

## Aluminum Capacitors + 85 °C, Miniature, Radial Lead

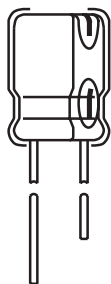


Fig.1 Component outline

### FEATURES

- High CV per case size
- Low cost
- Low profile ratings



**RoHS**  
COMPLIANT

| QUICK REFERENCE DATA                    |                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DESCRIPTION                             | VALUE                                                                                                                                                                                                                                                                                                                      |
| Nominal case size<br>Ø D x L in mm      | 0.157" x 0.276" [4.0 x 7.0]<br>to 0.709" x 1.575" [18.0 x 40.0]                                                                                                                                                                                                                                                            |
| Operating temperature                   | - 40 °C to + 85 °C<br>- 25 °C to + 85 °C for 315 WVDC<br>to 450 WVDC units                                                                                                                                                                                                                                                 |
| Rated Capacitance range, C <sub>R</sub> | 0.1 µF to 18 000 µF                                                                                                                                                                                                                                                                                                        |
| Tolerance on C <sub>R</sub>             | ± 20 %                                                                                                                                                                                                                                                                                                                     |
| Rated voltage range, U <sub>R</sub>     | 6.3 WVDC to 450 WVDC                                                                                                                                                                                                                                                                                                       |
| Termination                             | 2 radial leads                                                                                                                                                                                                                                                                                                             |
| Life validation test at 85 °C           | 2000 hours: ΔCAP ± 20 % from<br>initial measurement.<br>ΔDF 2 x initial specified limit.<br>ΔDCL ≤ initial specified limit                                                                                                                                                                                                 |
| Shelf life at 85 °C                     | 1000 hours: ΔCAP ± 20 % from<br>initial measurement.<br>ΔDF 2 x initial specified limit.<br>ΔDCL ≤ initial specified limit                                                                                                                                                                                                 |
| DC leakage current                      | rated voltage for 1 and 2 minutes<br>for 6.3 WVDC to<br>100 WVDC units:<br>I < 0.03 CV or 4 µA<br>(whichever is greater).<br>I < 0.04 CV or 3 µA<br>(whichever is greater).<br>rated voltage for 1 minute for<br>160 WVDC to 450 WVDC units:<br>I < 0.1 CV + 40 µA and<br>CV ≤ 1000; I < 0.04 CV + 100 µA<br>and CV > 1000 |

| RIPPLE CURRENT MULTIPLIERS |               |         |           |             |       |          |
|----------------------------|---------------|---------|-----------|-------------|-------|----------|
| TEMPERATURE                |               |         |           |             |       |          |
| Ambient Temperature        |               |         |           | Multipliers |       |          |
| ≤ + 70 °C                  |               |         |           | 1.27        |       |          |
| + 85 °C                    |               |         |           | 1.0         |       |          |
| FREQUENCY (Hz)             |               |         |           |             |       |          |
| WVDC                       | Cap. (μF)     | 50 - 60 | 100 - 120 | 300 - 400   | 1 kHz | ≤ 10 kHz |
| 6.3 - 100                  | 0 - 47        | 0.75    | 1         | 1.35        | 1.57  | 2.00     |
|                            | 100 - 470     | 0.80    | 1         | 1.23        | 1.34  | 1.50     |
|                            | 1000 - 18 000 | 0.85    | 1         | 1.10        | 1.13  | 1.15     |
| 160 - 450                  | 0.47 - 220    | 0.80    | 1         | 1.25        | 1.40  | 1.60     |

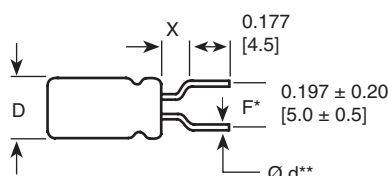
| LOW TEMPERATURE PERFORMANCE             |                     |                     |
|-----------------------------------------|---------------------|---------------------|
| MAXIMUM IMPEDANCE RATIO Z(T)/Z(+ 20 °C) |                     |                     |
| MAXIMUM AT 120 Hz                       |                     |                     |
| Rated Voltage<br>(WVDC)                 | Z - 25 °C/Z + 20 °C | Z - 40 °C/Z + 20 °C |
| 6.3                                     | 4.0                 | 10.0                |
| 10.0                                    | 3.0                 | 8.0                 |
| 16.0                                    | 2.0                 | 6.0                 |
| 25.0                                    | 2.0                 | 4.0                 |
| 35.0 - 100.0                            | 2.0                 | 3.0                 |
| 160.0 - 200.0                           | 3.0                 | 4.0                 |
| 250.0                                   | 3.0                 | 6.0                 |
| 315.0 - 400.0                           | 6.0                 | -                   |
| 450.0                                   | 15.0                | -                   |

| DIMENSIONS in inches [millimeters] |                            |                   |                            |                       |
|------------------------------------|----------------------------|-------------------|----------------------------|-----------------------|
| CASE CODE                          | NOMINAL CASE SIZE<br>D x L | LEAD SPACING<br>S | NOMINAL LEAD DIAMETER<br>D | TYPICAL WEIGHT<br>(g) |
| HW                                 | 0.157 x 0.276 [4.0 x 7.0]  | 0.059 [1.5]       | 0.018 [0.45]               | 0.20                  |
| JW                                 | 0.197 x 0.276 [5.0 x 7.0]  | 0.079 [2.0]       | 0.018 [0.45]               | 0.30                  |
| AW                                 | 0.248 x 0.276 [6.3 x 7.0]  | 0.098 [2.5]       | 0.018 [0.45]               | 0.40                  |
| JA                                 | 0.197 x 0.433 [5.0 x 11.0] | 0.079 [2.0]       | 0.020 [0.50]               | 0.44                  |
| AA                                 | 0.248 x 0.433 [6.3 x 11.0] | 0.098 [2.5]       | 0.020 [0.50]               | 0.60                  |
| BB                                 | 0.315 x 0.453 [8.0 x 11.5] | 0.138 [3.5]       | 0.024 [0.60]               | 0.95                  |

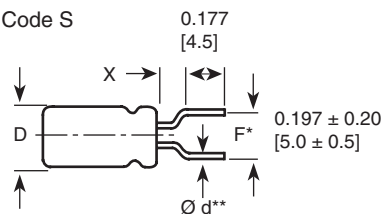
| DIMENSIONS in inches [millimeters] |                             |                   |                            |                       |
|------------------------------------|-----------------------------|-------------------|----------------------------|-----------------------|
| CASE CODE                          | NOMINAL CASE SIZE<br>D x L  | LEAD SPACING<br>S | NOMINAL LEAD DIAMETER<br>D | TYPICAL WEIGHT<br>(g) |
| CC                                 | 0.394 x 0.492 [10.0 x 12.5] | 0.197 [5.0]       | 0.024 [0.60]               | 1.48                  |
| CD                                 | 0.394 x 0.630 [10.0 x 16.0] | 0.197 [5.0]       | 0.024 [0.60]               | 1.75                  |
| CG                                 | 0.394 x 0.787 [10.0 x 20.0] | 0.197 [5.0]       | 0.024 [0.60]               | 2.37                  |
| DG                                 | 0.492 x 0.787 [12.5 x 20.0] | 0.197 [5.0]       | 0.024 [0.60]               | 3.73                  |
| DK                                 | 0.492 x 0.984 [12.5 x 25.0] | 0.197 [5.0]       | 0.024 [0.60]               | 4.85                  |
| EK                                 | 0.630 x 0.984 [16.0 x 25.0] | 0.295 [7.5]       | 0.031 [0.80]               | 7.08                  |
| EN                                 | 0.630 x 1.240 [16.0 x 31.5] | 0.295 [7.5]       | 0.031 [0.80]               | 8.94                  |
| ER                                 | 0.630 x 1.398 [16.0 x 35.5] | 0.295 [7.5]       | 0.031 [0.80]               | 10.50                 |
| FR                                 | 0.709 x 1.398 [18.0 x 35.5] | 0.295 [7.5]       | 0.031 [0.80]               | 12.53                 |
| FV                                 | 0.709 x 1.575 [18.0 x 40.0] | 0.295 [7.5]       | 0.031 [0.80]               | 15.71                 |

**ELECTROLYTIC CAPACITOR WITH CUT OR FORMED LEADS in inches [millimeters]**

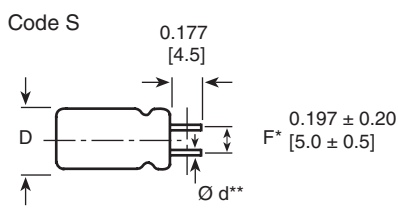
Code F



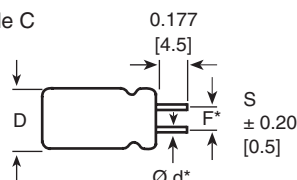
Code S



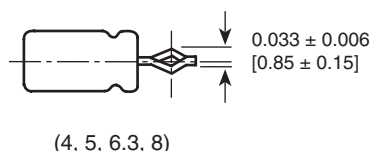
Code S



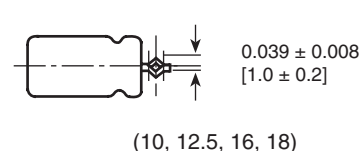
Code C



Code S



Code S



| DIMENSIONS in inches [millimeters] |                  |              |             |             |             |             |
|------------------------------------|------------------|--------------|-------------|-------------|-------------|-------------|
| FORMING METHOD                     | FORMED LEAD CODE | DIMENSIONS   |             |             |             |             |
|                                    |                  | D            | L.S.        | P           | e***        | X (Max.)    |
| Formed and Cut                     | F                | 0.157 [4.0]  | 0.197 [5.0] | 0.059 [1.5] | -           | 0.059 [1.5] |
|                                    |                  | 0.197 [5.0]  | 0.197 [5.0] | 0.079 [2.0] | -           | 0.059 [1.5] |
|                                    |                  | 0.248 [6.3]  | 0.197 [5.0] | 0.098 [2.5] | -           | 0.098 [2.5] |
|                                    |                  | 0.315 [8.0]  | 0.197 [5.0] | 0.138 [3.5] | -           | 0.098 [2.5] |
| Cut                                | C                | 0.394 [10.0] | 0.197 [5.0] | -           | -           | -           |
|                                    |                  | 0.492 [12.5] | 0.197 [5.0] | -           | -           | -           |
|                                    |                  | 0.630 [16.0] | 0.295 [7.5] | -           | -           | -           |
|                                    |                  | 0.709 [18.0] | 0.295 [7.5] | -           | -           | -           |
| Snap-in                            | S                | 0.157 [4.0]  | 0.197 [5.0] | 0.059 [1.5] | 0.043 [1.1] | 0.059 [1.5] |
|                                    |                  | 0.197 [5.0]  | 0.197 [5.0] | 0.079 [2.0] | 0.043 [1.1] | 0.059 [1.5] |
|                                    |                  | 0.248 [6.3]  | 0.197 [5.0] | 0.098 [2.5] | 0.043 [1.1] | 0.059 [1.5] |
|                                    |                  | 0.315 [8.0]  | 0.197 [5.0] | 0.138 [3.5] | 0.051 [1.3] | 0.059 [1.5] |
|                                    |                  | 0.394 [10.0] | 0.197 [5.0] | -           | 0.051 [1.3] | -           |
|                                    |                  | 0.492 [12.5] | 0.197 [5.0] | -           | 0.051 [1.3] | -           |
|                                    |                  | 0.630 [16.0] | 0.295 [7.5] | -           | 0.051 [1.3] | -           |
|                                    |                  | 0.709 [18.0] | 0.295 [7.5] | -           | 0.051 [1.3] | -           |

**Note**

Coding of cut or formed lead to be added to the end of type number in 15th position (with position 14 coded "6").

\* Formed lead. \*\* Lead thickness Ø d depends on capacitor specification. \*\*\* Lead protrusion at bottom of tape.

**TAPED CAPACITORS FOR AUTOMATIC INSERTION SYSTEMS** in inches [millimeters]

| PACKAGING | LEAD CODE<br>14th AND 15th<br>DIGITS OF PN | SPECIFICATION              |                  | LEAD<br>SPACE | CAPACITOR SIZES AVAILABLE                                                                                |
|-----------|--------------------------------------------|----------------------------|------------------|---------------|----------------------------------------------------------------------------------------------------------|
|           |                                            | LEAD STYLE                 | +<br>-<br>LEADER |               |                                                                                                          |
| Ammo Pack | 8P                                         | Formed Lead <sup>(1)</sup> | -                | 0.197 [5.0]   | 0.157 x 0.276 - 0.492 x 0.787 [4.0 x 7.0 - 12.5 x 20.0]<br>CASE CODES HW, JW, AW, JA, AA, BB, CC, CD, DG |

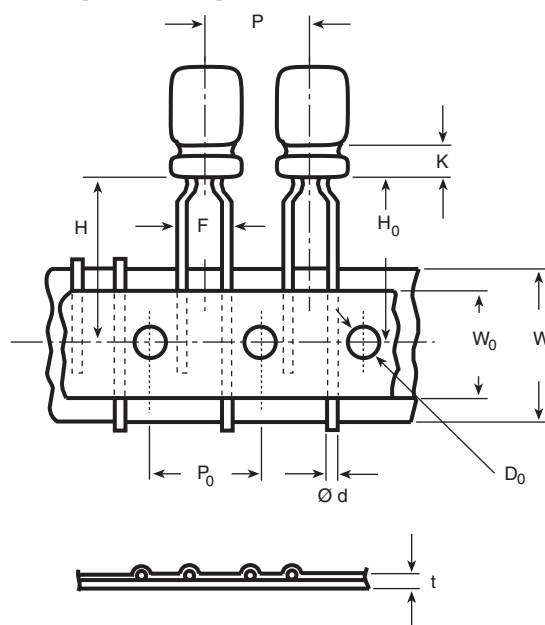
**Note**

The ammo pack code is to be added at the end of part number in the 14th and 15th position as 8P. To specify formed, cut or snap-in leads and for tape and ammo, both positions 14 and 15 of the type number must be filled in with the proper codes.

<sup>(1)</sup> Except 0.394 [10.0 mm] and 0.492 [12.5 mm] diameter have straight unformed leads.

**TAPING SPECIFICATIONS** in inches [millimeters]

Formed Lead Type

**DIMENSIONS** in inches [millimeters]

| ITEM                                     | CASE SIZE<br>(Diameter x Length) |                              |                               |                              |                               |                               |                        |                        |
|------------------------------------------|----------------------------------|------------------------------|-------------------------------|------------------------------|-------------------------------|-------------------------------|------------------------|------------------------|
|                                          | FORMED LEAD TYPE                 |                              |                               |                              |                               |                               | STRAIGHT LEAD TYPE     |                        |
|                                          | 0.157 x 0.276<br>[4.0 x 7.0]     | 0.197 x 0.276<br>[5.0 x 7.0] | 0.197 x 0.433<br>[5.0 x 11.0] | 0.248 x 0.276<br>[6.3 x 7.0] | 0.248 x 0.433<br>[6.3 x 11.0] | 0.315 x 0.453<br>[8.0 x 11.5] | 0.394 [10.0]<br>(Dia.) | 0.492 [12.5]<br>(Dia.) |
| Ø d - Lead-wire Diameter                 | 0.018 [0.45]                     | 0.018 [0.45]                 | 0.020 [0.5]                   | 0.018 [0.45]                 | 0.020 [0.5]                   | 0.024 [0.6]                   | 0.024 [0.6]            | 0.024 [0.6]            |
| P - Pitch of Component                   | 0.500 [12.7]                     | 0.500 [12.7]                 | 0.500 [12.7]                  | 0.500 [12.7]                 | 0.500 [12.7]                  | 0.500 [12.7]                  | 0.500 [12.7]           | 0.591 [15.0]           |
| P <sub>0</sub> - Feed Hole Pitch         | 0.500 [12.7]                     | 0.500 [12.7]                 | 0.500 [12.7]                  | 0.500 [12.7]                 | 0.500 [12.7]                  | 0.500 [12.7]                  | 0.500 [12.7]           | 0.591 [15.0]           |
| F - Lead-to-lead Distance                | 0.197 [5.0]                      | 0.197 [5.0]                  | 0.197 [5.0]                   | 0.197 [5.0]                  | 0.197 [5.0]                   | 0.197 [5.0]                   | 0.197 [5.0]            | 0.197 [5.0]            |
| K - Clinch Height                        | 0.059 [1.5]                      | 0.059 [1.5]                  | 0.098 [2.5]                   | 0.059 [1.5]                  | 0.098 [2.5]                   | 0.157 [4.0]                   | -                      | -                      |
| H - Height of Component                  | 0.689 [17.5]                     | 0.689 [17.5]                 | 0.728 [18.5]                  | 0.689 [17.5]                 | 0.728 [18.5]                  | 0.787 [20.0]                  | 0.728 [18.5]           | 0.630 [16.0]           |
| H <sub>0</sub> - Lead-wire Clinch Height | 0.630 [16.0]                     | 0.630 [16.0]                 | 0.630 [16.0]                  | 0.630 [16.0]                 | 0.630 [16.0]                  | 0.630 [16.0]                  | -                      | -                      |
| W - Tape Width                           | 0.709 [18.0]                     | 0.709 [18.0]                 | 0.709 [18.0]                  | 0.709 [18.0]                 | 0.709 [18.0]                  | 0.709 [18.0]                  | 0.709 [18.0]           | 0.709 [18.0]           |
| W <sub>0</sub> - Hold Down Tape Width    | 0.512 [13.0]                     | 0.512 [13.0]                 | 0.512 [13.0]                  | 0.512 [13.0]                 | 0.512 [13.0]                  | 0.512 [13.0]                  | 0.512 [13.0]           | 0.512 [13.0]           |
| D <sub>0</sub> - Feed Hole Diameter      | 0.157 [4.0]                      | 0.157 [4.0]                  | 0.157 [4.0]                   | 0.157 [4.0]                  | 0.157 [4.0]                   | 0.157 [4.0]                   | 0.157 [4.0]            | 0.157 [4.0]            |
| t - Total Tape Thickness                 | 0.157 [4.0]                      | 0.157 [4.0]                  | 0.157 [4.0]                   | 0.157 [4.0]                  | 0.157 [4.0]                   | 0.157 [4.0]                   | 0.157 [4.0]            | 0.157 [4.0]            |

Aluminum Capacitors  
+ 85 °C, Miniature, Radial Lead

Vishay Sprague

**ORDERING EXAMPLE**

Electrolytic capacitor 515D series:

515D 107 M 6R3 JA 6 A E3

| DESCRIPTION |                                       |
|-------------|---------------------------------------|
| CODE        | EXPLANATION                           |
| 515D        | product type                          |
| 107         | capacitance value (100 $\mu$ F)       |
| M           | tolerance (M = $\pm$ 20 %)            |
| 6R3         | voltage rating at 85 °C (6R3 = 6.3 V) |
| JA          | can size (see dimensions table)       |
| 6           | packaging (bulk)                      |
| A           | lead style (uncut)                    |
| E3          | RoHS compliant indicator              |

**PACKING AND LEAD STYLES:**

|    |                                                                   |
|----|-------------------------------------------------------------------|
| 6A | Bulk, uncut leads                                                 |
| 6C | Bulk, cut leads                                                   |
| 6F | Bulk; formed and cut leads                                        |
| 6S | Bulk, snap-in leads                                               |
| 8P | Ammopack (case codes HW, JW, AW, JA, AA, BB, CC, CD, CG, DG only) |

| ELECTRICAL DATA AND ORDERING INFORMATION |                   |                             |                                          |                                 |
|------------------------------------------|-------------------|-----------------------------|------------------------------------------|---------------------------------|
| CAPACITANCE<br>( $\mu$ F)                | PART NUMBER       | NOMINAL CASE SIZE<br>D x L  | MAX. RIPPLE<br>AT + 85 °C<br>120 Hz (mA) | MAX. DF<br>AT + 20 °C<br>120 Hz |
| 6.3 WVDC at + 85 °C, SURGE = 8 V         |                   |                             |                                          |                                 |
| 22.0                                     | 515D226M6R3JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 34.0                                     | 0.24                            |
| 33.0                                     | 515D336M6R3JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 42.0                                     | 0.24                            |
| 47.0                                     | 515D476M6R3JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 50.0                                     | 0.24                            |
| 100.0                                    | 515D107M6R3JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 77.0                                     | 0.24                            |
| 220.0                                    | 515D227M6R3AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 215.0                                    | 0.24                            |
| 330.0                                    | 515D337M6R3AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 265.0                                    | 0.24                            |
| 470.0                                    | 515D477M6R3BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 360.0                                    | 0.24                            |
| 1000.0                                   | 515D108M6R3CC6AE3 | 0.394 x 0.492 [10.0 x 12.5] | 570.0                                    | 0.24                            |
| 2200.0                                   | 515D228M6R3DG6AE3 | 0.492 x 0.787 [12.5 x 20.0] | 1050.0                                   | 0.24                            |
| 3300.0                                   | 515D338M6R3DG6AE3 | 0.492 x 0.787 [12.5 x 20.0] | 1250.0                                   | 0.24                            |
| 4700.0                                   | 515D478M6R3EK6AE3 | 0.630 x 0.984 [16.0 x 25.0] | 1700.0                                   | 0.24                            |
| 6800.0                                   | 515D688M6R3EK6AE3 | 0.630 x 0.984 [16.0 x 25.0] | 1900.0                                   | 0.24                            |
| 10 000.0                                 | 515D109M6R3EN6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 2250.0                                   | 0.24                            |
| 15 000.0                                 | 515D159M6R3FR6AE3 | 0.709 x 1.398 [18.0 x 35.5] | 2680.0                                   | 0.24                            |
| 18 000.0                                 | 515D189M6R3FV6AE3 | 0.709 x 1.575 [18.0 x 40.0] | 2750.0                                   | 0.24                            |
| 10 WVDC at + 85 °C, SURGE = 13 V         |                   |                             |                                          |                                 |
| 22.0                                     | 515D226M010JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 38.0                                     | 0.20                            |
| 33.0                                     | 515D336M010JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 47.0                                     | 0.20                            |
| 47.0                                     | 515D476M010JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 59.0                                     | 0.20                            |
| 100.0                                    | 515D107M010JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 145.0                                    | 0.20                            |
| 220.0                                    | 515D227M010AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 230.0                                    | 0.20                            |
| 330.0                                    | 515D337M010BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 330.0                                    | 0.20                            |
| 470.0                                    | 515D477M010BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 390.0                                    | 0.20                            |
| 1000.0                                   | 515D108M010CD6AE3 | 0.394 x 0.630 [10.0 x 16.0] | 630.0                                    | 0.20                            |
| 2200.0                                   | 515D228M010DG6AE3 | 0.492 x 0.787 [12.5 x 20.0] | 1100.0                                   | 0.20                            |
| 3300.0                                   | 515D338M010DK6AE3 | 0.492 x 0.984 [12.5 x 25.0] | 1400.0                                   | 0.20                            |
| 4700.0                                   | 515D478M010EK6AE3 | 0.630 x 0.984 [16.0 x 25.0] | 1800.0                                   | 0.20                            |
| 6800.0                                   | 515D688M010EN6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 2150.0                                   | 0.20                            |
| 10 000.0                                 | 515D109M010FR6AE3 | 0.709 x 1.398 [18.0 x 35.5] | 2500.0                                   | 0.20                            |
| 15 000.0                                 | 515D159M010FV6AE3 | 0.709 x 1.575 [18.0 x 40.0] | 2720.0                                   | 0.20                            |

**ELECTRICAL DATA AND ORDERING INFORMATION**

| CAPACITANCE<br>( $\mu$ F)               | PART NUMBER       | NOMINAL CASE SIZE<br>D x L  | MAX. RIPPLE<br>AT + 85 °C<br>120 Hz (mA) | MAX. DF<br>AT + 20 °C<br>120 Hz |
|-----------------------------------------|-------------------|-----------------------------|------------------------------------------|---------------------------------|
| <b>16 WVDC at + 85 °C, SURGE = 20 V</b> |                   |                             |                                          |                                 |
| 10.0                                    | 515D106M016JA6AE3 | 0.197 x .433 [5.0 x 11.0]   | 28.0                                     | 0.16                            |
| 22.0                                    | 515D226M016JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 44.0                                     | 0.16                            |
| 33.0                                    | 515D336M016JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 57.0                                     | 0.16                            |
| 47.0                                    | 515D476M016JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 168.0                                    | 0.16                            |
| <b>16 WVDC at + 85 °C, SURGE = 20 V</b> |                   |                             |                                          |                                 |
| 100.0                                   | 515D107M016AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 175.0                                    | 0.16                            |
| 220.0                                   | 515D227M016BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 300.0                                    | 0.16                            |
| 330.0                                   | 515D337M016BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 360.0                                    | 0.16                            |
| 470.0                                   | 515D477M016CC6AE3 | 0.394 x 0.492 [10.0 x 12.5] | 470.0                                    | 0.16                            |
| 1000.0                                  | 515D108M016CG6AE3 | 0.394 x 0.787 [10.0 x 20.0] | 790.0                                    | 0.16                            |
| 2200.0                                  | 515D228M016DK6AE3 | 0.492 x 0.984 [12.5 x 25.0] | 1350.0                                   | 0.16                            |
| 3300.0                                  | 515D338M016EK6AE3 | 0.630 x 0.984 [16.0 x 25.0] | 1700.0                                   | 0.16                            |
| 4700.0                                  | 515D478M016EN6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 2100.0                                   | 0.16                            |
| 6800.0                                  | 515D688M016FR6AE3 | 0.709 x 1.398 [18.0 x 35.5] | 2500.0                                   | 0.16                            |
| 10 000.0                                | 515D109M016FV6AE3 | 0.709 x 1.575 [18.0 x 40.0] | 2640.0                                   | 0.16                            |
| <b>25 WVDC at + 85 °C, SURGE = 32 V</b> |                   |                             |                                          |                                 |
| 4.7                                     | 515D475M025JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 30.0                                     | 0.14                            |
| 10.0                                    | 515D106M025JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 33.0                                     | 0.14                            |
| 22.0                                    | 515D226M025JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 51.0                                     | 0.14                            |
| 33.0                                    | 515D336M025JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 63.0                                     | 0.14                            |
| 47.0                                    | 515D476M025JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 115.0                                    | 0.14                            |
| 100.0                                   | 515D107M025AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 185.0                                    | 0.14                            |
| 220.0                                   | 515D227M025BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 320.0                                    | 0.14                            |
| 330.0                                   | 515D337M025CC6AE3 | 0.394 x 0.492 [10.0 x 12.5] | 420.0                                    | 0.14                            |
| 470.0                                   | 515D477M025CD6AE3 | 0.394 x 0.630 [10.0 x 16.0] | 540.0                                    | 0.14                            |
| 1000.0                                  | 515D108M025DG6AE3 | 0.492 x 0.787 [12.5 x 20.0] | 950.0                                    | 0.14                            |
| 2200.0                                  | 515D228M025EK6AE3 | 0.630 x 0.984 [16.0 x 25.0] | 1550.0                                   | 0.14                            |
| 3300.0                                  | 515D338M025EN6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 1950.0                                   | 0.14                            |
| 4700.0                                  | 515D478M025FR6AE3 | 0.709 x 1.398 [18.0 x 35.5] | 2360.0                                   | 0.14                            |
| <b>35 WVDC at + 85 °C, SURGE = 44 V</b> |                   |                             |                                          |                                 |
| 4.7                                     | 515D475M035JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 24.0                                     | 0.12                            |
| 10.0                                    | 515D106M035JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 36.0                                     | 0.12                            |
| 22.0                                    | 515D226M035JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 57.0                                     | 0.12                            |
| 33.0                                    | 515D336M035JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 105.0                                    | 0.12                            |
| 47.0                                    | 515D476M035AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 140.0                                    | 0.12                            |
| 100.0                                   | 515D107M035BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 230.0                                    | 0.12                            |
| 220.0                                   | 515D227M035CC6AE3 | 0.394 x 0.492 [10.0 x 12.5] | 370.0                                    | 0.12                            |
| 330.0                                   | 515D337M035CD6AE3 | 0.394 x 0.630 [10.0 x 16.0] | 490.0                                    | 0.12                            |
| 470.0                                   | 515D477M035CG6AE3 | 0.394 x 0.787 [10.0 x 20.0] | 640.0                                    | 0.12                            |
| 1000.0                                  | 515D108M035DK6AE3 | 0.492 x 0.984 [12.5 x 25.0] | 1100.0                                   | 0.12                            |
| 2200.0                                  | 515D228M035EN6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 1850.0                                   | 0.12                            |
| 3300.0                                  | 515D338M035FR6AE3 | 0.709 x 1.382 [18.0 x 35.5] | 2220.0                                   | 0.12                            |
| 4700.0                                  | 515D478M035FV6AE3 | 0.709 x 1.575 [18.0 x 40.0] | 2490.0                                   | 0.12                            |
| <b>50 WVDC at + 85 °C, SURGE = 63 V</b> |                   |                             |                                          |                                 |
| 0.1                                     | 515D104M050JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 1.0                                      | 0.10                            |
| 0.22                                    | 515D224M050JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 2.3                                      | 0.10                            |
| 0.33                                    | 515D334M050JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 3.5                                      | 0.10                            |
| 0.47                                    | 515D474M050JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 5.0                                      | 0.10                            |
| 1.0                                     | 515D105M050JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 10.0                                     | 0.10                            |
| 2.2                                     | 515D225M050JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 19.0                                     | 0.10                            |
| 3.3                                     | 515D335M050JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 24.0                                     | 0.10                            |
| 4.7                                     | 515D475M050JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 29.0                                     | 0.10                            |

Aluminum Capacitors  
+ 85 °C, Miniature, Radial Lead

Vishay Sprague

**ELECTRICAL DATA AND ORDERING INFORMATION**

| CAPACITANCE<br>( $\mu$ F)                 | PART NUMBER       | NOMINAL CASE SIZE<br>D x L  | MAX. RIPPLE<br>AT + 85 °C<br>120 Hz (mA) | MAX. DF<br>AT + 20 °C<br>120 Hz |
|-------------------------------------------|-------------------|-----------------------------|------------------------------------------|---------------------------------|
| <b>50 WVDC at + 85 °C, SURGE = 63 V</b>   |                   |                             |                                          |                                 |
| 10.0                                      | 515D106M050JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 44.0                                     | 0.10                            |
| 22.0                                      | 515D226M050JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 95.0                                     | 0.10                            |
| 33.0                                      | 515D336M050AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 125.0                                    | 0.10                            |
| 47.0                                      | 515D476M050AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 150.0                                    | 0.10                            |
| 100.0                                     | 515D107M050BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 250.0                                    | 0.10                            |
| 220.0                                     | 515D227M050CD6AE3 | 0.394 x 0.630 [10.0 x 16.0] | 440.0                                    | 0.10                            |
| 330.0                                     | 515D337M050CG6AE3 | 0.394 x 0.787 [10.0 x 20.0] | 580.0                                    | 0.10                            |
| 470.0                                     | 515D477M050DG6AE3 | 0.492 x 0.787 [12.5 x 20.0] | 760.0                                    | 0.10                            |
| 1000.0                                    | 515D108M050EK6AE3 | 0.630 x 0.984 [16.0 x 25.0] | 1350.0                                   | 0.10                            |
| 2200.0                                    | 515D228M050FR6AE3 | 0.709 x 1.398 [18.0 x 35.5] | 2090.0                                   | 0.10                            |
| <b>63 WVDC at + 85 °C, SURGE = 79 V</b>   |                   |                             |                                          |                                 |
| 4.7                                       | 515D475M063JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 45.0                                     | 0.08                            |
| 10.0                                      | 515D106M063JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 70.0                                     | 0.08                            |
| 22.0                                      | 515D226M063AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 115.0                                    | 0.08                            |
| 33.0                                      | 515D336M063AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 140.0                                    | 0.08                            |
| 47.0                                      | 515D476M063BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 190.0                                    | 0.08                            |
| 100.0                                     | 515D107M063CC6AE3 | 0.394 x 0.492 [10.0 x 12.5] | 300.0                                    | 0.08                            |
| 220.0                                     | 515D227M063CG6AE3 | 0.394 x 0.787 [10.0 x 20.0] | 490.0                                    | 0.08                            |
| 330.0                                     | 515D337M063DG6AE3 | 0.492 x 0.787 [12.5 x 20.0] | 680.0                                    | 0.08                            |
| 470.0                                     | 515D477M063DK6AE3 | 0.492 x 0.984 [12.5 x 25.0] | 880.0                                    | 0.08                            |
| 1000.0                                    | 515D108M063EN6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 1550.0                                   | 0.08                            |
| 2200.0                                    | 515D228M063FV6AE3 | 0.709 x 1.575 [18.0 x 40.0] | 2200.0                                   | 0.08                            |
| <b>100 WVDC at + 85 °C, SURGE = 125 V</b> |                   |                             |                                          |                                 |
| 0.1                                       | 515D104M100JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 2.1                                      | 0.08                            |
| 0.22                                      | 515D224M100JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 4.7                                      | 0.08                            |
| 0.33                                      | 515D334M100JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 7.0                                      | 0.08                            |
| 0.47                                      | 515D474M100JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 10.0                                     | 0.08                            |
| 1.0                                       | 515D105M100JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 21.0                                     | 0.08                            |
| 2.2                                       | 515D225M100JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 30.0                                     | 0.08                            |
| 3.3                                       | 515D335M100JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 40.0                                     | 0.08                            |
| 4.7                                       | 515D475M100JA6AE3 | 0.197 x 0.433 [5.0 x 11.0]  | 45.0                                     | 0.08                            |
| 10.0                                      | 515D106M100AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 75.0                                     | 0.08                            |
| 22.0                                      | 515D226M100BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 130.0                                    | 0.08                            |
| 33.0                                      | 515D336M100CC6AE3 | 0.394 x 0.492 [10.0 x 12.5] | 170.0                                    | 0.08                            |
| 47.0                                      | 515D476M100CD6AE3 | 0.394 x 0.630 [10.0 x 16.0] | 230.0                                    | 0.08                            |
| 100.0                                     | 515D107M100DG6AE3 | 0.492 x 0.787 [12.5 x 20.0] | 400.0                                    | 0.08                            |
| 220.0                                     | 515D227M100EK6AE3 | 0.630 x 0.984 [16.0 x 25.0] | 710.0                                    | 0.08                            |
| 330.0                                     | 515D337M100EK6AE3 | 0.630 x 0.984 [16.0 x 25.0] | 860.0                                    | 0.08                            |
| 470.0                                     | 515D477M100EN6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 1100.0                                   | 0.08                            |
| 1000.0                                    | 515D108M100FV6AE3 | 0.709 x 1.575 [18.0 x 40.0] | 1690.0                                   | 0.08                            |
| <b>160 WVDC at + 85 °C, SURGE = 200 V</b> |                   |                             |                                          |                                 |
| 0.47                                      | 515D474M160AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 12.0                                     | 0.20                            |
| 1.0                                       | 515D105M160AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 17.0                                     | 0.20                            |
| 2.2                                       | 515D225M160AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 26.0                                     | 0.20                            |
| 3.3                                       | 515D335M160BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 35.0                                     | 0.20                            |
| 4.7                                       | 515D475M160BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 40.0                                     | 0.20                            |
| 10.0                                      | 515D106M160CC6AE3 | 0.394 x 0.492 [10.0 x 12.5] | 65.0                                     | 0.20                            |
| 22.0                                      | 515D226M160CG6AE3 | 0.394 x 0.787 [10.0 x 20.0] | 110.0                                    | 0.20                            |
| 33.0                                      | 515D336M160DG6AE3 | 0.492 x 0.787 [12.5 x 20.0] | 150.0                                    | 0.20                            |
| 47.0                                      | 515D476M160DK6AE3 | 0.492 x 0.984 [12.5 x 25.0] | 180.0                                    | 0.20                            |
| 100.0                                     | 515D107M160EK6AE3 | 0.630 x 0.984 [16.0 x 25.0] | 300.0                                    | 0.20                            |
| 220.0                                     | 515D227M160FR6AE3 | 0.709 x 1.398 [18.0 x 35.5] | 510.0                                    | 0.20                            |

**ELECTRICAL DATA AND ORDERING INFORMATION**

| CAPACITANCE<br>( $\mu$ F)                 | PART NUMBER       | NOMINAL CASE SIZE<br>D x L  | MAX. RIPPLE<br>AT + 85 °C<br>120 Hz (mA) | MAX. DF<br>AT + 20 °C<br>120 Hz |
|-------------------------------------------|-------------------|-----------------------------|------------------------------------------|---------------------------------|
| <b>200 WVDC at + 85 °C, SURGE = 250 V</b> |                   |                             |                                          |                                 |
| 0.47                                      | 515D474M200AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 12.0                                     | 0.20                            |
| 1.0                                       | 515D105M200AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 17.0                                     | 0.20                            |
| 2.2                                       | 515D225M200AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 26.0                                     | 0.20                            |
| 3.3                                       | 515D335M200BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 35.0                                     | 0.20                            |
| 4.7                                       | 515D475M200CC6AE3 | 0.394 x 0.492 [10.0 x 12.5] | 45.0                                     | 0.20                            |
| 10.0                                      | 515D106M200CD6AE3 | 0.394 x 0.630 [10.0 x 16.0] | 70.0                                     | 0.20                            |
| 22.0                                      | 515D226M200CG6AE3 | 0.394 x 0.787 [10.0 x 20.0] | 110.0                                    | 0.20                            |
| 33.0                                      | 515D336M200DK6AE3 | 0.492 x 0.984 [12.5 x 25.0] | 160.0                                    | 0.20                            |
| 47.0                                      | 515D476M200DK6AE3 | 0.492 x 0.984 [12.5 x 25.0] | 180.0                                    | 0.20                            |
| 100.0                                     | 515D107M200EN6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 330.0                                    | 0.20                            |
| 220.0                                     | 515D227M200FV6AE3 | 0.709 x 1.575 [18.0 x 40.0] | 520.0                                    | 0.20                            |
| <b>250 WVDC at + 85 °C, SURGE = 300 V</b> |                   |                             |                                          |                                 |
| 0.47                                      | 515D474M250AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 12.0                                     | 0.20                            |
| 1.0                                       | 515D105M250AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 17.0                                     | 0.20                            |
| 2.2                                       | 515D225M250BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 30.0                                     | 0.20                            |
| 3.3                                       | 515D335M250CC6AE3 | 0.394 x 0.492 [10.0 x 12.5] | 35.0                                     | 0.20                            |
| 4.7                                       | 515D475M250CC6AE3 | 0.394 x 0.492 [10.0 x 12.5] | 45.0                                     | 0.20                            |
| 10.0                                      | 515D106M250CG6AE3 | 0.394 x 0.787 [10.0 x 20.0] | 70.0                                     | 0.20                            |
| 33.0                                      | 515D336M250DK6AE3 | 0.492 x 0.984 [12.5 x 25.0] | 160.0                                    | 0.20                            |
| 47.0                                      | 515D476M250EK6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 210.0                                    | 0.20                            |
| 100.0                                     | 515D107M250FR6AE3 | 0.709 x 1.575 [18.0 x 40.0] | 340.0                                    | 0.20                            |
| <b>315 WVDC at + 85 °C, SURGE = 365 V</b> |                   |                             |                                          |                                 |
| 1.0                                       | 515D105M315AA6AE3 | 0.248 x 0.433 [6.3 x 11.0]  | 17.0                                     | 0.20                            |
| 2.2                                       | 515D225M315BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 30.0                                     | 0.20                            |
| 3.3                                       | 515D335M315CC6AE3 | 0.394 x 0.492 [10.0 x 12.5] | 35.0                                     | 0.20                            |
| 4.7                                       | 515D475M315CD6AE3 | 0.394 x 0.630 [10.0 x 16.0] | 45.0                                     | 0.20                            |
| 10.0                                      | 515D106M315CG6AE3 | 0.394 x 0.787 [10.0 x 20.0] | 70.0                                     | 0.20                            |
| 22.0                                      | 515D226M315DK6AE3 | 0.492 x 0.984 [12.5 x 25.0] | 120.0                                    | 0.20                            |
| 33.0                                      | 515D336M315EK6AE3 | 0.630 x 0.984 [16.0 x 25.0] | 150.0                                    | 0.20                            |
| 47.0                                      | 515D476M315EN6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 190.0                                    | 0.20                            |
| 100.0                                     | 515D107M315FV6AE3 | 0.709 x 1.575 [18.0 x 40.0] | 340.0                                    | 0.20                            |
| <b>350 WVDC at + 85 °C, SURGE = 400 V</b> |                   |                             |                                          |                                 |
| 1.0                                       | 515D105M350BB6AE3 | 0.315 x .453 [8.0 x 11.5]   | 18.0                                     | 0.25                            |
| 2.2                                       | 515D225M350CC6AE3 | 0.394 x .492 [10.0 x 12.5]  | 28.0                                     | 0.25                            |
| 3.3                                       | 515D335M350CD6AE3 | 0.394 x .630 [10.0 x 16.0]  | 35.0                                     | 0.25                            |
| 4.7                                       | 515D475M350CD6AE3 | 0.394 x .630 [10.0 x 16.0]  | 40.0                                     | 0.25                            |
| 10.0                                      | 515D106M350DG6AE3 | 0.492 x .787 [12.5 x 20.0]  | 70.0                                     | 0.25                            |
| 22.0                                      | 515D226M350DK6AE3 | 0.492 x .984 [12.5 x 25.0]  | 110.0                                    | 0.25                            |
| 33.0                                      | 515D336M350EN6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 140.0                                    | 0.25                            |
| 47.0                                      | 515D476M350FR6AE3 | 0.709 x 1.398 [18.0 x 35.5] | 220.0                                    | 0.25                            |
| <b>400 WVDC at + 85 °C, SURGE = 450 V</b> |                   |                             |                                          |                                 |
| 1.0                                       | 515D105M400BB6AE3 | 0.315 x 0.453 [8.0 x 11.5]  | 18.0                                     | 0.25                            |
| 2.2                                       | 515D225M400CC6AE3 | 0.394 x 0.492 [10.0 x 12.5] | 28.0                                     | 0.25                            |
| 3.3                                       | 515D335M400CD6AE3 | 0.394 x 0.630 [10.0 x 16.0] | 35.0                                     | 0.25                            |
| 4.7                                       | 515D475M400CD6AE3 | 0.394 x 0.787 [10.0 x 20.0] | 45.0                                     | 0.25                            |
| 10.0                                      | 515D106M400DG6AE3 | 0.492 x 0.787 [12.5 x 20.0] | 70.0                                     | 0.25                            |
| 22.0                                      | 515D226M400DK6AE3 | 0.630 x 0.984 [16.0 x 25.0] | 110.0                                    | 0.25                            |
| 33.0                                      | 515D336M400EN6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 140.0                                    | 0.25                            |
| 47.0                                      | 515D476M400FR6AE3 | 0.709 x 1.398 [18.0 x 35.5] | 220.0                                    | 0.25                            |



Aluminum Capacitors  
+ 85 °C, Miniature, Radial Lead

Vishay Sprague

**ELECTRICAL DATA AND ORDERING INFORMATION**

| CAPACITANCE<br>( $\mu$ F)          | PART NUMBER       | NOMINAL CASE SIZE<br>D x L  | MAX. RIPPLE<br>AT + 85 °C<br>120 Hz (mA) | MAX. DF<br>AT + 20 °C<br>120 Hz |
|------------------------------------|-------------------|-----------------------------|------------------------------------------|---------------------------------|
| 450 WVDC at + 85 °C, SURGE = 500 V |                   |                             |                                          |                                 |
| 1.0                                | 515D105M450CC6AE3 | 0.394 x 0.492 [10.0 x 12.5] | 19.0                                     | 0.25                            |
| 2.2                                | 515D225M450CD6AE3 | 0.394 x 0.630 [10.0 x 16.0] | 29.0                                     | 0.25                            |
| 4.7                                | 515D475M450DG6AE3 | 0.492 x 0.787 [12.5 x 20.0] | 50.0                                     | 0.25                            |
| 10.0                               | 515D106M450EK6AE3 | 0.492 x 0.984 [12.5 x 25.0] | 75.0                                     | 0.25                            |
| 22.0                               | 515D226M450EN6AE3 | 0.630 x 1.240 [16.0 x 31.5] | 110.0                                    | 0.25                            |
| 33.0                               | 515D336M450FR6AE3 | 0.709 x 1.398 [18.0 x 35.5] | 170.0                                    | 0.25                            |

**LOW PROFILE RATINGS** in inches [millimeters]

| CAPACITANCE<br>( $\mu$ F)        | PART NUMBER       | NOMINAL CASE SIZE<br>D x L | MAX. RIPPLE<br>AT + 85 °C<br>120 Hz (mA) | MAX. DF<br>AT + 20 °C<br>120 Hz |
|----------------------------------|-------------------|----------------------------|------------------------------------------|---------------------------------|
| 6.3 WVDC at + 85 °C, SURGE = 8 V |                   |                            |                                          |                                 |
| 22.0                             | 515D226M6R3HW6AE3 | 0.157 x 0.276 [4.0 x 7.0]  | 34.0                                     | 0.24                            |
| 33.0                             | 515D336M6R3JW6AE3 | 0.197 x 0.276 [5.0 x 7.0]  | 42.0                                     | 0.24                            |
| 47.0                             | 515D476M6R3JW6AE3 | 0.197 x 0.276 [5.0 x 7.0]  | 50.0                                     | 0.24                            |
| 100.0                            | 515D107M6R3AW6AE3 | 0.248 x 0.276 [6.3 x 7.0]  | 77.0                                     | 0.24                            |
| 10 WVDC at + 85 °C, SURGE = 13 V |                   |                            |                                          |                                 |
| 22.0                             | 515D226M010JW6AE3 | 0.197 x 0.276 [5.0 x 7.0]  | 38.0                                     | 0.20                            |
| 33.0                             | 515D336M010JW6AE3 | 0.197 x 0.276 [5.0 x 7.0]  | 47.0                                     | 0.20                            |
| 47.0                             | 515D476M010AW6AE3 | 0.248 x 0.276 [6.3 x 7.0]  | 59.0                                     | 0.20                            |
| 16 WVDC at + 85 °C, SURGE = 20 V |                   |                            |                                          |                                 |
| 10.0                             | 515D106M016HW6AE3 | 0.157 x 0.276 [4.0 x 7.0]  | 28.0                                     | 0.16                            |
| 22.0                             | 515D226M016JW6AE3 | 0.197 x 0.276 [5.0 x 7.0]  | 44.0                                     | 0.16                            |
| 33.0                             | 515D336M016AW6AE3 | 0.248 x 0.276 [6.3 x 7.0]  | 57.0                                     | 0.16                            |
| 47.0                             | 515D476M016AW6AE3 | 0.248 x 0.276 [6.3 x 7.0]  | 68.0                                     | 0.16                            |
| 25 WVDC at + 85 °C, SURGE = 32 V |                   |                            |                                          |                                 |
| 10.0                             | 515D106M025JW6AE3 | 0.197 x 0.276 [5.0 x 7.0]  | 33.0                                     | 0.14                            |
| 22.0                             | 515D226M025AW6AE3 | 0.248 x 0.276 [6.3 x 7.0]  | 51.0                                     | 0.14                            |
| 33.0                             | 515D336M025AW6AE3 | 0.248 x 0.276 [6.3 x 7.0]  | 63.0                                     | 0.14                            |
| 35 WVDC at + 85 °C, SURGE = 44 V |                   |                            |                                          |                                 |
| 4.7                              | 515D475M035HW6AE3 | 0.157 x 0.276 [4.0 x 7.0]  | 24.0                                     | 0.12                            |
| 10.0                             | 515D106M035JW6AE3 | 0.197 x 0.276 [5.0 x 7.0]  | 36.0                                     | 0.12                            |
| 22.0                             | 515D226M035AW6AE3 | 0.248 x 0.276 [6.3 x 7.0]  | 57.0                                     | 0.12                            |
| 50 WVDC at + 85 °C, SURGE = 63 V |                   |                            |                                          |                                 |
| 0.1                              | 515D104M050JW6AE3 | 0.157 x 0.276 [4.0 x 7.0]  | 1.0                                      | 0.10                            |
| 0.22                             | 515D224M050HW6AE3 | 0.157 x 0.276 [4.0 x 7.0]  | 2.3                                      | 0.10                            |
| 0.33                             | 515D334M050HW6AE3 | 0.157 x 0.276 [4.0 x 7.0]  | 3.5                                      | 0.10                            |
| 0.47                             | 515D474M050HW6AE3 | 0.157 x 0.276 [4.0 x 7.0]  | 5.0                                      | 0.10                            |
| 1.0                              | 515D105M050HW6AE3 | 0.157 x 0.276 [4.0 x 7.0]  | 10.0                                     | 0.10                            |
| 2.2                              | 515D225M050HW6AE3 | 0.157 x 0.276 [4.0 x 7.0]  | 19.0                                     | 0.10                            |
| 3.3                              | 515D335M050HW6AE3 | 0.157 x 0.276 [4.0 x 7.0]  | 24.0                                     | 0.10                            |
| 4.7                              | 515D475M050JW6AE3 | 0.197 x 0.276 [5.0 x 7.0]  | 29.0                                     | 0.10                            |
| 10.0                             | 515D106M050AW6AE3 | 0.248 x 0.276 [6.3 x 7.0]  | 44.0                                     | 0.10                            |





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