

Nytronics Components Group, Inc.

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TYPE 107 POLYESTER FILM CAPACITORS

POLYESTER FILM CAPACITORS EXTENDED FOIL/FILM WRAP/EPOXY END FILL STYLE 107 —55°C TO +125°C



ELECTRICAL AND ENVIRONMENTAL CHARACTERISTICS

CAPACITANCE MEASUREMENTS

Capacitors of 1.0 μ F or less shall be measured at a frequency of 1000 Hz. Capacitors greater than 1.0 μ F shall be measured at 60 Hz. The standard capacitance tolerance is 20%. Other tolerances are available upon request.

Reference: MIL-STD-202, Method 305.

TEMPERATURE CHARACTERISTICS

The maximum change in capacitance from the measured value at +25°C shall be -6% at -55°C, and +15% at +125°C.

DISSIPATION FACTOR

When measured as specified in Paragraph 1, the dissipation factor at +25°C shall not exceed 0.6% for values up to 1.0 μ F and shall not exceed 1.0% for greater capacitance values.

INSULATION RESISTANCE

When measured at +25°C, and rated voltage (or 500 VDC, whichever is less), the insulation resistance shall be a minimum of 50,000 megohm-microfarads, but need not exceed 100,000 megohms. The period of electrification shall not exceed two minutes.

Reference: MIL-STD-202, Method 302.

VOLTAGE DERATING

The capacitors may be operated at full rated voltage from -55°C to +85°C, or with linear derating to 50% of rated voltage above +85°C with a maximum temperature of +125°C.

VOLTAGE TEST

When tested at +25°C, the capacitors shall withstand the indicated DC test voltages for a period of one minute:

| | |
|---|---|
| Terminal to terminal | 200% of DC rating |
| Terminal to case (less than .235 diameter) | 200% of DC rating |
| Terminal to case (greater than .235 diameter) | 400% of DC rating or 2,000 VDC, whichever is less |

Reference: MIL-STD-202, Method 301.

LIFE TESTING

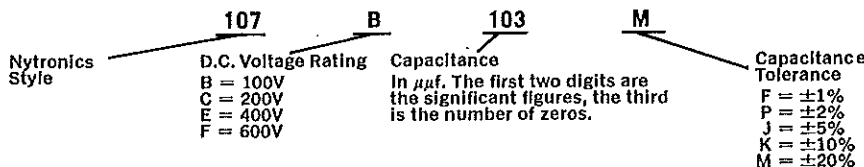
When tested for 1000 hours at 150% of the appropriate rated voltage for the test temperature, the capacitors shall exhibit no more than one failure in twelve pieces tested. Alternatively, an accelerated +125°C test may be performed at the +85°C voltage rating for a period of 250 hours. A failure is defined as:

- A capacitance change of more than 10% of its initial value;
- A dissipation factor greater than that specified in Paragraph 3;
- An insulation resistance less than 1/3 that specified in Paragraph 4; or
- A permanent open or short.

VIBRATION

The capacitors will meet or exceed in the vibration requirements of MIL-STD-202, Method 201.

NYTRONICS CATALOG NUMBERING SYSTEM



Note: Special capacitance values, voltage ratings and sizes available to customer requirements.

PHYSICAL SIZE TOLERANCES

| DIAMETER | 100 Volts DC & 200 Volts DC | | 400 Volts DC | |
|--------------|-----------------------------|------------------|------------------|-------|
| | Up to .158 | + .032 - .000 | Up to .218 | ±.032 |
| .159 to .200 | + .040 - .000 | .219 to .500 | ±.046 | |
| Over .200 | + .050 - .000 | Over .500 | ±.062 | |
| LENGTH | + 1/16 - 0 | | + 3/32 - 1/16 | |

TINNED COPPERWELD LEADS

No. 22 AWG. (.025) for cases up to .325 Dia.
No. 20 AWG. (.032) for cases .326 thru 1.0 Dia.
No. 18 AWG. (.040) for cases above 1.0 Dia.

Lead Length: 1 5/8" Min.

Also available are the following styles with characteristics similar to Type 107.

STANDARD RATINGS

| Capacitance μ F | Dia. x Length | Cat. No. | |
|-----------------------------|---------------|----------|----------|
| 100 VOLTS DC WORKING | | | |
| .001 | .138 | 3/8 | 107B102M |
| .0015 | .138 | 3/8 | 107B152M |
| .0022 | .138 | 3/8 | 107B222M |
| .0033 | .138 | 3/8 | 107B332M |
| .0047 | .138 | 3/8 | 107B472M |
| .0068 | .138 | 3/8 | 107B682M |
| .0082 | .138 | 3/8 | 107B822M |
| .01 | .158 | 3/8 | 107B103M |
| .015 | .158 | 3/8 | 107B153M |
| .022 | .158 | 3/8 | 107B223M |
| .027 | .158 | 3/8 | 107B273M |
| .033 | .158 | 3/8 | 107B333M |
| .047 | .190 | 3/8 | 107B473M |
| .068 | .220 | 3/8 | 107B683M |
| .082 | .265 | 3/8 | 107B823M |
| .1 | .265 | 1/2 | 107B104M |
| .12 | .300 | 3/4 | 107B124M |
| .15 | .330 | 3/4 | 107B154M |
| .22 | .350 | 1 1/4 | 107B224M |
| .27 | .350 | 1 1/4 | 107B274M |
| .33 | .385 | 1 1/4 | 107B334M |
| .39 | .415 | 1 1/4 | 107B394M |
| .47 | .450 | 1 1/4 | 107B474M |
| .56 | .490 | 1 1/4 | 107B564M |
| .68 | .540 | 1 1/4 | 107B684M |
| .82 | .570 | 1 1/4 | 107B824M |
| 1. | .590 | 1 3/4 | 107B105M |
| 1.5 | .670 | 1 3/4 | 107B155M |
| 1.8 | .730 | 1 3/4 | 107B185M |
| 2.0 | .700 | 1 1/2 | 107B205M |

200 VOLTS DC WORKING

| | | | |
|-------|------|-------|----------|
| .001 | .138 | 3/8 | 107C102M |
| .0015 | .138 | 3/8 | 107C152M |
| .0022 | .138 | 3/8 | 107C222M |
| .0033 | .138 | 3/8 | 107C332M |
| .0047 | .138 | 3/8 | 107C472M |
| .0068 | .138 | 3/8 | 107C682M |
| .0082 | .138 | 3/8 | 107C822M |
| .01 | .158 | 3/8 | 107C103M |
| .015 | .158 | 3/8 | 107C153M |
| .022 | .158 | 3/8 | 107C223M |
| .027 | .158 | 3/8 | 107C273M |
| .033 | .158 | 3/8 | 107C333M |
| .047 | .190 | 3/8 | 107C473M |
| .068 | .220 | 3/8 | 107C683M |
| .082 | .265 | 3/8 | 107C823M |
| .1 | .265 | 1/2 | 107C104M |
| .12 | .285 | 3/4 | 107C124M |
| .15 | .315 | 3/4 | 107C154M |
| .22 | .325 | 1 1/4 | 107C224M |
| .27 | .350 | 1 1/4 | 107C274M |
| .33 | .390 | 1 1/4 | 107C334M |
| .39 | .415 | 1 1/4 | 107C394M |
| .47 | .450 | 1 1/4 | 107C474M |
| .56 | .490 | 1 1/4 | 107C564M |
| .68 | .540 | 1 1/4 | 107C684M |
| .82 | .580 | 1 1/4 | 107C824M |
| 1. | .590 | 1 3/4 | 107C105M |
| 1.5 | .680 | 1 3/4 | 107C155M |
| 1.8 | .740 | 1 3/4 | 107C185M |
| 2.0 | .750 | 1 1/2 | 107C205M |

400 VOLTS DC WORKING

| | | | |
|-------|-------|-------|----------|
| .001 | .156 | 5/8 | 107E102M |
| .0015 | .156 | 5/8 | 107E152M |
| .0022 | .156 | 5/8 | 107E222M |
| .0033 | .156 | 5/8 | 107E332M |
| .0047 | .187 | 5/8 | 107E472M |
| .0068 | .218 | 5/8 | 107E682M |
| .0082 | .234 | 5/8 | 107E822M |
| .01 | .250 | 5/8 | 107E103M |
| .015 | .286 | 5/8 | 107E153M |
| .022 | .312 | 3/4 | 107E223M |
| .027 | .281 | 7/8 | 107E273M |
| .033 | .312 | 7/8 | 107E333M |
| .047 | .343 | 7/8 | 107E473M |
| .068 | .375 | 1 | 107E683M |
| .082 | .406 | 1 | 107E823M |
| .1 | .421 | 1 | 107E104M |
| .12 | .468 | 1 | 107E124M |
| .15 | .468 | 1 1/4 | 107E154M |
| .22 | .546 | 1 3/8 | 107E224M |
| .27 | .609 | 1 3/8 | 107E274M |
| .33 | .593 | 1 3/8 | 107E334M |
| .39 | .625 | 1 3/8 | 107E394M |
| .47 | .671 | 1 3/8 | 107E474M |
| .56 | .718 | 1 3/4 | 107E564M |
| .68 | .796 | 1 3/4 | 107E684M |
| .82 | .812 | 1 7/8 | 107E824M |
| 1. | .812 | 2 | 107E105M |
| 1.5 | .921 | 2 1/4 | 107E155M |
| 1.8 | 1.015 | 2 1/4 | 107E185M |
| 2.0 | 1.093 | 2 1/4 | 107E205M |

Special capacitance values, tolerances and sizes are available on request.