

# Type Z Lighting Capacitors, 90 °C Rated, Oil Filled

## AC Rated, Oil Filled/Impregnated, Metallized Polypropylene Capacitors



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For better performance in HID Lighting and HV Ballasts, Type Z oval and round oil filled metallized polypropylene lighting capacitors are built for operating in the high temperature environments for high intensity discharge (HID) lighting and other high voltage ballast applications. Each HID catalog capacitor includes an external resistor that discharges the capacitor to less than 50V in one minute, and the oil filled process assures better reliability than dry capacitors.

### Highlights

- Meets EIA Standard EIA-456-A
- Dual rated HID
- Dual or triple value caps for sign ballast
- UL-810 Fault current protection

### Specifications

|   |                           |
|---|---------------------------|
| Capacitance Range                       | 5.0 $\mu$ F to 65 $\mu$ F |
| Capacitance Tolerance                   | $\pm$ 3%                  |
| Rated Voltage                           | 240 Vac to 525 Vac        |
| Operating Temperature Range with Ripple | -40 °C to +90 °C          |
| Approval Certification                  | UL cUL                    |
| <b>RoHS Compliant</b>                   |                           |

### Part Numbering System

| Z    | 73   | S   | 40                           | 26                                 | M   | N           |
|------|--|---|------------------------------|------------------------------------|---|-------------|
|      |  |   |                              |                                    |   |             |
| Type | Can Size   | Impregnant  | Voltage Ratings              | Capacitance Code                   | Voltage/<br>Capacity Descriptor                         | CDE Factory |
| Z    | 73 = 1.75" Rd<br>74 = 2" Rd<br>76 = 2.50" Rd<br>91 = 1.25" Oval<br>92 = 1.50" Oval<br>93 = 1.75" Oval<br>94 = 2.00" Oval<br>81 = 30 mm Rd<br>83 = 40 mm Rd<br>84 = 45 mm Rd<br>85 = 50 mm Rd | S = Epoxidized Soy Bean Oil<br>W = Dry w/ wire<br>A = Dry w/ QC | 33 = 330 VAC<br>40 = 400 VAC | 26 = 26 $\mu$ F<br>40 = 40 $\mu$ F | 90°C Full Life<br>100°C Full Life<br>100°C Reduced Life |             |

### Ratings

| CAP ( $\mu$ F)                        | CD-AERO P/N | BASE SIZE | CAN HEIGHT Inches (mm) |
|---------------------------------------|-------------|-----------|------------------------|
| <b>240 VAC, 90°C Case Temperature</b> |             |           |                        |
| 35                                    | Z92S2435MN  | B         | 3.75 (95.3)            |
| 40                                    | Z92S2440MN  | B         | 3.75 (95.3)            |
| 45                                    | Z92S2445MN  | B         | 3.75 (95.3)            |
| 52                                    | Z92S2452MN  | B         | 3.75 (95.3)            |
| 55                                    | Z92S2455MN  | B         | 3.75 (95.3)            |
| <b>300 VAC, 90°C Case Temperature</b> |             |           |                        |
| 5                                     | Z91S3005MN  | A         | 2.19 (55.6)            |
| 6                                     | Z91S3006MN  | A         | 2.19 (55.6)            |
| 12                                    | Z91S3012MN  | A         | 2.88 (73.2)            |
| 14                                    | Z92S3014MN  | B         | 2.75 (69.9)            |
| 28                                    | Z93S3028MN  | C         | 3.13 (79.5)            |

| CAP ( $\mu$ F)                        | CD-AERO P/N | BASE SIZE | CAN HEIGHT Inches (mm) |
|---------------------------------------|-------------|-----------|------------------------|
| <b>300 VAC, 90°C Case Temperature</b> |             |           |                        |
| 40                                    | Z93S3040MN  | C         | 3.25 (82.6)            |
| 55                                    | Z93S3055MN  | C         | 3.88 (98.6)            |
| 64                                    | Z93S3064MN  | C         | 4.25 (108)             |
| <b>330 VAC, 90°C Case Temperature</b> |             |           |                        |
| 7                                     | Z91S3307MN  | A         | 2.19 (55.6)            |
| 8                                     | Z91S3308MN  | A         | 2.19 (55.6)            |
| 10                                    | Z91S3310MN  | A         | 2.69 (68.3)            |
| 12                                    | Z91S3312MN  | A         | 2.88 (73.2)            |
| 14                                    | Z91S3314MN  | A         | 2.88 (73.2)            |
| 16                                    | Z91S3316MN  | A         | 3.75 (95.3)            |
| 17.5                                  | Z92S3317NN  | B         | 3.13 (79.5)            |

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### Oil-Filled, Oval Metal Case

Rated for 60,000 hours

| CAP (μF)                              | CD-AERO P/N | BASE SIZE | CAN HEIGHT Inches (mm) |
|---------------------------------------|-------------|-----------|------------------------|
| <b>330 VAC, 90°C Case Temperature</b> |             |           |                        |
| 24                                    | Z93S3324MN  | C         | 2.75 (69.9)            |
| 26                                    | Z93S3326MN  | C         | 3.13 (79.5)            |
| 29                                    | Z93S3329MN  | C         | 3.13 (79.5)            |
| 30                                    | Z93S3330MN  | C         | 3.13 (79.5)            |
| 34                                    | Z93S3334MN  | C         | 3.13 (79.5)            |
| 35                                    | Z93S3335MN  | C         | 3.13 (79.5)            |
| 48                                    | Z93S3348MN  | C         | 3.88 (98.6)            |
| <b>400 VAC, 90°C Case Temperature</b> |             |           |                        |
| 10                                    | Z92S4010MN  | B         | 2.75 (69.9)            |
| 15                                    | Z93S4015MN  | C         | 2.75 (69.9)            |
| 21                                    | Z93S4021MN  | C         | 3.13 (79.5)            |
| 22.5                                  | Z93S4022NN  | C         | 3.13 (79.5)            |
| 24                                    | Z93S4024MN  | C         | 3.13 (79.5)            |
| <b>480 VAC, 90°C Case Temperature</b> |             |           |                        |
| 3                                     | Z91S4803MN  | A         | 2.25 (57.2)            |
| 4                                     | Z91S4804MN  | A         | 2.69 (68.3)            |
| 5                                     | Z91S4805MN  | A         | 2.88 (73.2)            |
| 6                                     | Z92S4806MN  | B         | 2.75 (69.9)            |
| 10                                    | Z92S4810MN  | B         | 2.75 (69.9)            |
| 12                                    | Z93S4812MN  | C         | 3.13 (79.5)            |
| 15                                    | Z92S4815MN  | B         | 3.75 (95.3)            |
| 20                                    | Z93S4820MN  | C         | 3.75 (95.3)            |
| 21                                    | Z93S4821MN  | C         | 3.75 (95.3)            |
| 22                                    | Z93S4822MN  | C         | 3.88 (98.6)            |
| 24                                    | Z93S4824PN  | C         | 3.88 (98.6)            |
| 26                                    | Z93S4826MN  | C         | 3.88 (98.6)            |
| 28                                    | Z93S4828PN  | C         | 3.88 (98.6)            |
| <b>525 VAC, 90°C Case Temperature</b> |             |           |                        |
| 16                                    | Z93S5216NN  | C         | 3.13 (79.5)            |
| 24                                    | Z93S5224NN  | C         | 4.25 (108.0)           |
| 26                                    | Z93S5226NN  | C         | 4.25 (108.0)           |
| 26                                    | Z94S5226NN  | D         | 2.88 (73.2)            |
| 32                                    | Z93S5232NN  | C         | 4.75 (120.7)           |
| 32                                    | Z94S5232NN  | D         | 3.75 (95.3)            |

| CAP (μF)                                   | CD-AERO P/N | BASE SIZE | CAN HEIGHT Inches (mm) | VAC |
|--|-------------|-----------|------------------------|-----|
| <b>400-525 VAC, 100°C Case Temperature</b> |             |           |                        |     |
| 24   | Z94S4024BN  | D         | 3.25 (82.6)            | 400 |
| 24   | Z94S4824BN  | D         | 3.75 (95.3)            | 480 |
| 21   | Z94S5221JN  | D         | 3.75 (95.3)            | 525 |
| 26   | Z94S5226JN  | D         | 3.75 (95.3)            | 525 |

### Oil-Filled, Round Metal Case

Rated for 60,000 hours

| CAP (μF)                                  | CD-AERO P/N | BASE SIZE | CAN HEIGHT Inches (mm) |
|---|-------------|-----------|------------------------|
| <b>300 VAC, 90°C Case Temperature</b>     |             |           |                        |
| 8   | Z73S3008MN  | P         | 2.17 (55.1)            |
| 14  | Z73S3014MN  | P         | 2.38 (60.5)            |
| 22.5                                      | Z73S3022NN  | P         | 2.88 (73.2)            |
| <b>330 VAC, 90°C Case Temperature</b>     |             |           |                        |
| 5   | Z73S3305MN  | P         | 2.25 (57.2)            |
| 7   | Z73S3307MN  | P         | 2.88 (73.2)            |
| 12  | Z73S3312MN  | P         | 2.38 (60.5)            |
| 14  | Z73S3314MN  | P         | 2.88 (73.2)            |
| 28  | Z73S3328MN  | P         | 3.15 (80.0)            |
| <b>400 VAC, 90°C Case Temperature VAC</b> |             |           |                        |
| 10  | Z73S4010MN  | P         | 2.38 (60.5)            |
| 15  | Z73S4015MN  | P         | 2.88 (73.2)            |
| 22.5                                      | Z73S4022NN  | P         | 3.75 (95.3)            |
| 24  | Z73S4024MN  | P         | 3.75 (95.3)            |
| <b>480 VAC, 90°C Case Temperature</b>     |             |           |                        |
| 10  | Z73S4810MN  | P         | 2.88 (73.2)            |
| 24  | Z74S4824MN  | S         | 3.25 (82.6)            |
| 24  | Z76S4824MN  | T         | 3.15 (80.0)            |
| <b>525 VAC, 90°C Case Temperature</b>     |             |           |                        |
| 26  | Z74S5226NN  | S         | 4.75 (120.7)           |
| 32  | Z74S5232NN  | S         | 4.92 (125.0)           |
| 32  | Z76S5232NN  | T         | 3.55 (90.2)            |

| CAP (μF)                                   | CD-AERO P/N | BASE SIZE | CAN HEIGHT Inches (mm) | VAC |
|--|-------------|-----------|------------------------|-----|
| <b>400-480 VAC, 100°C Case Temperature</b> |             |           |                        |     |
| 10   | Z73S4010BN  | P         | 2.38 (60.5)            | 400 |
| 15   | Z73S4015BN  | P         | 3.25 (82.6)            | 400 |
| 24   | Z74S4024BN  | S         | 3.75 (95.3)            | 400 |
| 24   | Z74S4824BN  | S         | 4.25 (108.0)           | 480 |

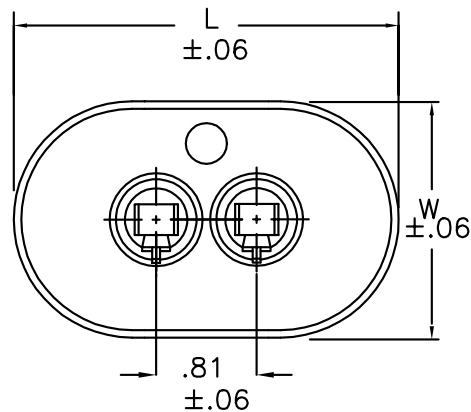
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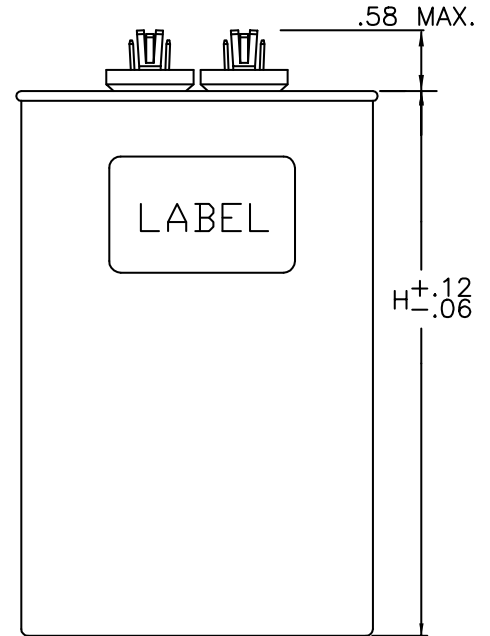
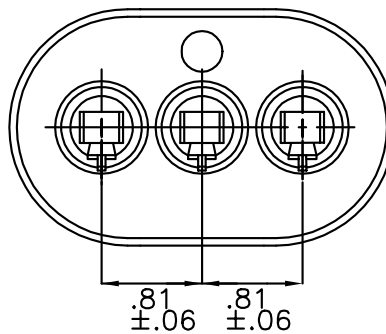
### Oval Oil-Filled Case Sizes

| Base Size | Description | L Inches | W Inches |
|-----------|-------------|----------|----------|
| A         | 1¼" Oval    | 2.16     | 1.31     |
| B         | 1½" Oval    | 2.69     | 1.56     |
| C         | 1¾" Oval    | 2.91     | 1.91     |
| D         | 2" Oval     | 3.66     | 1.97     |

### Oval Single Cover Configuration



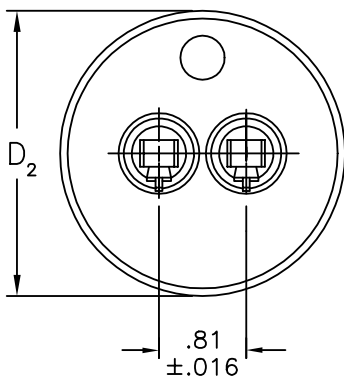
### Oval Dual Cover Configuration



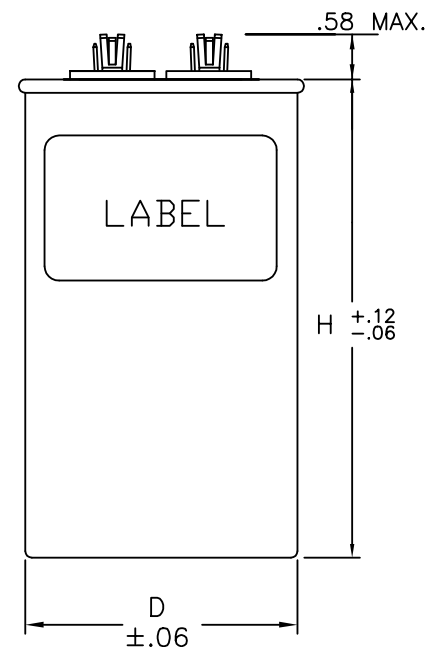
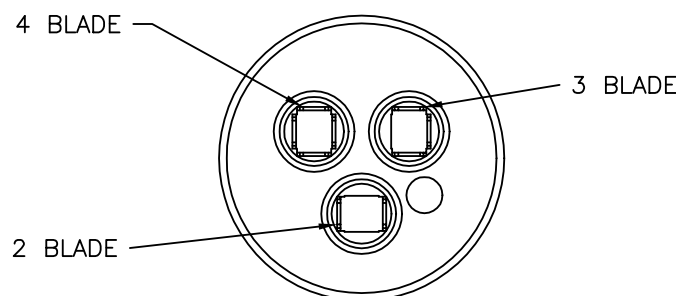
### Round Oil-Filled Case Sizes

| Base Size | Description | D Inches | D <sub>2</sub> Inches |
|-----------|-------------|----------|-----------------------|
| P         | 1¾" Round   | 1.75     | 1.87                  |
| S         | 2" Round    | 2.00     | 2.12                  |
| T         | 2½" Round   | 2.50     | 2.62                  |

### Round Single Cover Configuration



### Round Dual Cover Configuration



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