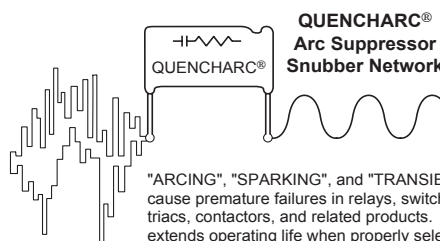
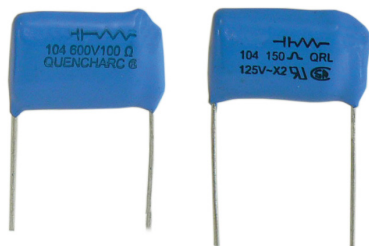


# Type Q/QRL (Quencharc®) Arc Suppressor/Snubber Network

## Radial Metallized Polyester RC Network for Transient Suppression

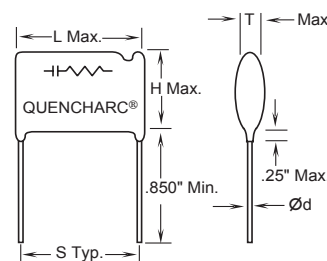


"ARCING", "SPARKING", and "TRANSIENTS" often cause premature failures in relays, switches, thyristors, triacs, contactors, and related products. QUENCHARC® extends operating life when properly selected and applied.

### Highlights

- ◆ Noise and arc suppression
- ◆ RC Snubber Network
- ◆ Relay contact protection
- ◆ Noise reduction on controllers and drives
- ◆ EMI/RFI reduction
- ◆ dv/dt suppression
- ◆ Type QRL - UL/CSA version
- ◆ Coated with flame retardant epoxy

### Outline Dimensions



### Specifications

- Capacitance Range:** 0.10  $\mu$ F, 0.25  $\mu$ F, 0.50  $\mu$ F, 1.0  $\mu$ F
- Voltage Range:** 200 Vdc/125 Vac, 60 Hz thru 1600 Vdc/660 Vac, 60 Hz
- Capacitance Tolerance:**  $\pm$ 20%
- Resistor Tolerance:**  $\pm$ 10%
- Resistor Values:** 22, 39, 47, 100, 150, 220, 330, 680 ohms
- Operating Temperature Range :** -55 °C to +85 °C at full rated voltage
- Construction:** Metallized polyester in series with a carbon composition resistor<sup>1</sup>
- Dielectric Withstand Voltage:** 1.6 x DC rated voltage @ +25 °C
- DC Life Test:** 125% of rated voltage for a period of 500 hours at 85 °C with capacitance change  $\leq$ 5% and DF  $\leq$  original limits
- Long Term Stability:** The capacitance shall not change more than 2% when stored at ambient temperature and humidity for a period of two years or less.

RoHS Compliant

### Ratings

| Catalog Part Number      | Cap ( $\mu$ F) | Resistor Ohms Watts | Dimensions in Inches |       |       |        |               |               | Dimensions in Millimeters |       |       |        |               |               |
|--------------------------|----------------|---------------------|----------------------|-------|-------|--------|---------------|---------------|---------------------------|-------|-------|--------|---------------|---------------|
|                          |                |                     | L Max                | T Max | H Max | S Typ. | $\phi_d$ Typ. | $\phi_d$ Typ. | L Max                     | T Max | H Max | S Typ. | $\phi_d$ Typ. | $\phi_d$ Typ. |
| <b>200 Vdc / 125 Vac</b> |                |                     |                      |       |       |        |               |               |                           |       |       |        |               |               |
| 504M02QA22               | 0.5            | 22 1/2              | 1.08                 | 0.37  | 0.64  | 0.82   | 0.032         | 0.025         | 27.4                      | 9.4   | 16.3  | 20.8   | 0.8           | 0.635         |
| 504M02QA47               | 0.5            | 47 1/2              | 1.08                 | 0.37  | 0.64  | 0.82   | 0.032         | 0.025         | 27.4                      | 9.4   | 16.3  | 20.8   | 0.8           | 0.635         |
| 504M02QA100              | 0.5            | 100 1/2             | 1.08                 | 0.37  | 0.64  | 0.82   | 0.032         | 0.025         | 27.4                      | 9.4   | 16.3  | 20.8   | 0.8           | 0.635         |
| 504M02QA220              | 0.5            | 220 1/2             | 1.08                 | 0.37  | 0.64  | 0.82   | 0.032         | 0.025         | 27.4                      | 9.4   | 16.3  | 20.8   | 0.8           | 0.635         |
| 105M02QB22               | 1.0            | 22 1/2              | 1.45                 | 0.39  | 0.66  | 1.20   | 0.032         | 0.025         | 36.8                      | 9.9   | 16.7  | 30.5   | 0.8           | 0.635         |
| 105M02QB47               | 1.0            | 47 1/2              | 1.45                 | 0.39  | 0.66  | 1.20   | 0.032         | 0.025         | 36.8                      | 9.9   | 16.7  | 30.5   | 0.8           | 0.635         |
| <b>600 Vdc / 250 Vac</b> |                |                     |                      |       |       |        |               |               |                           |       |       |        |               |               |
| 104M06QC22               | 0.1            | 22 1/2              | 1.08                 | 0.39  | 0.66  | 0.82   | 0.032         | 0.025         | 27.4                      | 9.9   | 16.7  | 20.8   | 0.8           | 0.635         |
| 104M06QC47               | 0.1            | 47 1/2              | 1.08                 | 0.39  | 0.66  | 0.82   | 0.032         | 0.025         | 27.4                      | 9.9   | 16.7  | 20.8   | 0.8           | 0.635         |
| 104M06QC100              | 0.1            | 100 1/2             | 1.08                 | 0.39  | 0.66  | 0.82   | 0.032         | 0.025         | 27.4                      | 9.9   | 16.7  | 20.8   | 0.8           | 0.635         |
| 104M06QC150              | 0.1            | 150 1/2             | 1.08                 | 0.39  | 0.66  | 0.82   | 0.032         | 0.025         | 27.4                      | 9.9   | 16.7  | 20.8   | 0.8           | 0.635         |
| 104M06QC220              | 0.1            | 220 1/2             | 1.08                 | 0.39  | 0.66  | 0.82   | 0.032         | 0.025         | 27.4                      | 9.9   | 16.7  | 20.8   | 0.8           | 0.635         |
| 104M06QC330              | 0.1            | 330 1/2             | 1.08                 | 0.39  | 0.66  | 0.82   | 0.032         | 0.025         | 27.4                      | 9.9   | 16.7  | 20.8   | 0.8           | 0.635         |

Type QRL: UL File No. E33628, CSA File No. LR32208

# Type Q/QRL (Quencharc®) Arc Suppressor/Snubber Network

## Ratings

| Catalog Part Number  | Cap (µF) | Resistor<br>Ohms Watts |     | Dimensions in Inches |      |      |      |                 |                 | Dimensions in Millimeters |       |      |      |                 |                 |
|--|----------|------------------------|-----|----------------------|------|------|------|-----------------|-----------------|---------------------------|-------|------|------|-----------------|-----------------|
|  |          |                        |     | L                    | T    | H    | S    | Ød <sub>c</sub> | Ød <sub>f</sub> | L                         | T     | H    | S    | Ød <sub>c</sub> | Ød <sub>f</sub> |
|  |          |                        |     | Max                  | Max  | Max  | Typ. | Typ.            | Typ.            | Max                       | Max   | Max  | Typ. | Typ.            | Typ.            |
| <b>600 Vdc / 250Vac</b>  |          |                        |     |                      |      |      |      |                 |                 |                           |       |      |      |                 |                 |
| 254M06QD22   | 0.25     | 22                     | 1/2 | 1.45                 | 0.42 | 0.75 | 1.20 | 0.032           | 0.025           | 36.8                      | 10.6  | 19.0 | 30.5 | 0.8             | 0.635           |
| 254M06QD47   | 0.25     | 47                     | 1/2 | 1.45                 | 0.42 | 0.75 | 1.20 | 0.032           | 0.025           | 36.8                      | 10.6  | 19.0 | 30.5 | 0.8             | 0.635           |
| 254M06QD100  | 0.25     | 100                    | 1/2 | 1.45                 | 0.42 | 0.75 | 1.20 | 0.032           | 0.025           | 36.8                      | 10.6  | 19.0 | 30.5 | 0.8             | 0.635           |
| 254M06QD150  | 0.25     | 150                    | 1/2 | 1.45                 | 0.42 | 0.75 | 1.20 | 0.032           | 0.025           | 36.8                      | 10.6  | 19.0 | 30.5 | 0.8             | 0.635           |
| 504M06QE22   | 0.5      | 22                     | 1/2 | 1.45                 | 0.59 | 0.92 | 1.20 | 0.032           | 0.025           | 36.8                      | 15.0  | 23.4 | 30.5 | 0.8             | 0.635           |
| 504M06QE47   | 0.5      | 47                     | 1/2 | 1.45                 | 0.59 | 0.92 | 1.20 | 0.032           | 0.025           | 36.8                      | 15.0  | 23.4 | 30.5 | 0.8             | 0.635           |
| 504M06QE100  | 0.5      | 100                    | 1/2 | 1.45                 | 0.59 | 0.92 | 1.20 | 0.032           | 0.025           | 36.8                      | 15.0  | 23.4 | 30.5 | 0.8             | 0.635           |
| 504M06QE150  | 0.5      | 150                    | 1/2 | 1.45                 | 0.59 | 0.92 | 1.20 | 0.032           | 0.025           | 36.8                      | 15.0  | 23.4 | 30.5 | 0.8             | 0.635           |
| <b>1200 Vdc / 480Vac</b>   |          |                        |     |                      |      |      |      |                 |                 |                           |       |      |      |                 |                 |
| 104M48QH39   | 0.1      | 39                     | 2   | 1.60                 | 0.64 | 1.04 | 1.29 | 0.032           | 0.032           | 40.6                      | 16.3  | 26.4 | 32.7 | 0.8             | 0.8             |
| <b>1600 Vdc / 660Vac</b>   |          |                        |     |                      |      |      |      |                 |                 |                           |       |      |      |                 |                 |
| 104M66QV39   | 0.1      | 39                     | 2   | 2.18                 | 0.54 | 1    | 1.8  | 0.032           | 0.032           | 55.3                      | 13.7  | 25.4 | 45.7 | 0.8             | 0.8             |
| <b>UL/CSA Recognized Across-the-Line Application    Type QRL 125VAC    Type QRL complies with UL1414/CSA-C22.2 No. 1</b> |          |                        |     |                      |      |      |      |                 |                 |                           |       |      |      |                 |                 |
| 104MACQRL150   | 0.1      | 150                    | 1/2 | 1.08                 | 0.44 | 0.66 | 0.82 | 0.032           | 0.025           | 27.4                      | 11.18 | 16.7 | 20.8 | 0.8             | 0.635           |
| 104MACQRL680   | 0.1      | 680                    | 1/2 | 1.08                 | 0.44 | 0.66 | 0.82 | 0.032           | 0.025           | 27.4                      | 11.18 | 16.7 | 20.8 | 0.8             | 0.635           |

Type QRL: UL File No. E33628, CSA File No. LR32208

<sup>1</sup> Two watt resistor is wire wound

Shaded items are stocked parts

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