

**Unlytic® UL31 / UL32 / UL34 / UL35 Series**

The UL31 / UL32 / UL34 / UL35 UNLYTIC® UL3 SERIES represents the “best” choice for high power DC applications because of the combination of physical and electrical properties it offers.



**FEATURES**

- Inductance as low as 25nH (less than 12nH available)
- Low ESR
- Current carrying capability to 110 amps
- Withstands hostile environments
- Integrated mounting flanges
- RoHS compliant

**STANDARD CONFIGURATION**

- UL31/UL35 Male Terminal
- UL32/UL34 Female Terminal
- UL31/UL32 Standard ESL
- UL34/UL35 Special Low ESL

# Specification Summary

## Capacitance Range

6.5 $\mu$ F to 300.0 $\mu$ F

## Capacitance Tolerance

Standard capacitance tolerance is  $\pm 10\%$ .  
Tolerances of  $\pm 5\%$  and  $\pm 20\%$  are also available.

## Operating Temperature Range

-55°C to +105°C

## Enclosure/Construction

Unlytic polypropylene potted in a thermoplastic housing. Terminals are tin plated brass.

## Voltage Rating

500 VDC to 2200 VDC

## Quality Control

Capacitors are tested 100% for:

- Capacitance
- Tolerance
- Dissipation Factor
- Dielectric withstanding voltage
- Insulation Resistance
- Equivalent Series Resistance (ESR)

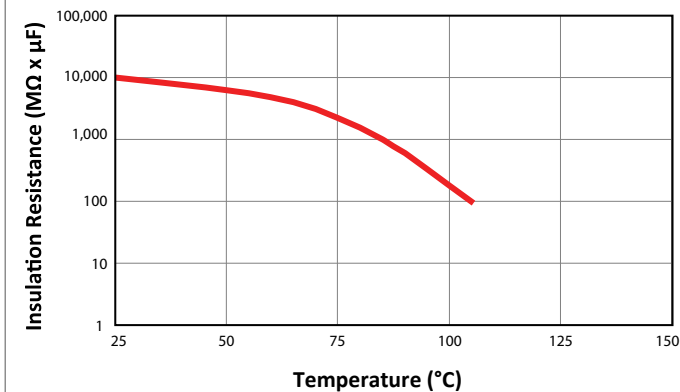
Process and inspection data are maintained on file and available upon special request.

## Environmental

| Parameter             | Method | Condition |
|-----------------------|--------|-----------|
| Vibration             | 204    | D         |
| Shock                 | 213    | I         |
| Humidity              | 106    | -         |
| Thermal Shock         | 107    | A         |
| Life                  | 108    | F         |
| Reference MIL-STD-202 |        |           |

# Characteristics

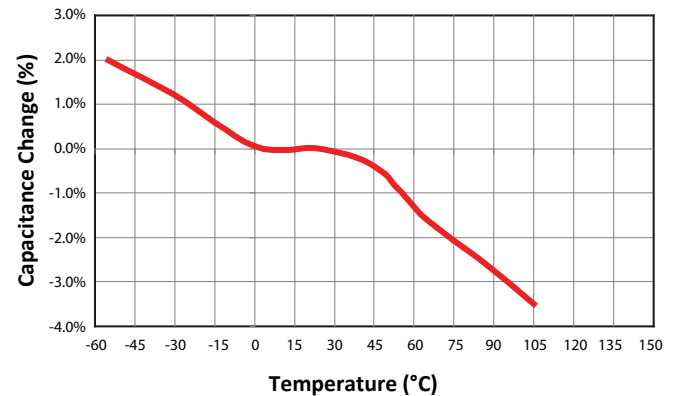
Insulation Resistance vs. Temperature



## Dielectric Strength

Capacitors withstand a DC potential of 1.3 x rated voltage for one (1) minute without damage or break-down. Test voltage is applied and discharged through a minimum resistance of 100 OHM per volt minimum.

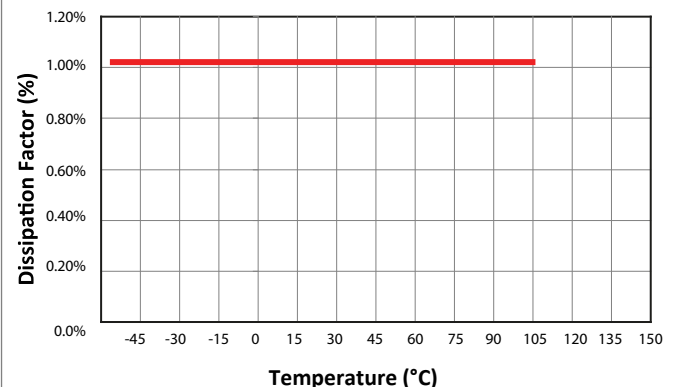
Capacitance Change at 1kHz vs. Temperature



## Dissipation Factor

Polypropylene has an intrinsic dissipation factor of less than  $2.1 \times 10^{-4}$  over the operating temperature range of -55°C to +105°C and frequencies to 1MHz.

Dissipation Factor at 1kHz vs. Temperature



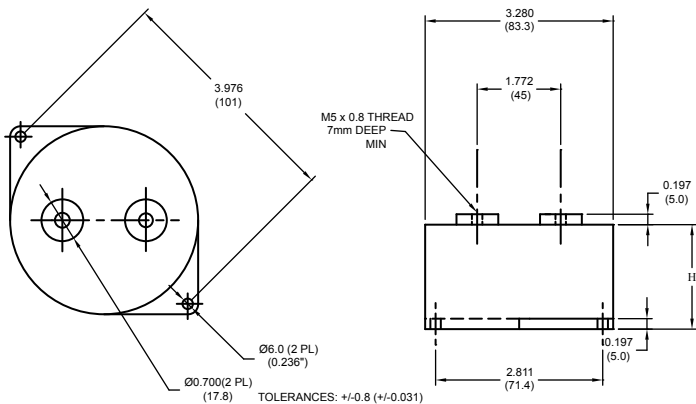
# Detail Data

## UL31, 32, 34 AND UL35 ELECTRICAL SPECIFICATIONS

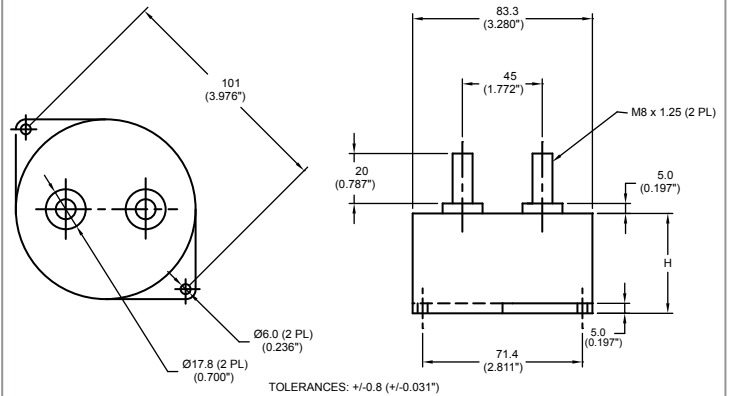
| PART NUMBER | VOLTAGE<br>VDC | VALUE<br>μF | CASE "H"<br>mm | ESL FOR       |             | ESL FOR       |             | I pk | dv/dt | E.S.R.<br>mOHMS | CURRENT RATING (AMPS RMS )<br>10 kHz TO 100 kHz CONTINUOUS |      |      |      |       |
|-------------|----------------|-------------|----------------|---------------|-------------|---------------|-------------|------|-------|-----------------|--|------|------|------|-------|
|             |                |             |                | UL31 AND UL32 |             | UL34 AND UL35 |             |      |       |                 | AMBIENT TEMPERATURE  |      |      |      |       |
|             |                |             |                | "L"<br>nH     | Fres<br>kHz | "L"<br>nH     | Fres<br>kHz |      |       |                 | 25°C   | 45°C | 65°C | 85°C | 105°C |
| UL3_Q157K   | 500            | 150         | 40             | 25            | 82.2        | 12            | 118.6       | 5769 | 38    | 0.47            | 110.3  | 95.7 | 78.5 | 56.3 | 13.4  |
| UL3_Q207K   | 500            | 200         | 51             | 32            | 62.9        | 15            | 91.9        | 5809 | 29    | 0.57            | 105.4  | 91.5 | 75.1 | 53.9 | 12.8  |
| UL3_Q277K   | 500            | 275         | 64             | 50            | 42.9        | 25            | 60.7        | 5672 | 21    | 0.77            | 97.21  | 84.4 | 69.3 | 49.7 | 11.8  |
| UL3_Q307K   | 500            | 300         | 79             | 55            | 39.2        | 27            | 55.9        | 5022 | 17    | 1.70            | 77.1   | 66.9 | 54.9 | 39.4 | 9.4   |
| UL3_K107K   | 600            | 100         | 40             | 25            | 100.7       | 12            | 145.3       | 4396 | 44    | 0.62            | 91.2   | 79.2 | 65.0 | 46.6 | 11.1  |
| UL3_K157K   | 600            | 150         | 51             | 32            | 72.6        | 15            | 106.1       | 4979 | 33    | 0.67            | 96.8   | 84.0 | 68.9 | 49.9 | 11.8  |
| UL3_K207K   | 600            | 200         | 64             | 50            | 50.3        | 25            | 71.2        | 4714 | 24    | 0.93            | 87.0   | 75.7 | 62.0 | 44.5 | 10.6  |
| UL3_K257K   | 600            | 250         | 79             | 55            | 42.9        | 27            | 61.3        | 4782 | 19    | 1.79            | 77.4   | 67.2 | 55.1 | 39.6 | 9.4   |
| UL3_N706K   | 800            | 70          | 40             | 25            | 120.3       | 12            | 173.7       | 3846 | 55    | 0.71            | 88.0   | 76.4 | 45.0 | 45.0 | 10.7  |
| UL3_N107K   | 800            | 100         | 51             | 32            | 89.0        | 15            | 129.9       | 4149 | 41    | 0.80            | 89.5   | 77.7 | 63.8 | 45.7 | 10.9  |
| UL3_N137K   | 800            | 130         | 64             | 50            | 62.4        | 25            | 88.3        | 3830 | 29    | 1.15            | 78.8   | 68.4 | 56.1 | 40.3 | 9.6   |
| UL3_N167K   | 800            | 160         | 79             | 55            | 53.7        | 27            | 76.6        | 3826 | 24    | 2.20            | 69.2   | 60.1 | 49.3 | 35.4 | 8.4   |
| UL3_BL356K  | 1000           | 35          | 40             | 25            | 170.1       | 12            | 245.6       | 2692 | 77    | 1.02            | 72.6   | 63.0 | 51.7 | 37.1 | 8.8   |
| UL3_BL506K  | 1000           | 50          | 51             | 32            | 125.8       | 15            | 183.8       | 2905 | 58    | 1.16            | 74.1   | 64.3 | 52.8 | 37.8 | 9.0   |
| UL3_BL706K  | 1000           | 70          | 64             | 50            | 85.1        | 25            | 120.3       | 2887 | 41    | 1.53            | 69.6   | 60.4 | 49.6 | 35.6 | 8.5   |
| UL3_BL806K  | 1000           | 80          | 79             | 55            | 75.9        | 27            | 108.3       | 2678 | 33    | 3.20            | 57.5   | 49.9 | 40.9 | 29.4 | 7.0   |
| UL3_L256K   | 1200           | 25          | 40             | 25            | 201.3       | 12            | 290.6       | 2198 | 88    | 1.26            | 63.7   | 55.3 | 45.4 | 32.5 | 7.8   |
| UL3_L356K   | 1200           | 30          | 51             | 32            | 150.4       | 15            | 219.7       | 2324 | 66    | 1.45            | 64.0   | 55.5 | 45.6 | 32.7 | 7.8   |
| UL3_L506K   | 1200           | 50          | 64             | 50            | 100.7       | 25            | 142.4       | 2357 | 47    | 1.87            | 61.3   | 53.2 | 43.7 | 31.3 | 7.5   |
| UL3_L606K   | 1200           | 60          | 79             | 55            | 87.6        | 27            | 125.0       | 2296 | 38    | 3.74            | 52.8   | 45.9 | 37.6 | 27.0 | 6.4   |
| UL3_M186K   | 1500           | 18          | 40             | 25            | 237.3       | 12            | 342.4       | 1978 | 110   | 1.42            | 62.8   | 54.5 | 44.7 | 32.1 | 7.6   |
| UL3_M256K   | 1500           | .25         | 51             | 32            | 177.9       | 15            | 259.9       | 2075 | 83    | 1.64            | 62.7   | 54.4 | 44.7 | 32.0 | 7.6   |
| UL3_M356K   | 1500           | 35          | 64             | 50            | 120.3       | 25            | 170.1       | 2062 | 59    | 2.15            | 59.1   | 51.3 | 42.1 | 30.2 | 7.2   |
| UL3_M406K   | 1500           | 40          | 79             | 55            | 107.3       | 27            | 153.1       | 1913 | 48    | 4.49            | 48.9   | 42.4 | 34.8 | 25.0 | 5.9   |
| UL3_BX106K  | 1800           | 10          | 40             | 25            | 318.3       | 12            | 459.4       | 1596 | 160   | 1.67            | 57.3   | 49.7 | 40.8 | 29.3 | 7.0   |
| UL3_BX156K  | 1800           | 15          | 51             | 32            | 229.7       | 15            | 335.5       | 1719 | 115   | 1.91            | 58.0   | 50.3 | 41.3 | 29.6 | 7.1   |
| UL3_BX206K  | 1800           | 20          | 64             | 50            | 159.2       | 25            | 225.1       | 1559 | 78    | 2.79            | 50.1   | 43.5 | 35.7 | 25.6 | 6.1   |
| UL3_BX276K  | 1800           | 27          | 79             | 55            | 130.6       | 27            | 186.4       | 1549 | 57    | 5.56            | 43.5   | 37.8 | 31.0 | 22.2 | 5.3   |
| UL3_S655K   | 2200           | 6.5         | 40             | 25            | 394.8       | 12            | 569.9       | 1297 | 199   | 2.06            | 51.9   | 45.1 | 37.0 | 26.5 | 6.3   |
| UL3_S905K   | 2200           | 9.0         | 51             | 32            | 296.6       | 15            | 433.2       | 1289 | 143   | 2.56            | 49.0   | 42.5 | 34.9 | 25.0 | 6.0   |
| UL3_S126K   | 2200           | 12          | 64             | 50            | 205.5       | 25            | 290.6       | 1170 | 97    | 3.72            | 42.5   | 36.9 | 30.2 | 21.7 | 5.2   |
| UL3_S176K   | 2200           | 17          | 79             | 55            | 164.6       | 27            | 234.9       | 1220 | 727   | 7.08            | 38.4   | 33.3 | 27.3 | 19.6 | 4.7   |

# Style

## UL32 AND UL34 SERIES



## UL31 AND UL35 SERIES



## Additional Information

The UNLYTIC® UL3 SERIES, with its introduction, the designer has a film capacitor for high power filter systems that will maximize space utilization, performance and reliability. With the added potential for measurable production cost savings.

The combination of physical and electrical properties it offers encompasses low inductance with high current carrying capability – and a low profile to make the most efficient use of system space and increased cooling efficiency. Plus an in-house developed, “specific to the task” thermoplastic formulation for the enclosure, improves thermal conductivity. There is also an integrated flange with pre-drilled holes to simplify mounting.

## How to Order

|  |   |     |
|--|---|-----|
| TYPE<br>UNLYTIC® Metallized Polypropylene  | → | UL  |
| STYLE<br>UL31, UL32, UL34, UL35  | → | 31  |
| VOLTAGE<br>DC Voltage Rating: Q = 500 VDC, K = 600, etc.   | → | Q   |
| CAPACITANCE IN PICO FARADS<br>The first two digits are significant, the third represents the number of zeros (e.g 157=150,000,000pF) | → | 157 |
| Tolerance<br>Standard tolerance is ±10%. Tolerances of ±20% and ±5% are also available.  | → | K   |

### Marking And Date Code

All capacitors are marked with company initials "EC", corporate logo or EC trademark—in addition to type UL3, capacitance, tolerance, rated DC working voltage and date code. The first two digits of the date code represent the year, the second two digits the week, i.e., 1252 is the 52nd week of 2012, 1202 is the second week of 2012.

### Quality Assurance

Major emphasis is placed on quality assurance. EC is an ISO 9001 and AS9100 Certified Company. Raw material inspection and the use of SPC manufacturing procedures assure the highest quality standards. Procedures are fully described in the EC Quality Control Manual. Electronic Concepts will continue to advance the state-of-the-art by utilizing leading edge technology, compact capacitor designs and establishing reliability procedures.

## Sales Offices

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