | .290 | .420 | .570 | .290 | .420 | .670 | .390 | .540 | .820 | .390 | .540 | .820 | .560 | .720 | 1.240 | | | |
| .39 | .230 | .360 | .550 | .290 | .420 | .670 | .290 | .420 | .820 | .390 | .540 | .820 | .390 | .540 | 1.040 | .560 | .720 | 1.240 | | | |
| .47 | .290 | .420 | .570 | .290 | .420 | .670 | .290 | .420 | .820 | .390 | .540 | .820 | .390 | .540 | 1.040 | .560 | .720 | 1.240 | | | |
| .56 | .290 | .420 | .570 | .290 | .420 | .670 | .390 | .540 | .820 | .390 | .540 | 1.040 | .390 | .540 | 1.240 | .560 | .720 | 1.240 | | | |
| .68 | .290 | .420 | .570 | .290 | .420 | .820 | .390 | .540 | .820 | .390 | .540 | 1.040 | .390 | .550 | 1.240 | | | | | | |
| .82 | .290 | .420 | .670 | .390 | .540 | .820 | .390 | .540 | .820 | .390 | .540 | 1.240 | .560 | .720 | 1.240 | | | | | | |
| 1.0 | .290 | .420 | .670 | .390 | .540 | .820 | .390 | .540 | .820 | .560 | .720 | 1.240 | .560 | .720 | 1.240 | | | | | | |
| 1.25 | .290 | .420 | .820 | .390 | .540 | .820 | .390 | .540 | 1.040 | .560 | .720 | 1.240 | .560 | .720 | 1.240 | | | | | | |
| 1.5 | .290 | .420 | .820 | .390 | .540 | 1.040 | .390 | .540 | 1.240 | .560 | .720 | 1.240 | .560 | .720 | 1.240 | | | | | | |
| 2.0 | .390 | .540 | .820 | .390 | .540 | 1.240 | .560 | .720 | 1.240 | .560 | .720 | 1.240 | | | | | | | | | |
| 3.0 | .390 | .540 | 1.040 | .560 | .720 | 1.240 | .560 | .720 | 1.240 | | | | | | | | | | | | |
| 4.0 | .390 | .540 | 1.240 | .560 | .720 | 1.240 | .560 | .720 | 1.240 | | | | | | | | | | | | |
| 5.0 | .390 | .540 | 1.240 | .560 | .720 | 1.240 | | | | | | | | | | | | | | | |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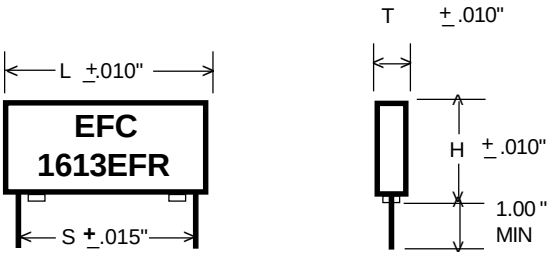
# 1613EFR

## Epoxy Case (Radial Leads)

Lead Specs. - Tinned Copperweld

| L | S | AWG |
|---|---|---|
| .420 | .30 | 22 |
| .550 | .40 | 22 |
| .670 | .50 | 22 |
| .820 | .60 | 22 |
| 1.04 | .80 | 22 |
| 1.24 | 1.10 | 20 |
| 1.75 | 1.60 | 20 |

# Metallized Polycarbonate Capacitors




(All dimensions in inches)

## DIMENSIONS and RATINGS

| Cap. | 1613EFR-1 50 VDC | | | 1613EFR-2 75 VDC | | | 1613EFR-2 100 VDC | | | 1613EFR-3 150 VDC | | | 1613EFR-3 200 VDC | | | 1613EFR-3 400 VDC | | | 1613EFR-3 600 VDC | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| µF | T | L | H | T | L | H | T | L | H | T | L | H | T | L | H | T | L | H | T | L | H |
| .001 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .550 | .330 |
| .0012 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .550 | .330 |
| .0015 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .550 | .330 |
| .0022 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .550 | .330 |
| .0027 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .550 | .330 |
| .0039 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .550 | .330 | .180 | .550 | .330 |
| .0047 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .550 | .330 | .240 | .550 | .370 |
| .0056 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .550 | .330 | .240 | .550 | .370 |
| .0068 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .550 | .330 | .240 | .550 | .370 |
| .0082 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .550 | .330 | .240 | .550 | .370 |
| .01 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .420 | .330 | .240 | .550 | .370 | .300 | .550 | .370 |
| .012 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .420 | .330 | .180 | .550 | .330 | .240 | .550 | .370 | .300 | .550 | .370 |
| .015 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .550 | .330 | .180 | .550 | .330 | .240 | .550 | .370 | .300 | .550 | .370 |
| .018 | .160 | .420 | .330 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .550 | .330 | .180 | .550 | .330 | .240 | .550 | .370 | .300 | .670 | .370 |
| .022 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .420 | .330 | .180 | .550 | .330 | .180 | .550 | .330 | .300 | .550 | .430 | .300 | .670 | .370 |
| .027 | .160 | .420 | .330 | .160 | .420 | .330 | .180 | .420 | .330 | .180 | .550 | .330 | .240 | .550 | .370 | .300 | .550 | .430 | .300 | .820 | .370 |
| .033 | .160 | .420 | .330 | .180 | .420 | .330 | .180 | .550 | .330 | .240 | .550 | .370 | .240 | .550 | .370 | .300 | .550 | .430 | .300 | .820 | .370 |
| .039 | .160 | .420 | .330 | .180 | .420 | .330 | .180 | .550 | .330 | .240 | .550 | .370 | .240 | .550 | .370 | .300 | .670 | .430 | .400 | .820 | .550 |
| .047 | .160 | .420 | .330 | .180 | .550 | .330 | .180 | .550 | .330 | .240 | .550 | .370 | .240 | .550 | .370 | .300 | .670 | .430 | .400 | .820 | .550 |
| .056 | .160 | .420 | .330 | .180 | .550 | .330 | .180 | .550 | .330 | .240 | .550 | .370 | .240 | .550 | .370 | .300 | .820 | .430 | .400 | .820 | .550 |
| .068 | .180 | .420 | .330 | .180 | .550 | .330 | .240 | .550 | .370 | .240 | .550 | .370 | .300 | .550 | .430 | .300 | .820 | .430 | .400 | 1.040 | .550 |
| .082 | .180 | .420 | .330 | .180 | .550 | .330 | .240 | .550 | .370 | .300 | .550 | .430 | .300 | .550 | .430 | .400 | .820 | .550 | .400 | 1.240 | .550 |
| .1 | .180 | .420 | .330 | .180 | .550 | .330 | .240 | .550 | .370 | .300 | .550 | .430 | .300 | .670 | .430 | .400 | .820 | .550 | .400 | 1.240 | .550 |
| .12 | .180 | .550 | .330 | .240 | .550 | .370 | .240 | .550 | .370 | .300 | .550 | .430 | .300 | .670 | .430 | .400 | .820 | .550 | .570 | 1.240 | .730 |
| .15 | .180 | .550 | .330 | .240 | .550 | .370 | .300 | .550 | .430 | .300 | .670 | .430 | .300 | .670 | .430 | .400 | .820 | .550 | .570 | 1.240 | .730 |
| .18 | .180 | .550 | .330 | .240 | .550 | .370 | .300 | .550 | .430 | .300 | .670 | .430 | .300 | .820 | .430 | .400 | 1.040 | .550 | .570 | 1.240 | .730 |
| .22 | .240 | .550 | .370 | .300 | .550 | .430 | .300 | .550 | .430 | .300 | .820 | .430 | .400 | .820 | .550 | .400 | 1.240 | .550 | .570 | 1.240 | .730 |
| .27 | .240 | .550 | .370 | .300 | .550 | .430 | .300 | .670 | .430 | .300 | .820 | .430 | .400 | .820 | .550 | .400 | 1.240 | .550 | .700 | 1.240 | .940 |
| .33 | .240 | .550 | .370 | .300 | .550 | .430 | .300 | .670 | .430 | .400 | .820 | .550 | .400 | .820 | .550 | .570 | 1.240 | .730 | .700 | 1.240 | .940 |
| .39 | .240 | .550 | .370 | .300 | .670 | .430 | .300 | .820 | .430 | .400 | .820 | .550 | .400 | 1.040 | .550 | .570 | 1.240 | .730 | .700 | 1.240 | .940 |
| .47 | .300 | .550 | .430 | .300 | .670 | .430 | .300 | .820 | .430 | .400 | .820 | .550 | .400 | 1.040 | .550 | .570 | 1.240 | .730 | .700 | 1.750 | 1.125 |
| .56 | .300 | .550 | .430 | .300 | .670 | .430 | .400 | .820 | .550 | .400 | 1.040 | .550 | .400 | 1.240 | .550 | .570 | 1.240 | .730 | .700 | 1.750 | 1.125 |
| .68 | .300 | .550 | .430 | .300 | .820 | .430 | .400 | .820 | .550 | .400 | 1.040 | .550 | .400 | 1.240 | .550 | .700 | 1.240 | .940 | .800 | 1.750 | 1.125 |
| .82 | .300 | .670 | .430 | .400 | .820 | .550 | .400 | .820 | .550 | .400 | 1.240 | .550 | .570 | 1.240 | .730 | .700 | 1.240 | .940 | .800 | 1.750 | 1.125 |
| 1.0 | .300 | .670 | .430 | .400 | .820 | .550 | .400 | .820 | .550 | .570 | 1.240 | .730 | .570 | 1.240 | .730 | .700 | 1.750 | 1.125 | | | |
| 1.25 | .300 | .820 | .430 | .400 | .820 | .550 | .400 | 1.040 | .550 | .570 | 1.240 | .730 | .570 | 1.240 | .730 | .700 | 1.750 | 1.125 | | | |
| 1.5 | .300 | .820 | .430 | .400 | 1.040 | .550 | .400 | 1.240 | .550 | .570 | 1.240 | .730 | .570 | 1.240 | .730 | .700 | 1.750 | 1.125 | | | |
| 2.0 | .400 | .820 | .550 | .400 | 1.240 | .550 | .570 | 1.240 | .730 | .570 | 1.240 | .730 | .700 | 1.240 | .940 | .800 | 1.750 | 1.125 | | | |
| 3.0 | .400 | 1.040 | .550 | .570 | 1.240 | .730 | .570 | 1.240 | .730 | .570 | 1.750 | .730 | .700 | 1.750 | 1.125 | | | | | | |
| 4.0 | .400 | 1.240 | .550 | .570 | 1.240 | .730 | .570 | 1.240 | .730 | .700 | 1.750 | 1.125 | .700 | 1.750 | 1.125 | | | | | | |
| 5.0 | .400 | 1.240 | .550 | .570 | 1.240 | .730 | | | | .700 | 1.750 | 1.125 | .800 | 1.750 | 1.125 | | | | | | |
| 6.0 | | | | | | | | | | .800 | 1.750 | 1.125 | | | | | | | | | |


**ELECTRONIC FILM CAPACITORS, INC.**

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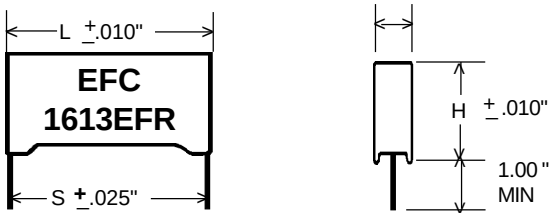
# 1613EFR

## Epoxy Case (Radial Leads)

# Metallized Polycarbonate Capacitors




(All dimensions in inches)

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

## DIMENSIONS and RATINGS

| Cap. µF | 63/40 VDC/VAC | 100/63 VDC/VAC | 160/100 VDC/VAC | 250/160 VDC/VAC | 400/220 VDC/VAC | 630/250 VDC/VAC |
|---|---|---|---|---|---|---|
| .001 | B | B | B | B | B | C |
| .0012 | B | B | B | B | B | C |
| .0015 | B | B | B | B | B | C |
| .0022 | B | B | B | B | B | C |
| .0027 | B | B | B | B | B | C |
| .0039 | B | B | B | B | B | C |
| .0047 | B | B | B | B | B | C |
| .0056 | B | B | B | B | B | C |
| .0068 | B | B | B | B | B | C |
| .0082 | B | B | B | B | B | C |
| .01 | B | B | B | B | B | D |
| .012 | B | B | B | B | B | D |
| .015 | B | B | B | B | C | E |
| .018 | B | B | B | C | C | E |
| .022 | B | B | B | C | C | F |
| .027 | B | B | B | C | C | G |
| .033 | B | B | C | C | D | G |
| .039 | B | B | C | C | D | H |
| .047 | B | B | C | C | D | H |
| .056 | B | C | C | D | E | J/L |
| .068 | B | C | D | D | E | J/L |
| .082 | B | C | D | D | F | K/M |
| .1 | C | C | D | D | G | K/M |
| .12 | C | D | D | D | H | N |
| .15 | C | D | E | D | H | O |
| .18 | C | E | E | G | J/L | O |
| .22 | D | E | E | G | K/M | P |
| .27 | D | F | F | H | K/M | P |
| .33 | D | F | F | H | N | |
| .39 | D | G | G | K/M | N | |
| .47 | E | G | G | K/M | O | |
| .56 | F | H | H | O | P | |
| .68 | F | H | H | O | P | |
| .82 | G | H | J/L | O | | |
| 1.0 | G | K/M | J/L | O | | |
| 1.25 | H | K/M | K/M | P | | |
| 1.50 | J/L | K/M | N | P | | |
| 2.00 | J/L | N | P | Q | | |
| 3.00 | K/M | P | Q | | | |
| 4.00 | N | P | | | | |
| 5.00 | N | P | | | | |
| 6.00 | P | Q | | | | |
| 8.00 | | | | | | |

| CASE SIZE | L mm / in. | T mm / in. | H mm / in. | S mm / in. |
|---|---|---|---|---|
| B | 10.5 / .413 | 4 / .157 | 9 / .354 | 7.5 / .295 |
| C | 13 / .512 | 4 / .157 | 9 / .354 | 10 / .394 |
| D | 13 / .512 | 5 / .197 | 11 / .433 | 10 / .394 |
| E | 13 / .512 | 6 / .236 | 12 / .472 | 10 / .394 |
| F | 18 / .709 | 5 / .197 | 11 / .433 | 15 / .591 |
| G | 18 / .709 | 6 / .236 | 12 / .472 | 15 / .591 |
| H | 18 / .709 | 7.5 / .295 | 13.5 / .531 | 15 / .591 |
| J | 26.5 / 1.04 | 6 / .236 | 15 / .591 | 20 / .787 |
| K | 26.5 / 1.04 | 7 / .276 | 16 / .630 | 20 / .787 |
| L | 26.5 / 1.04 | 6 / .236 | 15 / .591 | 22.5 / .886 |
| M | 26.5 / 1.04 | 7 / .276 | 16 / .630 | 22.5 / .886 |
| N | 26.5 / 1.04 | 8.5 / .335 | 16.3 / .642 | 22.5 / .886 |
| O | 26.5 / 1.04 | 10 / .394 | 19 / .748 | 22.5 / .886 |
| P | 32 / 1.26 | 11 / .433 | 20 / .787 | 27.5 / 1.08 |
| Q | 32 / 1.26 | 13 / .512 | 22 / .866 | 27.5 / 1.08 |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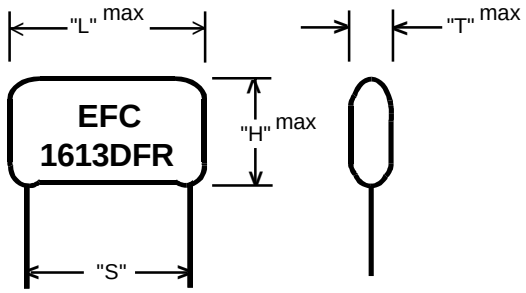
# Metallized Polycarbonate Capacitors




(All dimensions in millimeters)

# 1613DFR

## 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 |

## DIMENSIONS and RATINGS

| Cap. | 1613DFR-3 63 VDC | | | 1613DFR-3 100 VDC | | | 1613DFR-3 250 VDC | | | 1613DFR-3 400 VDC | | | 1613DFR-3 630 VDC | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| µF | T | H | L | 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 | 4.5 | 8.5 | 10.0 | | |
| .0012 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.5 | 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 | 8.0 | 10.0 | 4.5 | 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 | 8.0 | 10.0 | 4.5 | 8.5 | 10.0 | | |
| .0027 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.5 | 8.5 | 10.0 | | |
| .0039 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.5 | 8.5 | 10.0 | | |
| .0047 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.5 | 8.5 | 12.5 | | |
| .0056 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.5 | 8.5 | 12.5 | | |
| .0068 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.5 | 8.5 | 10.0 | 4.5 | 9.0 | 12.5 | | |
| .0082 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.5 | 8.5 | 10.0 | 4.5 | 9.0 | 12.5 | | |
| .01 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.5 | 9.0 | 10.0 | 5.0 | 9.5 | 12.5 | | |
| .012 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.5 | 9.0 | 10.0 | 5.5 | 10.5 | 12.5 | | |
| .015 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.5 | 8.5 | 10.0 | 4.5 | 9.0 | 12.5 | 6.0 | 11.0 | 12.5 | | |
| .018 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.5 | 8.5 | 10.0 | 4.5 | 9.0 | 12.5 | 6.0 | 11.0 | 18.0 | | |
| .022 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.5 | 8.5 | 10.0 | 4.5 | 9.0 | 12.5 | 6.0 | 12.0 | 18.0 | | |
| .027 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.5 | 8.5 | 10.0 | 5.0 | 9.5 | 12.5 | 6.5 | 12.5 | 18.0 | | |
| .033 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.5 | 9.0 | 10.0 | 5.5 | 10.5 | 12.5 | 7.0 | 13.0 | 18.0 | | |
| .039 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 4.5 | 9.0 | 12.5 | 6.0 | 11.0 | 12.5 | 7.5 | 13.5 | 18.0 | | |
| .047 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 5.0 | 9.5 | 12.5 | 6.5 | 12.0 | 12.5 | 8.0 | 14.5 | 18.0 | | |
| .056 | 4.0 | 8.0 | 10.0 | 4.0 | 8.0 | 10.0 | 5.0 | 10.0 | 12.5 | 5.0 | 10.0 | 18.0 | 8.0 | 15.0 | 18.0 | | |
| .068 | 4.0 | 8.0 | 10.0 | 4.5 | 8.5 | 10.0 | 5.5 | 10.5 | 12.5 | 5.5 | 10.5 | 18.0 | 8.5 | 15.5 | 18.0 | | |
| .082 | 4.0 | 8.0 | 10.0 | 4.5 | 9.0 | 10.0 | 6.0 | 11.0 | 12.5 | 6.0 | 11.0 | 18.0 | 8.5 | 15.5 | 26.0 | | |
| .1 | 4.0 | 8.0 | 10.0 | 4.5 | 9.0 | 12.5 | 5.5 | 10.5 | 18.0 | 6.0 | 12.0 | 18.0 | 8.5 | 16.0 | 26.0 | | |
| .12 | 4.0 | 8.0 | 10.0 | 4.5 | 9.5 | 12.5 | 6.0 | 12.0 | 18.0 | 6.5 | 12.5 | 18.0 | 9.0 | 16.5 | 26.0 | | |
| .15 | 4.0 | 8.0 | 10.0 | 5.0 | 10.0 | 12.5 | 6.5 | 12.5 | 18.0 | 7.5 | 13.5 | 18.0 | 9.5 | 17.0 | 26.0 | | |
| .18 | 4.0 | 8.0 | 10.0 | 5.5 | 10.5 | 12.5 | 7.0 | 13.0 | 18.0 | 8.5 | 15.5 | 18.0 | 9.0 | 16.5 | 31.0 | | |
| .22 | 4.0 | 8.5 | 12.5 | 6.0 | 11.0 | 12.5 | 7.5 | 13.5 | 18.0 | 7.5 | 13.5 | 26.0 | 9.5 | 18.0 | 31.0 | | |
| .27 | 4.5 | 8.5 | 12.5 | 5.5 | 10.5 | 18.0 | 8.0 | 14.0 | 18.0 | 8.5 | 15.5 | 26.0 | 10.0 | 19.0 | 31.0 | | |
| .33 | 4.5 | 9.0 | 12.5 | 5.5 | 11.0 | 18.0 | 8.5 | 15.5 | 18.0 | 9.0 | 16.0 | 26.0 | 11.5 | 20.5 | 31.0 | | |
| .39 | 5.0 | 9.5 | 12.5 | 6.0 | 12.0 | 18.0 | 7.5 | 13.5 | 26.0 | 9.5 | 17.0 | 26.0 | 12.0 | 21.0 | 31.0 | | |
| .47 | 5.5 | 10.0 | 12.5 | 7.0 | 13.0 | 18.0 | 8.0 | 15.0 | 26.0 | 10.0 | 19.0 | 26.0 | 13.0 | 23.0 | 31.0 | | |
| .56 | 5.5 | 10.5 | 12.5 | 7.5 | 14.0 | 18.0 | 8.5 | 16.0 | 26.0 | 9.5 | 17.0 | 31.0 | 13.5 | 25.0 | 31.0 | | |
| .68 | 6.0 | 11.0 | 12.5 | 8.0 | 15.0 | 18.0 | 9.5 | 17.0 | 26.0 | 10.5 | 20.0 | 31.0 | 15.0 | 27.0 | 31.0 | | |

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