

# Type MPF, AC Motor Run Capacitors

## Oval and Round, Oil Filled, 70 °C, Metallized Polypropylene Capacitors



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Type MPF AC metallized polypropylene film dielectric capacitors offer a reliable option for alternating current applications. All devices are oil filled in metal cases with 4-prong quick disconnect terminals for easy assembly. These capacitors pack high capacitance and voltage capabilities into a small, light-weight package. The MPF is internally protected for fail-safe operation. These capacitors have extremely low DF that is ideal for AC motor-run applications.

### Highlights

- Low DF
- Protected with a pressure sensitive interrupter
- Small size and light weight
- UL E71645
- CSA 219950
- Air conditioning and refrigeration applications
- Power factor correction
- Motors

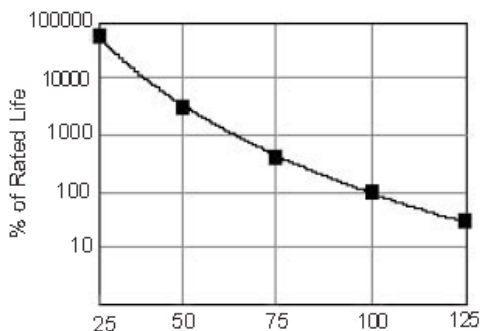
### Specifications

|   |                              |
|---|------------------------------|
| Capacitance Range                       | 1 $\mu$ F to 80 $\mu$ F      |
| Capacitance Tolerance                   | $\pm$ 10%                    |
| Rated Voltage                           | 330 Vac, 370 Vac and 440 Vac |
| Operating Temperature Range with Ripple | -40 °C to +70 °C             |
| Rated Frequency                         | 50 Hz and 60 Hz              |
| Dissipation Factor                      | 0.1% max @ 60 Hz             |
| RoHS Compliant                          |                              |

### Service Life Objective

The service life objective for this series is 60,000 hours of operating life with a 94% survival rate when operated at full voltage, 60 Hz, and rated ambient temperature. AC capacitors are frequently used at voltages and ambient temperatures other than rated conditions. Service life may be estimated under specific conditions of temperature and voltage by using the curves as shown below and to the right.

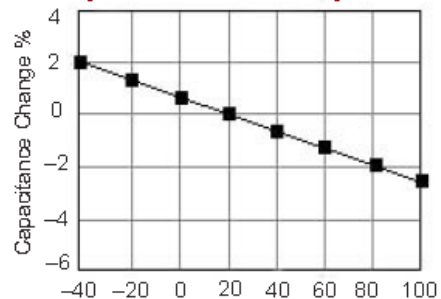
### Life vs. Temperature



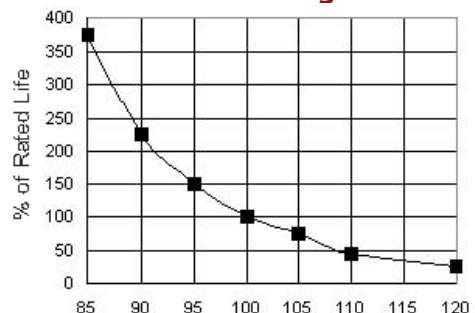
### Capacitance vs. Temperature

The Capacitance vs. Temperature curve may be used to determine the capacitance change as a function of temperature. Capacitance varies by no more than  $\pm$ 3% over the operating temperature range.

### Capacitance vs. Temperature



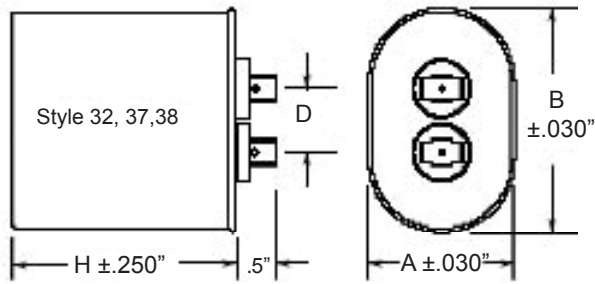
### Life vs. Voltage



# Type MPF, AC Motor Run Capacitors

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### Oval Case Style



See Ratings Table for "H" dimension

| Oval  |          |          |        |                |
|-------|----------|----------|--------|----------------|
| Style | A        | B        | D      | Industry Type  |
| 32    | 1 5/16"  | 2 5/32"  | 13/16" | 1¼" Flat Oval  |
| 37    | 1 29/32" | 2 29/32" | 13/16" | 1¼" Flat Oval  |
| 38    | 1 31/32" | 3 21/32" | 13/16" | 2.0" Flat Oval |

### Construction Details

|                   |                                       |
|-------------------|---------------------------------------|
| Case Material     | Aluminum                              |
| Encapsulation     | Environmentally Safe Dielectric Fluid |
| Terminal Material | Tin Plated Steel                      |

### Oval Ratings

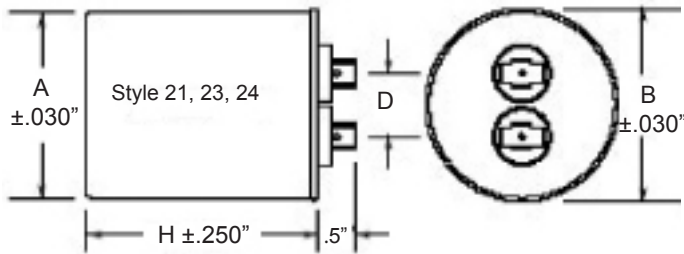
| Cap. (µF)   | Case Code | Aluminum Catalog Part Number | H (inches) |
|-------------|-----------|------------------------------|------------|
| <b>370V</b> |           |                              |            |
| 1.0         | 32        | 32FD3701A-F                  | 2.19       |
| 2.0         | 32        | 32FD3702A-F                  | 2.19       |
| 3.0         | 32        | 32FD3703A-F                  | 2.19       |
| 4.0         | 32        | 32FD3704A-F                  | 2.19       |
| 5.0         | 32        | 32FD3705A-F                  | 2.19       |
| 6.0         | 32        | 32FD3706A-F                  | 2.19       |
| 7.5         | 32        | 32FD37075A-F                 | 2.19       |
| 10.0        | 32        | 32FD3710A-F                  | 2.88       |
| 12.5        | 32        | 32FD37125A-F                 | 2.88       |
| 12.5        | 37        | 37FD37125A-F                 | 2.38       |
| 15.0        | 37        | 37FD3715A-F                  | 2.38       |
| 17.5        | 37        | 37FD37175A-F                 | 2.38       |
| 20.0        | 37        | 37FD3720A-F                  | 2.38       |
| 22.5        | 37        | 37FD37225A-F                 | 2.38       |
| 25.0        | 37        | 37FD3725A-F                  | 2.91       |
| 27.5        | 38        | 38FD37275A-F                 | 2.91       |
| 30.0        | 37        | 37FD3730A-F                  | 2.91       |
| 30.0        | 38        | 38FD3730A-F                  | 2.91       |
| 35.0        | 37        | 37FD3735A-F                  | 3.91       |
| 35.0        | 38        | 38FD3735A-F                  | 2.91       |
| 40.0        | 37        | 37FD3740A-F                  | 3.91       |
| 40.0        | 38        | 38FD3740A-F                  | 2.91       |
| 45.0        | 37        | 37FD3745A-F                  | 3.91       |
| 45.0        | 38        | 38FD3745A-F                  | 2.91       |
| 50.0        | 38        | 38FD3750A-F                  | 2.91       |
| 70.0        | 38        | 38FD3770A-F                  | 3.91       |

| Cap. (µF)   | Case Code | Aluminum Catalog Part Number | H (inches) |
|-------------|-----------|------------------------------|------------|
| <b>440V</b> |           |                              |            |
| 1.0         | 32        | 32FB4401A-F                  | 2.19       |
| 2.0         | 32        | 32FB4402A-F                  | 2.19       |
| 3.0         | 32        | 32FB4403A-F                  | 2.19       |
| 4.0         | 32        | 32FB4404A-F                  | 2.19       |
| 5.0         | 32        | 32FB4405A-F                  | 2.19       |
| 6.0         | 32        | 32FB4406A-F                  | 2.19       |
| 7.5         | 32        | 32FB44075A-F                 | 2.88       |
| 7.5         | 37        | 37FB44075A-F                 | 2.38       |
| 10.0        | 32        | 32FB4410A-F                  | 2.88       |
| 10.0        | 37        | 37FB4410A-F                  | 2.38       |
| 12.5        | 37        | 37FB44125A-F                 | 2.38       |
| 15.0        | 37        | 37FB4415A-F                  | 2.38       |
| 17.5        | 37        | 37FB44175A-F                 | 2.91       |
| 20.0        | 37        | 37FB4420A-F                  | 2.91       |
| 20.0        | 38        | 38FB4420A-F                  | 2.91       |
| 25.0        | 37        | 37FB4425A-F                  | 3.91       |
| 25.0        | 38        | 38FB4425A-F                  | 3.91       |
| 30.0        | 38        | 38FB4430A-F                  | 3.91       |
| 35.0        | 37        | 37FB4435A-F                  | 4.75       |
| 35.0        | 38        | 38FB4435A-F                  | 3.91       |
| 40.0        | 37        | 37FB4440A-F                  | 4.75       |
| 40.0        | 38        | 38FB4440A-F                  | 3.91       |
| 45.0        | 38        | 38FB4445A-F                  | 3.91       |
| 50.0        | 38        | 38FB4450A-F                  | 3.91       |
| 55.0        | 38        | 38FB4455A-F                  | 4.75       |
| 60.0        | 38        | 38FB4460A-F                  | 4.75       |

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### Round Case Style



See Ratings Table for "H" dimension

| Round |      |     |        |               |
|-------|------|-----|--------|---------------|
| Style | A    | B   | D      | Industry Type |
| 21    | 1¾"  | 1⅞" | 13/16" | 1¾" Round     |
| 23    | 2.0" | 2⅛" | 13/16" | 2.0" Round    |
| 24    | 2½"  | 2⅝" | 13/16" | 2½" Round     |

### Construction Details

|                   |                                       |
|-------------------|---------------------------------------|
| Case Material     | Aluminum                              |
| Encapsulation     | Environmentally Safe Dielectric Fluid |
| Terminal Material | Tin Plated Steel                      |

### Round Ratings

| Cap. (µF)    | Case Code | Aluminum Catalog Part Number | H (inches) |
|--------------|-----------|------------------------------|------------|
| <b>330 V</b> |           |                              |            |
| 3.0          | 23        | 23FD3303A-F                  | 2.38       |
| 4.0          | 23        | 23FD3304A-F                  | 2.38       |
| 5.0          | 23        | 23FD3305A-F                  | 2.38       |
| 6.0          | 23        | 23FD3306A-F                  | 2.38       |
| 7.0          | 23        | 23FD3307A-F                  | 2.38       |
| 8.0          | 23        | 23FD3308A-F                  | 2.38       |
| 10.0         | 23        | 23FD3310A-F                  | 2.38       |
| <b>370V</b>  |           |                              |            |
| 3.0          | 21        | 21FD3703A-F                  | 2.38       |
| 4.0          | 21        | 21FD3704A-F                  | 2.38       |
| 5.0          | 21        | 21FD3705A-F                  | 2.38       |
| 6.0          | 21        | 21FD3706A-F                  | 2.38       |
| 7.0          | 21        | 21FD3707A-F                  | 2.38       |
| 8.0          | 21        | 21FD3708A-F                  | 2.38       |
| 10.0         | 21        | 21FD3710A-F                  | 2.38       |
| 12.5         | 21        | 21FD37125A-F                 | 2.38       |
| 15.0         | 21        | 21FD3715A-F                  | 2.38       |
| 17.5         | 21        | 21FD37175A-F                 | 2.38       |
| 20.0         | 21        | 21FD3720A-F                  | 2.38       |
| 25.0         | 21        | 21FD3725A-F                  | 2.84       |
| 25.0         | 23        | 23FD3725A-F                  | 2.91       |
| 30.0         | 21        | 21FD3730A-F                  | 2.84       |
| 30.0         | 23        | 23FD3730A-F                  | 2.91       |
| 35.0         | 21        | 21FD3735A-F                  | 3.84       |
| 35.0         | 23        | 23FD3735A-F                  | 2.91       |
| 40.0         | 21        | 21FD3740A-F                  | 3.84       |
| 40.0         | 23        | 23FD3740A-F                  | 2.91       |
| 45.0         | 23        | 23FD3745A-F                  | 3.84       |
| 45.0         | 24        | 24FD3745A-F                  | 2.91       |

| Cap. (µF)   | Case Code | Aluminum Catalog Part Number | H (inches) |
|-------------|-----------|------------------------------|------------|
| <b>370V</b> |           |                              |            |
| 50.0        | 23        | 23FD3750A-F                  | 3.84       |
| 50.0        | 24        | 24FD3750A-F                  | 2.91       |
| 55.0        | 23        | 23FD3755A-F                  | 3.84       |
| 55.0        | 24        | 24FD3755A-F                  | 2.91       |
| 60.0        | 23        | 23FD3760A-F                  | 3.84       |
| 60.0        | 24        | 24FD3760A-F                  | 2.91       |
| 65.0        | 24        | 24FD3765A-F                  | 3.91       |
| 70.0        | 24        | 24FD3770A-F                  | 3.91       |
| 80.0        | 24        | 24FD3780A-F                  | 4.75       |
| <b>440V</b> |           |                              |            |
| 15.0        | 21        | 21FB4415A-F                  | 2.38       |
| 20.0        | 21        | 21FB4420A-F                  | 2.84       |
| 20.0        | 23        | 23FB4420A-F                  | 2.91       |
| 22.5        | 21        | 21FB44225A-F                 | 2.84       |
| 22.5        | 23        | 23FB44225A-F                 | 2.91       |
| 25.0        | 21        | 21FB4425A-F                  | 3.84       |
| 25.0        | 23        | 23FB4425A-F                  | 2.91       |
| 30.0        | 23        | 23FB4430A-F                  | 3.84       |
| 30.0        | 24        | 24FB4430A-F                  | 2.91       |
| 35.0        | 23        | 23FB4435A-F                  | 3.84       |
| 35.0        | 24        | 24FB4435A-F                  | 2.91       |
| 40.0        | 23        | 23FB4440A-F                  | 3.84       |
| 40.0        | 24        | 24FB4440A-F                  | 3.91       |
| 45.0        | 24        | 24FB4445A-F                  | 3.91       |
| 50.0        | 24        | 24FB4450A-F                  | 3.91       |
| 55.0        | 24        | 24FB4455A-F                  | 3.91       |
| 60.0        | 24        | 24FB4460A-F                  | 4.75       |
| 70.0        | 24        | 24FB4470A-F                  | 4.75       |

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