

## Wet Tantalum Capacitors Cylindrical Body, Hermetically Sealed



### FEATURES

- High temperature
- High voltage
- High capacitance
- Withstands high frequency vibration to 2000 Hz
- Hermetically sealed
- Long shelf life
- DSCC drawings 04032 and 04033

### PERFORMANCE CHARACTERISTICS

**Operating Temperature:** - 55 °C to + 175 °C with proper derating

**Voltage Range:** 8 V<sub>DC</sub> to 630 V<sub>DC</sub> at 85 °C

**Reverse Voltage:** None

**Capacitance Range:** 2 µF to 2200 µF

#### Tolerance Range:

- 15 % to + 50 % (standard for XTK, XTM, XTV)
- 15 % to + 75 % (standard for XTH, XTL)
- ± 20 % (special order)

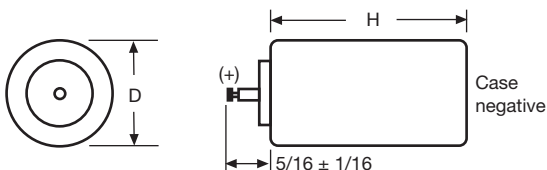
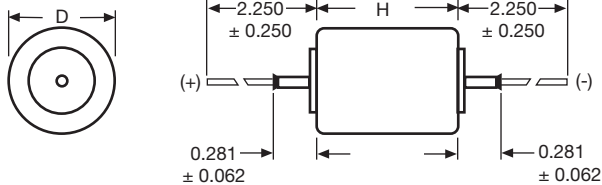
### ORDERING INFORMATION

| XTV<br>MODEL                    | 126<br>CAPACITANCE<br>CODE                                                                                                     | T<br>CAPACITANCE<br>TOLERANCE                                                                                           | 630<br>DC VOLTAGE<br>RATING                                                                      | P<br>CASE CODE                                                    | 0<br>INSULATION                                           | A<br>TERMINAL<br>CONFIGURATION |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------|
| XTH<br>XTK<br>XTL<br>XTM<br>XTV | This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow. | T = - 15 % to + 50 % (XTK, XTM, XTV standard)<br>U = - 15 % to + 75 % (XTH, XTL standard)<br>M = ± 20 % (special order) | This is expressed in volts. To complete the three-digit block, zeros precede the voltage rating. | P = Polar (case negative)<br>R = Reverse polarity (case positive) | 0 = Uninsulated (standard)<br>4 = Teflon (+ 175 °C limit) | See Styles                     |

#### Note

- For styles, terminal configurations, mounting methods and hardware, please see pages following standard ratings table

### DIMENSIONS in inches [millimeters]

| XTH-XTL-XTV                                                                         |       | XTK-XTM                                                                              |
|-------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------|
|  |       |  |
| TYPE                                                                                | D     | H                                                                                    |
| XTK - XTM                                                                           | 0.656 | 0.438 to 1.781                                                                       |
| XTL - XTH                                                                           | 0.875 | 0.540 to 4.062                                                                       |
| XTV                                                                                 | 1.125 | 0.600 to 2.810                                                                       |



## STANDARD RATINGS AND DIMENSIONS

| CAPACITANCE                   | MAX.<br>WORKING<br>VOLTAGE | TYP.<br>ESR | MAX. DCL AT<br>MAX. V <sub>DC</sub><br>(μA) |     |     | MAX.<br>Z<br>- 55 °C | MAX. % CAP.<br>CHANGE FROM<br>ROOM TEMP. |      |      | APPROX.<br>WEIGHT | MAX.<br>RIPPLE<br>120 Hz<br>RMS<br>- 55 °C<br>TO<br>+ 175 °C | SIZE                    |                         | PART<br>NUMBER |                 |
|-------------------------------|----------------------------|-------------|---------------------------------------------|-----|-----|----------------------|------------------------------------------|------|------|-------------------|--------------------------------------------------------------|-------------------------|-------------------------|----------------|-----------------|
|                               |                            |             |                                             |     |     |                      |                                          |      |      |                   |                                                              | D<br>+ 0.031<br>- 0.015 | H<br>+ 0.062<br>- 0.062 |                |                 |
| (μF)                          | + 125 °C + 175 °C          | (Ω)         | + 85 °C + 125 °C + 175 °C                   |     |     | (Ω)                  | - 55 °C + 85 °C + 175 °C                 |      |      | (g)               | (mA)                                                         |                         |                         |                |                 |
| 8 V <sub>DC</sub> AT + 85 °C  |                            |             |                                             |     |     |                      |                                          |      |      |                   |                                                              |                         |                         |                |                 |
| 70                            | 7                          | 5           | 10.0                                        | 30  | 45  | 60                   | 60                                       | - 60 | + 30 | + 30              | 14                                                           | 137                     | 0.656                   | 0.438          | XTK706(1)008P0A |
| 140                           | 7                          | 5           | 5.0                                         | 50  | 75  | 100                  | 30                                       | - 60 | + 30 | + 30              | 15                                                           | 213                     | 0.656                   | 0.562          | XTM147(1)008P0A |
| 10 V <sub>DC</sub> AT + 85 °C |                            |             |                                             |     |     |                      |                                          |      |      |                   |                                                              |                         |                         |                |                 |
| 50                            | 8.5                        | 7           | 10.0                                        | 25  | 37  | 50                   | 75                                       | - 60 | + 30 | + 30              | 14                                                           | 137                     | 0.656                   | 0.438          | XTK506(1)010P0A |
| 100                           | 8.5                        | 7           | 5.0                                         | 45  | 67  | 90                   | 40                                       | - 60 | + 30 | + 30              | 15                                                           | 213                     | 0.656                   | 0.562          | XTM107(1)010P0A |
| 12 V <sub>DC</sub> AT + 85 °C |                            |             |                                             |     |     |                      |                                          |      |      |                   |                                                              |                         |                         |                |                 |
| 580                           | 10                         | 8           | 1.5                                         | 135 | 197 | 270                  | 20                                       | - 90 | + 20 | + 35              | 48                                                           | 550                     | 1.125                   | 0.600          | XTV587(1)012P0A |
| 850                           | 10                         | 8           | 1.5                                         | 135 | 197 | 270                  | 20                                       | - 90 | + 20 | + 35              | 50                                                           | 550                     | 1.125                   | 0.600          | XTV857(1)012P0A |
| 1100                          | 10                         | 8           | 1.5                                         | 135 | 197 | 270                  | 20                                       | - 90 | + 20 | + 35              | 60                                                           | 694                     | 1.125                   | 1.100          | XTV118(1)012P0A |
| 2200                          | 10                         | 8           | 1.5                                         | 135 | 197 | 270                  | 20                                       | - 90 | + 20 | + 35              | 82                                                           | 694                     | 1.125                   | 1.100          | XTV228(1)012P0A |
| 18 V <sub>DC</sub> AT + 85 °C |                            |             |                                             |     |     |                      |                                          |      |      |                   |                                                              |                         |                         |                |                 |
| 35                            | 15                         | 12          | 10.0                                        | 30  | 45  | 60                   | 85                                       | - 60 | + 30 | + 30              | 14                                                           | 137                     | 0.656                   | 0.438          | XTK356(1)018P0A |
| 70                            | 15                         | 12          | 5.0                                         | 50  | 75  | 100                  | 45                                       | - 60 | + 30 | + 30              | 15                                                           | 213                     | 0.656                   | 0.562          | XTM706(1)018P0A |
| 120                           | 15                         | 12          | 2.8                                         | 50  | 75  | 100                  | 30                                       | - 60 | + 15 | + 40              | 26                                                           | 328                     | 0.875                   | 0.540          | XTL127(1)018P0A |
| 240                           | 15                         | 12          | 2.5                                         | 80  | 120 | 160                  | 20                                       | - 60 | + 15 | + 40              | 32                                                           | 390                     | 0.875                   | 0.732          | XTH247(1)018P0A |
| 390                           | 15                         | 12          | 1.5                                         | 165 | 227 | 330                  | 20                                       | - 85 | + 20 | + 35              | 48                                                           | 550                     | 1.125                   | 0.600          | XTV397(1)018P0A |
| 560                           | 15                         | 12          | 1.5                                         | 165 | 227 | 330                  | 20                                       | - 85 | + 20 | + 35              | 50                                                           | 550                     | 1.125                   | 0.600          | XTV567(1)018P0A |
| 900                           | 15                         | 12          | 1.5                                         | 165 | 227 | 330                  | 20                                       | - 85 | + 20 | + 35              | 68                                                           | 694                     | 1.125                   | 1.100          | XTV907(1)018P0A |
| 1800                          | 15                         | 12          | 1.5                                         | 165 | 227 | 330                  | 20                                       | - 85 | + 20 | + 35              | 82                                                           | 694                     | 1.125                   | 1.100          | XTV188(1)018P0A |
| 20 V <sub>DC</sub> AT + 85 °C |                            |             |                                             |     |     |                      |                                          |      |      |                   |                                                              |                         |                         |                |                 |
| 28                            | 17.5                       | 13          | 10.0                                        | 30  | 45  | 60                   | 85                                       | - 60 | + 30 | + 30              | 14                                                           | 137                     | 0.656                   | 0.438          | XTK286(1)020P0A |
| 56                            | 17.5                       | 13          | 5.0                                         | 50  | 75  | 100                  | 45                                       | - 60 | + 30 | + 30              | 15                                                           | 213                     | 0.656                   | 0.562          | XTM566(1)020P0A |
| 100                           | 17.5                       | 13          | 2.8                                         | 50  | 75  | 100                  | 30                                       | - 60 | + 15 | + 40              | 26                                                           | 328                     | 0.875                   | 0.540          | XTL107(1)020P0A |
| 200                           | 17.5                       | 13          | 2.5                                         | 80  | 120 | 160                  | 20                                       | - 60 | + 15 | + 40              | 32                                                           | 390                     | 0.875                   | 0.732          | XTH207(1)020P0A |
| 30 V <sub>DC</sub> AT + 85 °C |                            |             |                                             |     |     |                      |                                          |      |      |                   |                                                              |                         |                         |                |                 |
| 20                            | 25                         | 20          | 10.0                                        | 35  | 52  | 70                   | 125                                      | - 40 | + 20 | + 20              | 14                                                           | 137                     | 0.656                   | 0.438          | XTK206(1)030P0A |
| 40                            | 25                         | 20          | 5.0                                         | 60  | 90  | 120                  | 75                                       | - 40 | + 20 | + 20              | 15                                                           | 213                     | 0.656                   | 0.562          | XTM406(1)030P0A |
| 75                            | 25                         | 20          | 2.7                                         | 55  | 82  | 110                  | 45                                       | - 45 | + 15 | + 30              | 26                                                           | 333                     | 0.875                   | 0.540          | XTL756(1)030P0A |
| 150                           | 25                         | 20          | 2.7                                         | 90  | 135 | 180                  | 30                                       | - 45 | + 15 | + 30              | 32                                                           | 375                     | 0.875                   | 0.732          | XTH157(1)030P0A |
| 250                           | 25                         | 20          | 2.5                                         | 195 | 287 | 390                  | 20                                       | - 65 | + 20 | + 35              | 48                                                           | 427                     | 1.125                   | 0.600          | XTV257(1)030P0A |
| 370                           | 25                         | 20          | 1.5                                         | 125 | 170 | 215                  | 15                                       | - 65 | + 20 | + 35              | 50                                                           | 550                     | 1.125                   | 0.600          | XTV377(1)030P0A |
| 650                           | 25                         | 20          | 1.5                                         | 145 | 202 | 250                  | 15                                       | - 85 | + 20 | + 35              | 68                                                           | 694                     | 1.125                   | 1.100          | XTV657(1)030P0A |
| 1300                          | 25                         | 20          | 1.5                                         | 190 | 282 | 375                  | 10                                       | - 85 | + 20 | + 35              | 82                                                           | 694                     | 1.125                   | 1.100          | XTV138(1)030P0A |
| 35 V <sub>DC</sub> AT + 85 °C |                            |             |                                             |     |     |                      |                                          |      |      |                   |                                                              |                         |                         |                |                 |
| 20                            | 30                         | 23          | 10.0                                        | 35  | 52  | 72                   | 125                                      | - 40 | + 20 | + 20              | 14                                                           | 137                     | 0.656                   | 0.438          | XTK206(1)035P0A |
| 40                            | 30                         | 23          | 5.0                                         | 60  | 90  | 120                  | 75                                       | - 40 | + 20 | + 20              | 15                                                           | 213                     | 0.656                   | 0.562          | XTM406(1)035P0A |
| 60                            | 30                         | 23          | 2.7                                         | 55  | 82  | 110                  | 45                                       | - 45 | + 10 | + 30              | 26                                                           | 333                     | 0.875                   | 0.540          | XTL606(1)035P0A |

## Note

- Part number definitions:
  - (1) Tolerance code:
    - T = - 15 % to + 50 % (standard for XTK, XTM, XTV)
    - U = - 15 % to + 75 % (standard for XTH, XTL)
    - M =  $\pm$  20 % (available by special order)



## STANDARD RATINGS AND DIMENSIONS

| CAPACITANCE                    | MAX.<br>WORKING<br>VOLTAGE | TYP.<br>ESR | MAX. DCL AT<br>MAX. V <sub>DC</sub><br>(μA) |     | MAX.<br>Z<br>- 55 °C | MAX. % CAP.<br>CHANGE FROM<br>ROOM TEMP. |     | APPROX.<br>WEIGHT | MAX.<br>RIPPLE<br>120 Hz<br>RMS<br>- 55 °C<br>TO<br>+ 175 °C | SIZE               |                    | PART<br>NUMBER |       |       |                 |
|--------------------------------|----------------------------|-------------|---------------------------------------------|-----|----------------------|------------------------------------------|-----|-------------------|--------------------------------------------------------------|--------------------|--------------------|----------------|-------|-------|-----------------|
|                                |                            |             |                                             |     |                      |                                          |     |                   |                                                              | D                  | H                  |                |       |       |                 |
|                                |                            |             |                                             |     |                      |                                          |     |                   |                                                              | + 0.031<br>- 0.015 | + 0.062<br>- 0.062 |                |       |       |                 |
| (μF)                           | + 125 °C + 175 °C          | (Ω)         | + 85 °C + 125 °C + 175 °C                   |     | (Ω)                  | - 55 °C + 85 °C + 175 °C                 |     | (g)               | (mA)                                                         |                    |                    |                |       |       |                 |
| 40 V <sub>DC</sub> AT + 85 °C  |                            |             |                                             |     |                      |                                          |     |                   |                                                              |                    |                    |                |       |       |                 |
| 190                            | 34                         | 27          | 2.5                                         | 195 | 297                  | 400                                      | 20  | - 55              | + 20                                                         | + 35               | 48                 | 427            | 1.125 | 0.600 | XTV197(1)040P0A |
| 290                            | 34                         | 27          | 2.5                                         | 200 | 300                  | 400                                      | 20  | - 55              | + 20                                                         | + 35               | 50                 | 427            | 1.125 | 0.600 | XTV297(1)040P0A |
| 500                            | 34                         | 27          | 1.5                                         | 200 | 300                  | 400                                      | 20  | - 75              | + 20                                                         | + 35               | 68                 | 694            | 1.125 | 1.100 | XTV507(1)040P0A |
| 1000                           | 34                         | 27          | 1.5                                         | 195 | 297                  | 400                                      | 20  | - 75              | + 20                                                         | + 35               | 82                 | 694            | 1.125 | 1.100 | XTV108(1)040P0A |
| 50 V <sub>DC</sub> AT + 85 °C  |                            |             |                                             |     |                      |                                          |     |                   |                                                              |                    |                    |                |       |       |                 |
| 900                            | 44                         | 32          | 1.5                                         | 195 | 297                  | 400                                      | 25  | - 85              | + 20                                                         | + 35               | 82                 | 694            | 1.125 | 1.100 | XTV907(1)050P0A |
| 60 V <sub>DC</sub> AT + 85 °C  |                            |             |                                             |     |                      |                                          |     |                   |                                                              |                    |                    |                |       |       |                 |
| 12                             | 50                         | 40          | 10.0                                        | 35  | 52                   | 70                                       | 180 | - 30              | + 20                                                         | + 20               | 14                 | 137            | 0.656 | 0.438 | XTK126(1)060P0A |
| 25                             | 50                         | 40          | 5.0                                         | 60  | 90                   | 120                                      | 90  | - 30              | + 20                                                         | + 20               | 15                 | 213            | 0.656 | 0.562 | XTM256(1)060P0A |
| 40                             | 50                         | 40          | 2.7                                         | 60  | 90                   | 120                                      | 65  | - 35              | + 10                                                         | + 20               | 26                 | 333            | 0.875 | 0.540 | XTL406(1)060P0A |
| 70                             | 50                         | 40          | 2.7                                         | 90  | 135                  | 180                                      | 40  | - 35              | + 10                                                         | + 20               | 32                 | 375            | 0.875 | 0.732 | XTH706(1)060P0A |
| 80                             | 50                         | 40          | 2.7                                         | 95  | 142                  | 190                                      | 35  | - 35              | + 10                                                         | + 20               | 32                 | 375            | 0.875 | 0.732 | XTH806(1)060P0A |
| 130                            | 50                         | 40          | 2.5                                         | 210 | 315                  | 420                                      | 30  | - 50              | + 20                                                         | + 35               | 48                 | 427            | 1.125 | 0.600 | XTV137(1)060P0A |
| 200                            | 50                         | 40          | 1.5                                         | 135 | 182                  | 230                                      | 30  | - 50              | + 20                                                         | + 35               | 50                 | 550            | 1.125 | 0.600 | XTV207(1)060P0A |
| 350                            | 50                         | 40          | 1.5                                         | 155 | 210                  | 265                                      | 25  | - 70              | + 20                                                         | + 35               | 68                 | 694            | 1.125 | 1.100 | XTV357(1)060P0A |
| 700                            | 50                         | 40          | 1.5                                         | 200 | 275                  | 350                                      | 15  | - 70              | + 20                                                         | + 35               | 82                 | 694            | 1.125 | 1.100 | XTV707(1)060P0A |
| 750                            | 50                         | 40          | 1.5                                         | 200 | 275                  | 350                                      | 29  | - 70              | + 20                                                         | + 35               | 82                 | 694            | 1.125 | 1.100 | XTV757(1)060P0A |
| 90 V <sub>DC</sub> AT + 85 °C  |                            |             |                                             |     |                      |                                          |     |                   |                                                              |                    |                    |                |       |       |                 |
| 8.0                            | 80                         | 60          | 10.0                                        | 35  | 52                   | 70                                       | 250 | - 30              | + 20                                                         | + 20               | 14                 | 137            | 0.656 | 0.438 | XTK805(1)090P0A |
| 16                             | 80                         | 60          | 5.0                                         | 60  | 90                   | 120                                      | 125 | - 30              | + 20                                                         | + 20               | 15                 | 213            | 0.656 | 0.562 | XTM166(1)090P0A |
| 25                             | 80                         | 60          | 2.7                                         | 55  | 82                   | 110                                      | 90  | - 35              | + 10                                                         | + 20               | 26                 | 333            | 0.875 | 0.540 | XTL256(1)090P0A |
| 50                             | 80                         | 60          | 2.7                                         | 90  | 135                  | 180                                      | 45  | - 35              | + 10                                                         | + 20               | 32                 | 375            | 0.875 | 0.732 | XTH506(1)090P0A |
| 84                             | 80                         | 60          | 2.5                                         | 195 | 287                  | 390                                      | 40  | - 40              | + 20                                                         | + 35               | 48                 | 427            | 1.125 | 0.600 | XTV846(1)090P0A |
| 120                            | 80                         | 60          | 1.5                                         | 135 | 182                  | 230                                      | 40  | - 40              | + 20                                                         | + 35               | 50                 | 550            | 1.125 | 0.600 | XTV127(1)090P0A |
| 220                            | 80                         | 60          | 1.5                                         | 145 | 202                  | 250                                      | 30  | - 60              | + 20                                                         | + 35               | 68                 | 694            | 1.125 | 1.100 | XTV227(1)090P0A |
| 450                            | 80                         | 60          | 1.5                                         | 195 | 215                  | 235                                      | 25  | - 60              | + 20                                                         | + 35               | 82                 | 694            | 1.125 | 1.100 | XTV457(1)090P0A |
| 180 V <sub>DC</sub> AT + 85 °C |                            |             |                                             |     |                      |                                          |     |                   |                                                              |                    |                    |                |       |       |                 |
| 2.0                            | 160                        | 120         | 20.0                                        | 75  | 112                  | 150                                      | 850 | - 30              | + 20                                                         | + 20               | 21                 | 108            | 0.656 | 0.719 | XTK205(1)180P0A |
| 4.0                            | 160                        | 120         | 20.0                                        | 35  | 52                   | 70                                       | 500 | - 30              | + 20                                                         | + 20               | 21                 | 117            | 0.656 | 0.719 | XTK405(1)180P0A |
| 8.0                            | 160                        | 120         | 10.0                                        | 60  | 90                   | 120                                      | 250 | - 30              | + 20                                                         | + 20               | 23                 | 186            | 0.656 | 0.938 | XTM805(1)180P0A |
| 12                             | 160                        | 120         | 5.6                                         | 55  | 82                   | 110                                      | 180 | - 35              | + 10                                                         | + 20               | 44                 | 282            | 0.875 | 0.920 | XTL126(1)180P0A |
| 25                             | 160                        | 120         | 5.3                                         | 90  | 135                  | 180                                      | 90  | - 35              | + 10                                                         | + 20               | 56                 | 341            | 0.875 | 1.300 | XTH256(1)180P0A |
| 42                             | 160                        | 120         | 5.0                                         | 120 | 162                  | 205                                      | 75  | - 40              | + 20                                                         | + 35               | 74                 | 363            | 1.125 | 0.976 | XTV426(1)180P0A |
| 60                             | 160                        | 120         | 3.0                                         | 135 | 182                  | 230                                      | 60  | - 40              | + 20                                                         | + 35               | 78                 | 363            | 1.125 | 0.976 | XTV606(1)180P0A |
| 110                            | 160                        | 120         | 3.0                                         | 145 | 202                  | 250                                      | 60  | - 60              | + 20                                                         | + 35               | 114                | 631            | 1.125 | 1.938 | XTV117(1)180P0A |
| 230                            | 160                        | 120         | 3.0                                         | 200 | 275                  | 350                                      | 50  | - 60              | + 20                                                         | + 35               | 142                | 631            | 1.125 | 1.938 | XTV237(1)180P0A |

## Note

- Part number definitions:
  - (1) Tolerance code:
    - T = - 15 % to + 50 % (standard for XTK, XTM, XTV)
    - U = - 15 % to + 75 % (standard for XTH, XTL)
    - M =  $\pm$  20 % (available by special order)



## STANDARD RATINGS AND DIMENSIONS

| CAPACITANCE                    | MAX.<br>WORKING<br>VOLTAGE | TYP.<br>ESR | MAX. DCL AT<br>MAX. V <sub>DC</sub><br>(μA) |     | MAX.<br>Z<br>- 55 °C     | MAX. % CAP.<br>CHANGE FROM<br>ROOM TEMP. |      | APPROX.<br>WEIGHT | MAX.<br>RIPPLE<br>120 Hz<br>RMS<br>- 55 °C<br>TO<br>+ 175 °C | SIZE               |                    | PART<br>NUMBER |       |       |                 |
|--------------------------------|----------------------------|-------------|---------------------------------------------|-----|--------------------------|------------------------------------------|------|-------------------|--------------------------------------------------------------|--------------------|--------------------|----------------|-------|-------|-----------------|
|                                |                            |             |                                             |     |                          |                                          |      |                   |                                                              | D                  | H                  |                |       |       |                 |
|                                |                            |             |                                             |     |                          |                                          |      |                   |                                                              | + 0.031<br>- 0.015 | + 0.062<br>- 0.062 |                |       |       |                 |
| (μF)                           | + 125 °C + 175 °C          | (Ω)         | + 85 °C + 125 °C + 175 °C                   | (Ω) | - 55 °C + 85 °C + 175 °C | (g)                                      | (mA) |                   |                                                              |                    |                    |                |       |       |                 |
| 270 V <sub>DC</sub> AT + 85 °C |                            |             |                                             |     |                          |                                          |      |                   |                                                              |                    |                    |                |       |       |                 |
| 2.5                            | 240                        | 180         | 30.0                                        | 35  | 52                       | 70                                       | 750  | - 30              | + 20                                                         | + 20               | 28                 | 112            | 0.656 | 1.031 | XTK255(1)270P0A |
| 5.0                            | 240                        | 180         | 15.0                                        | 55  | 82                       | 110                                      | 375  | - 30              | + 20                                                         | + 20               | 31                 | 179            | 0.656 | 1.375 | XTM505(1)270P0A |
| 8.0                            | 240                        | 180         | 8.3                                         | 55  | 82                       | 110                                      | 270  | - 35              | + 10                                                         | + 20               | 62                 | 266            | 0.875 | 1.270 | XTL805(1)270P0A |
| 16                             | 240                        | 180         | 8.3                                         | 90  | 135                      | 180                                      | 135  | - 35              | + 10                                                         | + 20               | 81                 | 320            | 0.875 | 1.865 | XTH166(1)270P0A |
| 28                             | 240                        | 180         | 7.5                                         | 120 | 162                      | 205                                      | 80   | - 40              | + 20                                                         | + 35               | 100                | 339            | 1.125 | 1.350 | XTV286(1)270P0A |
| 40                             | 240                        | 180         | 7.5                                         | 135 | 182                      | 230                                      | 100  | - 40              | + 20                                                         | + 35               | 104                | 339            | 1.125 | 1.350 | XTV406(1)270P0A |
| 75                             | 240                        | 180         | 4.5                                         | 145 | 202                      | 250                                      | 90   | - 60              | + 20                                                         | + 35               | 160                | 608            | 1.125 | 2.812 | XTV756(1)270P0A |
| 150                            | 240                        | 180         | 4.5                                         | 195 | 215                      | 235                                      | 75   | - 60              | + 20                                                         | + 35               | 202                | 608            | 1.125 | 2.812 | XTV157(1)270P0A |
| 360 V <sub>DC</sub> AT + 85 °C |                            |             |                                             |     |                          |                                          |      |                   |                                                              |                    |                    |                |       |       |                 |
| 2.0                            | 320                        | 240         | 40.0                                        | 35  | 52                       | 70                                       | 1000 | - 30              | + 20                                                         | + 20               | 37                 | 108            | 0.656 | 1.312 | XTK205(1)360P0A |
| 4.0                            | 320                        | 240         | 20.0                                        | 60  | 90                       | 120                                      | 500  | - 30              | + 20                                                         | + 20               | 41                 | 175            | 0.656 | 1.781 | XTM405(1)360P0A |
| 6.0                            | 320                        | 240         | 11.0                                        | 55  | 82                       | 110                                      | 360  | - 35              | + 10                                                         | + 20               | 80                 | 258            | 0.875 | 1.635 | XTL605(1)360P0A |
| 12                             | 320                        | 240         | 11.0                                        | 90  | 135                      | 180                                      | 180  | - 35              | + 10                                                         | + 20               | 105                | 314            | 0.875 | 2.420 | XTH126(1)360P0A |
| 22                             | 320                        | 240         | 10.0                                        | 125 | 170                      | 215                                      | 100  | - 40              | + 20                                                         | + 35               | 126                | 323            | 1.125 | 1.705 | XTV226(1)360P0A |
| 30                             | 320                        | 240         | 10.0                                        | 135 | 182                      | 230                                      | 120  | - 40              | + 20                                                         | + 35               | 133                | 323            | 1.125 | 1.705 | XTV306(1)360P0A |
| 450 V <sub>DC</sub> AT + 85 °C |                            |             |                                             |     |                          |                                          |      |                   |                                                              |                    |                    |                |       |       |                 |
| 5.0                            | 400                        | 300         | 13.0                                        | 55  | 82                       | 110                                      | 450  | - 35              | + 10                                                         | + 20               | 98                 | 262            | 0.875 | 2.000 | XTL505(1)450P0A |
| 10                             | 400                        | 300         | 13.0                                        | 90  | 135                      | 180                                      | 225  | - 35              | + 10                                                         | + 20               | 130                | 318            | 0.875 | 2.980 | XTH106(1)450P0A |
| 17                             | 400                        | 300         | 12.5                                        | 125 | 170                      | 215                                      | 130  | - 40              | + 20                                                         | + 35               | 152                | 315            | 1.125 | 2.080 | XTV176(1)450P0A |
| 25                             | 400                        | 300         | 12.5                                        | 135 | 182                      | 230                                      | 150  | - 40              | + 20                                                         | + 35               | 164                | 315            | 1.125 | 2.080 | XTV256(1)450P0A |
| 540 V <sub>DC</sub> AT + 85 °C |                            |             |                                             |     |                          |                                          |      |                   |                                                              |                    |                    |                |       |       |                 |
| 4.0                            | 480                        | 360         | 16.6                                        | 55  | 82                       | 110                                      | 540  | - 35              | + 10                                                         | + 20               | 114                | 250            | 0.875 | 2.365 | XTL405(1)540P0A |
| 8.0                            | 480                        | 360         | 16.6                                        | 90  | 135                      | 180                                      | 270  | - 35              | + 10                                                         | + 20               | 154                | 306            | 0.875 | 3.532 | XTH805(1)540P0A |
| 14                             | 480                        | 300         | 15.0                                        | 120 | 162                      | 205                                      | 160  | - 40              | + 20                                                         | + 35               | 178                | 309            | 1.125 | 2.435 | XTV146(1)540P0A |
| 20                             | 480                        | 300         | 15.0                                        | 135 | 182                      | 230                                      | 170  | - 40              | + 20                                                         | + 35               | 196                | 309            | 1.125 | 2.435 | XTV206(1)540P0A |
| 630 V <sub>DC</sub> AT + 85 °C |                            |             |                                             |     |                          |                                          |      |                   |                                                              |                    |                    |                |       |       |                 |
| 3.5                            | 560                        | 420         | 18.9                                        | 55  | 82                       | 110                                      | 630  | - 35              | + 10                                                         | + 20               | 133                | 249            | 0.875 | 2.720 | XTL355(1)630P0A |
| 7.0                            | 560                        | 420         | 18.9                                        | 90  | 135                      | 180                                      | 315  | - 35              | + 10                                                         | + 20               | 179                | 308            | 0.875 | 4.062 | XTH705(1)630P0A |
| 12                             | 560                        | 420         | 17.5                                        | 120 | 162                      | 205                                      | 180  | - 40              | + 20                                                         | + 35               | 204                | 306            | 1.125 | 2.810 | XTV126T630P0A   |
| 18                             | 560                        | 420         | 17.5                                        | 135 | 182                      | 230                                      | 200  | - 40              | + 20                                                         | + 35               | 225                | 306            | 1.125 | 2.810 | XTV186(1)630P0A |

## Note

- Part number definitions:
  - (1) Tolerance code:
    - T = - 15 % to + 50 % (standard for XTK, XTM, XTV)
    - U = - 15 % to + 75 % (standard for XTH, XTL)
    - M =  $\pm$  20 % (available by special order)

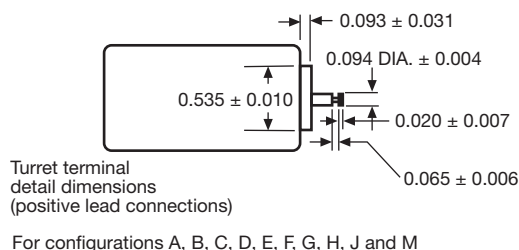
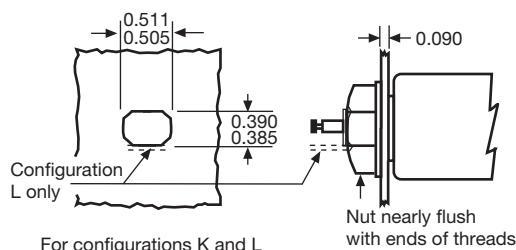
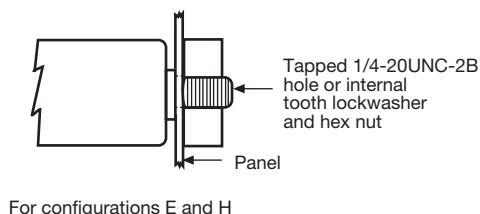
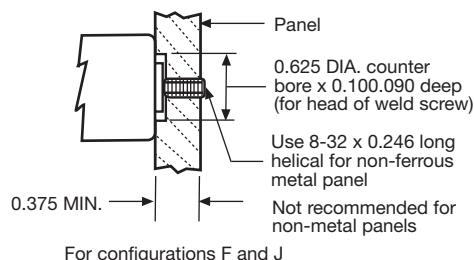
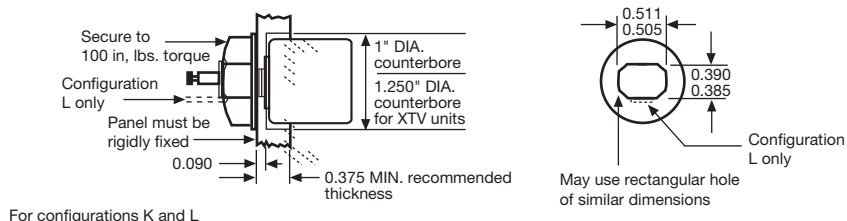
| <b>XTH-L-V STYLES</b>                                                                                                   |                                                                                                                        |                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>STYLE A</b><br><p>Top Bottom</p>                                                                                     | <b>STYLE B</b><br><p>Top Bottom</p>                                                                                    | <b>STYLE C</b><br><p>Top Bottom</p>                                                                              |
| <b>STYLE D</b><br><p>Top Bottom</p> <p>Negative screw lug is for indexing and negative connection only</p>              | <b>STYLE E</b><br><p>Top Bottom</p> <p>See Detail C in Mounting Methods table for suggested mounting methods</p>       | <b>STYLE F</b><br><p>Top Bottom</p> <p>See Detail D in Mounting Methods table for suggested mounting method</p>  |
| <b>STYLE G</b><br><p>Top Bottom</p> <p>Negative screw lug is for index and negative connection only</p>                 | <b>STYLE H</b><br><p>Top Bottom</p> <p>See Detail C in Mounting Methods table for suggested mounting methods</p>       | <b>STYLE J</b><br><p>Top Bottom</p> <p>See Detail D in Mounting Methods table for suggested mounting methods</p> |
| <b>STYLE K</b><br><p>Top Bottom</p> <p>See Details B and E in Mounting Methods table for suggested mounting methods</p> | <b>STYLE L</b><br><p>Top Bottom</p> <p>See Detail B and E in Mounting Methods table for suggested mounting methods</p> | <b>STYLE M</b><br><p>Top Bottom</p> <p>* Extends 0.125 on 0.875 DIA. units only</p>                              |



| <b>XTK-M STYLES</b> |                    |                    |                    |
|---------------------|--------------------|--------------------|--------------------|
| <b>STYLE A</b><br>  | <b>STYLE B</b><br> | <b>STYLE C</b><br> | <b>STYLE D</b><br> |
| <b>STYLE E</b><br>  | <b>STYLE F</b><br> | <b>STYLE G</b><br> | <b>STYLE H</b><br> |

| <b>POSITIVE TERMINALS FOR XTK AND XTM</b> |                             |                             |                    |
|-------------------------------------------|-----------------------------|-----------------------------|--------------------|
| <b>STYLE A</b><br>                        | <b>STYLE B, C AND D</b><br> | <b>STYLE E, G AND H</b><br> | <b>STYLE F</b><br> |

| <b>NEGATIVE TERMINALS FOR XTK AND XTM</b> |                             |                          |                          |
|-------------------------------------------|-----------------------------|--------------------------|--------------------------|
| <b>STYLE A</b><br>                        | <b>STYLE B, E AND F</b><br> | <b>STYLE C AND G</b><br> | <b>STYLE D AND H</b><br> |

**XTH, XTL AND XTV MOUNTING METHODS**
**DETAIL A**

**DETAIL B**

**DETAIL C**

**DETAIL D**

**DETAIL E**

**Note**

- Standard mounting nut provided is plated steel. Stainless steel nut can be obtained by adding "/STN" suffix to part number.

**04022 RATINGS AND CASE CODES**

| DSCC<br>DRAWING<br>04022<br>PIN                                            | CAP.<br>(NOM.)<br><br>(μF) | CAP.<br>TOLERANCE<br><br>(%) | DC LEAKAGE MAX.<br>(μA) |         |          | ESR MAX.<br>120 Hz<br>25 °C<br><br>(Ω) | IMPEDANCE<br>MAX.<br><br>(Ω) | CAPACITANCE<br>CHANGE<br>(%) |         |          | RIPPLE<br>CURRENT<br>1/<br><br>(mA) | DIMENSION<br>L<br>± 0.062 (1.57)<br><br>(INCHES) | FIGURE |
|----------------------------------------------------------------------------|----------------------------|------------------------------|-------------------------|---------|----------|----------------------------------------|------------------------------|------------------------------|---------|----------|-------------------------------------|--------------------------------------------------|--------|
|                                                                            |                            |                              |                         |         |          |                                        |                              |                              |         |          |                                     |                                                  |        |
|                                                                            |                            |                              | + 25 °C                 | + 85 °C | + 125 °C |                                        |                              | - 55 °C                      | + 85 °C | + 125 °C |                                     |                                                  |        |
| 8 V <sub>DC</sub> AT + 85 °C RATED; 9.2 V <sub>DC</sub> AT + 85 °C SURGE   |                            |                              |                         |         |          |                                        |                              |                              |         |          |                                     |                                                  |        |
| 01                                                                         | 70                         | + 50, - 15                   | 6                       | 30      | 48       | 12                                     | 60                           | - 60                         | + 30    | + 30     | 137                                 | 0.438 (11.13)                                    | 1A     |
| 02                                                                         | 140                        | + 50, - 15                   | 10                      | 50      | 80       | 5.9                                    | 30                           | - 60                         | + 30    | + 30     | 213                                 | 0.562 (14.27)                                    | 1A     |
| 10 V <sub>DC</sub> AT + 85 °C RATED; 11.5 V <sub>DC</sub> AT + 85 °C SURGE |                            |                              |                         |         |          |                                        |                              |                              |         |          |                                     |                                                  |        |
| 03                                                                         | 50                         | + 50, - 15                   | 5                       | 25      | 40       | 11.7                                   | 75                           | - 60                         | + 30    | + 30     | 137                                 | 0.438 (11.13)                                    | 1A     |
| 04                                                                         | 100                        | + 50, - 15                   | 9                       | 45      | 72       | 5.9                                    | 40                           | - 60                         | + 30    | + 30     | 213                                 | 0.562 (14.27)                                    | 1A     |
| 20 V <sub>DC</sub> AT + 85 °C RATED; 23 V <sub>DC</sub> AT + 85 °C SURGE   |                            |                              |                         |         |          |                                        |                              |                              |         |          |                                     |                                                  |        |
| 05                                                                         | 28                         | + 50, - 15                   | 6                       | 30      | 48       | 12                                     | 85                           | - 40                         | + 20    | + 20     | 137                                 | 0.438 (11.13)                                    | 1A     |
| 06                                                                         | 56                         | + 50, - 15                   | 10                      | 50      | 80       | 6                                      | 45                           | - 40                         | + 20    | + 20     | 213                                 | 0.562 (14.27)                                    | 1A     |
| 30 V <sub>DC</sub> AT + 85 °C RATED; 34.5 V <sub>DC</sub> AT + 85 °C SURGE |                            |                              |                         |         |          |                                        |                              |                              |         |          |                                     |                                                  |        |
| 07                                                                         | 20                         | + 50, - 15                   | 7                       | 35      | 56       | 11.7                                   | 125                          | - 40                         | + 20    | + 20     | 137                                 | 0.438 (11.13)                                    | 1A     |
| 08                                                                         | 40                         | + 50, - 15                   | 12                      | 60      | 96       | 5.9                                    | 75                           | - 40                         | + 20    | + 20     | 213                                 | 0.562 (14.27)                                    | 1A     |



| 04022 RATINGS AND CASE CODES                                               |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
|----------------------------------------------------------------------------|----------------------------|------------------------------|-------------------------|---------|----------|-----------------------------|------------------------------|------------------------------|---------|----------|---------------------------------|----------------------------------------------|--------|
| DSCC<br>DRAWING<br>04022<br>PIN                                            | CAP.<br>(NOM.)<br><br>(μF) | CAP.<br>TOLERANCE<br><br>(%) | DC LEAKAGE MAX.<br>(μA) |         |          | ESR MAX.<br>120 Hz<br>25 °C | IMPEDANCE<br>MAX.<br><br>(Ω) | CAPACITANCE<br>CHANGE<br>(%) |         |          | RIPPLE<br>CURRENT<br>1/<br>(mA) | DIMENSION<br>L<br>± 0.062 (1.57)<br>(INCHES) | FIGURE |
|                                                                            |                            |                              | + 25 °C                 | + 85 °C | + 125 °C | (Ω)                         |                              | - 55 °C                      | + 85 °C | + 125 °C |                                 |                                              |        |
|                                                                            |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 60 V <sub>DC</sub> AT + 85 °C RATED; 69 V <sub>DC</sub> AT + 85 °C SURGE   |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 09                                                                         | 12                         | + 50, - 15                   | 7                       | 35      | 56       | 12                          | 180                          | - 30                         | + 20    | + 20     | 137                             | 0.438 (11.13)                                | 1A     |
| 10                                                                         | 25                         | + 50, - 15                   | 12                      | 60      | 96       | 6                           | 90                           | - 30                         | + 20    | + 20     | 213                             | 0.562 (14.27)                                | 1A     |
| 90 V <sub>DC</sub> AT + 85 °C RATED; 103 V <sub>DC</sub> AT + 85 °C SURGE  |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 11                                                                         | 8.0                        | + 50, - 15                   | 7                       | 35      | 56       | 12                          | 250                          | - 30                         | + 20    | + 20     | 137                             | 0.438 (11.13)                                | 1A     |
| 12                                                                         | 16                         | + 50, - 15                   | 12                      | 60      | 96       | 5.9                         | 125                          | - 30                         | + 20    | + 20     | 213                             | 0.562 (14.27)                                | 1A     |
| 180 V <sub>DC</sub> AT + 85 °C RATED; 207 V <sub>DC</sub> AT + 85 °C SURGE |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 13                                                                         | 4.0                        | + 50, - 15                   | 7                       | 35      | 56       | 24                          | 500                          | - 30                         | + 20    | + 20     | 117                             | 0.719 (18.26)                                | 1A     |
| 14                                                                         | 8.0                        | + 50, - 15                   | 12                      | 60      | 96       | 12                          | 250                          | - 30                         | + 20    | + 20     | 186                             | 0.938 (23.83)                                | 1A     |
| 270 V <sub>DC</sub> AT + 85 °C RATED; 310 V <sub>DC</sub> AT + 85 °C SURGE |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 15                                                                         | 2.5                        | + 50, - 15                   | 7                       | 35      | 56       | 36                          | 750                          | - 30                         | + 20    | + 20     | 112                             | 1.031 (26.19)                                | 1A     |
| 16                                                                         | 5.0                        | + 50, - 15                   | 11                      | 55      | 88       | 18                          | 375                          | - 30                         | + 20    | + 20     | 179                             | 1.375 (34.93)                                | 1A     |
| 360 V <sub>DC</sub> AT + 85 °C RATED; 414 V <sub>DC</sub> AT + 85 °C SURGE |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 17                                                                         | 2.0                        | + 50, - 15                   | 7                       | 35      | 56       | 48                          | 1000                         | - 30                         | + 20    | + 20     | 108                             | 1.312 (33.32)                                | 1A     |
| 18                                                                         | 4.0                        | + 50, - 15                   | 12                      | 60      | 96       | 24                          | 500                          | - 30                         | + 20    | + 20     | 175                             | 1.781 (45.24)                                | 1A     |
| 20 V <sub>DC</sub> AT + 85 °C RATED; 23 V <sub>DC</sub> AT + 85 °C SURGE   |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 19                                                                         | 100                        | + 50, - 15                   | 10                      | 50      | 80       | 3.3                         | 30                           | - 60                         | + 15    | + 20     | 333                             | 0.540 (13.72)                                | 1B     |
| 20                                                                         | 200                        | + 75, - 15                   | 16                      | 80      | 128      | 2.8                         | 20                           | - 60                         | + 15    | + 20     | 375                             | 0.732 (18.59)                                | 1B     |
| 30 V <sub>DC</sub> AT + 85 °C RATED; 34.5 V <sub>DC</sub> AT + 85 °C SURGE |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 21                                                                         | 75                         | + 75, - 15                   | 11                      | 55      | 88       | 3.1                         | 45                           | - 45                         | + 10    | + 10     | 333                             | 0.540 (13.72)                                | 1B     |
| 22                                                                         | 150                        | + 75, - 15                   | 13                      | 90      | 104      | 3                           | 30                           | - 45                         | + 10    | + 10     | 375                             | 0.732 (18.59)                                | 1B     |
| 60 V <sub>DC</sub> AT + 85 °C RATED; 69 V <sub>DC</sub> AT + 85 °C SURGE   |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 23                                                                         | 40                         | + 75, - 15                   | 12                      | 60      | 96       | 3.2                         | 65                           | - 35                         | + 10    | + 10     | 333                             | 0.540 (13.72)                                | 1B     |
| 24                                                                         | 80                         | + 75, - 15                   | 19                      | 95      | 152      | 3.1                         | 35                           | - 35                         | + 10    | + 10     | 375                             | 0.732 (18.59)                                | 1B     |
| 90 V <sub>DC</sub> AT + 85 °C RATED; 103 V <sub>DC</sub> AT + 85 °C SURGE  |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 25                                                                         | 25                         | + 75, - 15                   | 11                      | 55      | 88       | 3.2                         | 90                           | - 35                         | + 10    | + 10     | 333                             | 0.540 (13.72)                                | 1B     |
| 26                                                                         | 50                         | + 75, - 15                   | 18                      | 90      | 144      | 3.1                         | 45                           | - 35                         | + 10    | + 10     | 375                             | 0.732 (18.59)                                | 1B     |
| 180 V <sub>DC</sub> AT + 85 °C RATED; 207 V <sub>DC</sub> AT + 85 °C SURGE |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 27                                                                         | 12                         | + 75, - 15                   | 11                      | 55      | 88       | 6.6                         | 180                          | - 35                         | + 10    | + 10     | 282                             | 0.920 (23.37)                                | 1B     |
| 28                                                                         | 25                         | + 75, - 15                   | 18                      | 90      | 144      | 6.2                         | 90                           | - 35                         | + 10    | + 10     | 341                             | 1.300 (33.02)                                | 1B     |
| 270 V <sub>DC</sub> AT + 85 °C RATED; 310 V <sub>DC</sub> AT + 85 °C SURGE |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 29                                                                         | 8.0                        | + 75, - 15                   | 11                      | 55      | 88       | 9.9                         | 270                          | - 35                         | + 10    | + 10     | 266                             | 1.270 (32.36)                                | 1B     |
| 30                                                                         | 16                         | + 75, - 15                   | 18                      | 90      | 144      | 9.8                         | 135                          | - 35                         | + 10    | + 10     | 320                             | 1.865 (47.37)                                | 1B     |
| 360 V <sub>DC</sub> AT + 85 °C RATED; 414 V <sub>DC</sub> AT + 85 °C SURGE |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 31                                                                         | 6.0                        | + 75, - 15                   | 11                      | 55      | 88       | 13                          | 360                          | - 35                         | + 10    | + 10     | 258                             | 1.635 (41.53)                                | 1B     |
| 32                                                                         | 12                         | + 75, - 15                   | 18                      | 90      | 144      | 13                          | 180                          | - 35                         | + 10    | + 10     | 314                             | 2.420 (61.47)                                | 1B     |
| 450 V <sub>DC</sub> AT + 85 °C RATED; 518 V <sub>DC</sub> AT + 85 °C SURGE |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 33                                                                         | 5.0                        | + 75, - 15                   | 11                      | 55      | 88       | 15                          | 450                          | - 35                         | + 10    | + 10     | 252                             | 2.000 (50.80)                                | 1B     |
| 34                                                                         | 10                         | + 75, - 15                   | 18                      | 90      | 144      | 15                          | 225                          | - 35                         | + 10    | + 10     | 308                             | 2.980 (75.69)                                | 1B     |
| 540 V <sub>DC</sub> AT + 85 °C RATED; 621 V <sub>DC</sub> AT + 85 °C SURGE |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 35                                                                         | 4.0                        | + 75, - 15                   | 11                      | 55      | 88       | 20                          | 540                          | - 35                         | + 10    | + 10     | 250                             | 2.365 (60.07)                                | 1B     |
| 36                                                                         | 8.0                        | + 75, - 15                   | 18                      | 90      | 144      | 20                          | 270                          | - 35                         | + 10    | + 10     | 308                             | 3.532 (89.71)                                | 1B     |
| 630 V <sub>DC</sub> AT + 85 °C RATED; 724 V <sub>DC</sub> AT + 85 °C SURGE |                            |                              |                         |         |          |                             |                              |                              |         |          |                                 |                                              |        |
| 37                                                                         | 3.5                        | + 75, - 15                   | 11                      | 55      | 88       | 22                          | 630                          | - 35                         | + 10    | + 10     | 250                             | 2.720 (69.09)                                | 1B     |



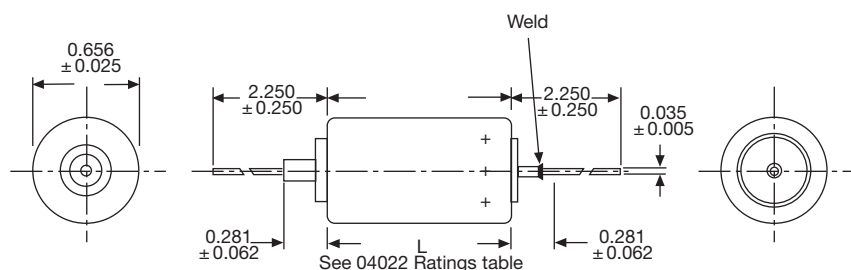


## 04022 RATINGS AND CASE CODES

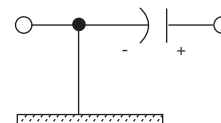
| DSCC<br>DRAWING<br>04022<br>PIN                                            | CAP.<br>(NOM.)<br>(μF) | CAP.<br>TOLERANCE<br>(%) | DC LEAKAGE MAX.<br>(μA) |         |          | ESR MAX.<br>120 Hz<br>25 °C<br>(Ω) | IMPEDANCE<br>MAX.<br>(Ω) | CAPACITANCE<br>CHANGE<br>(%) |         |          | RIPPLE<br>CURRENT<br>1/<br>(mA) | DIMENSION<br>L<br>± 0.062 (1.57)<br>(INCHES) | FIGURE |
|----------------------------------------------------------------------------|------------------------|--------------------------|-------------------------|---------|----------|------------------------------------|--------------------------|------------------------------|---------|----------|---------------------------------|----------------------------------------------|--------|
|                                                                            |                        |                          | + 25 °C                 | + 85 °C | + 125 °C |                                    |                          | - 55 °C                      | + 85 °C | + 125 °C |                                 |                                              |        |
| 30 V <sub>DC</sub> AT + 85 °C RATED; 34.5 V <sub>DC</sub> AT + 85 °C SURGE |                        |                          |                         |         |          |                                    |                          |                              |         |          |                                 |                                              |        |
| 39                                                                         | 370                    | ± 20                     | 18                      | 125     | 180      | 1.7                                | 15                       | - 65                         | + 20    | + 25     | 550                             | 0.600 (15.24)                                | 1C     |
| 40                                                                         | 370                    | + 50, - 15               | 18                      | 125     | 180      | 1.7                                | 15                       | - 65                         | + 20    | + 25     | 550                             | 0.600 (15.24)                                | 1C     |
| 41                                                                         | 650                    | ± 20                     | 21                      | 145     | 210      | 1.8                                | 15                       | - 85                         | + 20    | + 25     | 694                             | 1.100 (27.94)                                | 1C     |
| 42                                                                         | 650                    | + 50, - 15               | 21                      | 145     | 210      | 1.8                                | 15                       | - 85                         | + 20    | + 25     | 694                             | 1.100 (27.94)                                | 1C     |
| 43                                                                         | 1300                   | ± 20                     | 27                      | 190     | 270      | 1.8                                | 10                       | - 85                         | + 20    | + 25     | 694                             | 1.100 (27.94)                                | 1C     |
| 44                                                                         | 1300                   | + 50, - 15               | 27                      | 190     | 270      | 1.8                                | 10                       | - 85                         | + 20    | + 25     | 694                             | 1.100 (27.94)                                | 1C     |
| 60 V <sub>DC</sub> AT + 85 °C RATED; 69 V <sub>DC</sub> AT + 85 °C SURGE   |                        |                          |                         |         |          |                                    |                          |                              |         |          |                                 |                                              |        |
| 45                                                                         | 200                    | ± 20                     | 19                      | 135     | 190      | 1.8                                | 30                       | - 50                         | + 20    | + 25     | 550                             | 0.600 (15.24)                                | 1C     |
| 46                                                                         | 200                    | + 50, - 15               | 19                      | 135     | 190      | 1.8                                | 30                       | - 50                         | + 20    | + 25     | 550                             | 0.600 (15.24)                                | 1C     |
| 47                                                                         | 350                    | ± 20                     | 22                      | 155     | 220      | 1.8                                | 25                       | - 70                         | + 20    | + 25     | 694                             | 1.100 (27.94)                                | 1C     |
| 48                                                                         | 350                    | + 50, - 15               | 22                      | 155     | 220      | 1.8                                | 25                       | - 70                         | + 20    | + 25     | 694                             | 1.100 (27.94)                                | 1C     |
| 49                                                                         | 700                    | ± 20                     | 29                      | 200     | 290      | 1.8                                | 15                       | - 70                         | + 20    | + 25     | 694                             | 1.100 (27.94)                                | 1C     |
| 50                                                                         | 700                    | + 50, - 15               | 29                      | 200     | 290      | 1.8                                | 15                       | - 70                         | + 20    | + 25     | 694                             | 1.100 (27.94)                                | 1C     |
| 90 V <sub>DC</sub> AT + 85 °C RATED; 103 V <sub>DC</sub> AT + 85 °C SURGE  |                        |                          |                         |         |          |                                    |                          |                              |         |          |                                 |                                              |        |
| 51                                                                         | 120                    | ± 20                     | 19                      | 135     | 190      | 1.7                                | 40                       | - 40                         | + 20    | + 25     | 550                             | 0.600 (15.24)                                | 1C     |
| 52                                                                         | 120                    | + 50, - 15               | 19                      | 135     | 190      | 1.7                                | 40                       | - 40                         | + 20    | + 25     | 550                             | 0.600 (15.24)                                | 1C     |
| 53                                                                         | 220                    | ± 20                     | 21                      | 145     | 210      | 1.8                                | 30                       | - 60                         | + 20    | + 25     | 694                             | 1.100 (27.94)                                | 1C     |
| 54                                                                         | 220                    | + 50, - 15               | 21                      | 145     | 210      | 1.8                                | 30                       | - 60                         | + 20    | + 25     | 694                             | 1.100 (27.94)                                | 1C     |
| 55                                                                         | 450                    | ± 20                     | 29                      | 195     | 290      | 1.7                                | 35                       | - 60                         | + 20    | + 25     | 694                             | 1.100 (27.94)                                | 1C     |
| 56                                                                         | 450                    | + 50, - 15               | 29                      | 195     | 290      | 1.7                                | 35                       | - 60                         | + 20    | + 25     | 694                             | 1.100 (27.94)                                | 1C     |
| 180 V <sub>DC</sub> AT + 85 °C RATED; 207 V <sub>DC</sub> AT + 85 °C SURGE |                        |                          |                         |         |          |                                    |                          |                              |         |          |                                 |                                              |        |
| 57                                                                         | 42                     | ± 20                     | 17                      | 120     | 170      | 6                                  | 75                       | - 40                         | + 20    | + 25     | 363                             | 0.976 (24.79)                                | 1C     |
| 58                                                                         | 42                     | + 50, - 15               | 17                      | 120     | 170      | 6                                  | 75                       | - 40                         | + 20    | + 25     | 363                             | 0.976 (24.79)                                | 1C     |
| 59                                                                         | 60                     | ± 20                     | 19                      | 135     | 190      | 3.4                                | 60                       | - 40                         | + 20    | + 25     | 363                             | 0.976 (24.79)                                | 1C     |
| 60                                                                         | 60                     | + 50, - 15               | 19                      | 135     | 190      | 3.4                                | 60                       | - 40                         | + 20    | + 25     | 363                             | 0.976 (24.79)                                | 1C     |
| 61                                                                         | 110                    | ± 20                     | 21                      | 145     | 210      | 3.5                                | 60                       | - 60                         | + 20    | + 25     | 631                             | 1.938 (49.23)                                | 1C     |
| 62                                                                         | 110                    | + 50, - 15               | 21                      | 145     | 210      | 3.5                                | 60                       | - 60                         | + 20    | + 25     | 631                             | 1.938 (49.23)                                | 1C     |
| 63                                                                         | 230                    | ± 20                     | 29                      | 200     | 290      | 3.5                                | 50                       | - 60                         | + 20    | + 25     | 631                             | 1.938 (49.23)                                | 1C     |
| 64                                                                         | 230                    | + 50, - 15               | 29                      | 200     | 290      | 3.5                                | 50                       | - 60                         | + 20    | + 25     | 631                             | 1.938 (49.23)                                | 1C     |
| 270 V <sub>DC</sub> AT + 85 °C RATED; 310 V <sub>DC</sub> AT + 85 °C SURGE |                        |                          |                         |         |          |                                    |                          |                              |         |          |                                 |                                              |        |
| 65                                                                         | 28                     | ± 20                     | 19                      | 120     | 190      | 9                                  | 80                       | - 40                         | + 20    | + 25     | 339                             | 1.350 (34.29)                                | 1C     |
| 66                                                                         | 28                     | + 50, - 15               | 19                      | 120     | 190      | 9                                  | 80                       | - 40                         | + 20    | + 25     | 339                             | 1.350 (34.29)                                | 1C     |
| 67                                                                         | 40                     | ± 20                     | 19                      | 135     | 190      | 8.8                                | 100                      | - 40                         | + 20    | + 25     | 339                             | 1.350 (34.29)                                | 1C     |
| 68                                                                         | 40                     | + 50, - 15               | 19                      | 135     | 190      | 8.8                                | 100                      | - 40                         | + 20    | + 25     | 339                             | 1.350 (34.29)                                | 1C     |
| 69                                                                         | 75                     | ± 20                     | 21                      | 145     | 210      | 5.2                                | 90                       | - 60                         | + 20    | + 25     | 608                             | 2.812 (71.42)                                | 1C     |
| 70                                                                         | 75                     | + 50, - 15               | 21                      | 145     | 210      | 5.2                                | 90                       | - 60                         | + 20    | + 25     | 608                             | 2.812 (71.42)                                | 1C     |
| 71                                                                         | 150                    | ± 20                     | 28                      | 195     | 280      | 5.4                                | 75                       | - 60                         | + 20    | + 25     | 608                             | 2.812 (71.42)                                | 1C     |
| 72                                                                         | 150                    | + 50, - 15               | 28                      | 195     | 280      | 5.4                                | 75                       | - 60                         | + 20    | + 25     | 608                             | 2.812 (71.42)                                | 1C     |
| 360 V <sub>DC</sub> AT + 85 °C RATED; 414 V <sub>DC</sub> AT + 85 °C SURGE |                        |                          |                         |         |          |                                    |                          |                              |         |          |                                 |                                              |        |
| 73                                                                         | 22                     | ± 20                     | 18                      | 125     | 180      | 11.4                               | 100                      | - 40                         | + 20    | + 25     | 323                             | 1.705 (43.31)                                | 1C     |
| 74                                                                         | 22                     | + 50, - 15               | 18                      | 125     | 180      | 11.6                               | 100                      | - 40                         | + 20    | + 25     | 323                             | 1.705 (43.31)                                | 1C     |
| 75                                                                         | 30                     | ± 20                     | 19                      | 135     | 190      | 11.7                               | 120                      | - 40                         | + 20    | + 25     | 323                             | 1.705 (43.31)                                | 1C     |
| 76                                                                         | 30                     | + 50, - 15               | 19                      | 135     | 190      | 11.7                               | 120                      | - 40                         | + 20    | + 25     | 323                             | 1.705 (43.31)                                | 1C     |
| 450 V <sub>DC</sub> AT + 85 °C RATED; 518 V <sub>DC</sub> AT + 85 °C SURGE |                        |                          |                         |         |          |                                    |                          |                              |         |          |                                 |                                              |        |
| 77                                                                         | 17                     | ± 20                     | 18                      | 125     | 180      | 15                                 | 130                      | - 40                         | + 20    | + 25     | 315                             | 2.080 (52.83)                                | 1C     |
| 78                                                                         | 17                     | + 50, - 15               | 18                      | 125     | 180      | 15                                 | 130                      | - 40                         | + 20    | + 25     | 315                             | 2.080 (52.83)                                | 1C     |
| 79                                                                         | 25                     | ± 20                     | 19                      | 135     | 190      | 15                                 | 150                      | - 40                         | + 20    | + 25     | 315                             | 2.080 (52.83)                                | 1C     |
| 80                                                                         | 25                     | + 50, - 15               | 19                      | 135     | 190      | 15                                 | 150                      | - 40                         | + 20    | + 25     | 315                             | 2.080 (52.83)                                | 1C     |
| 540 V <sub>DC</sub> AT + 85 °C RATED; 621 V <sub>DC</sub> AT + 85 °C SURGE |                        |                          |                         |         |          |                                    |                          |                              |         |          |                                 |                                              |        |
| 81                                                                         | 14                     | ± 20                     | 17                      | 120     | 170      | 18                                 | 160                      | - 40                         | + 20    | + 25     | 309                             | 2.435 (61.85)                                | 1C     |
| 82                                                                         | 14                     | + 50, - 15               | 17                      | 120     | 170      | 18                                 | 160                      | - 40                         | + 20    | + 25     | 309                             | 2.435 (61.85)                                | 1C     |
| 83                                                                         | 20                     | ± 20                     | 19                      | 135     | 190      | 18                                 | 170                      | - 40                         | + 20    | + 25     | 309                             | 2.435 (61.85)                                | 1C     |
| 84                                                                         | 20                     | + 50, - 15               | 19                      | 135     | 190      | 18                                 | 170                      | - 40                         | + 20    | + 25     | 309                             | 2.435 (61.85)                                | 1C     |
| 630 V <sub>DC</sub> AT + 85 °C RATED; 724 V <sub>DC</sub> AT + 85 °C SURGE |                        |                          |                         |         |          |                                    |                          |                              |         |          |                                 |                                              |        |
| 85                                                                         | 12                     | ± 20                     | 17                      | 120     | 170      | 16                                 | 180                      | - 40                         | + 20    | + 25     | 306                             | 2.810 (71.37)                                | 1C     |
| 86                                                                         | 12                     | + 50, - 15               | 17                      | 120     | 170      | 16                                 | 180                      | - 40                         | + 20    | + 25     | 306                             | 2.810 (71.37)                                | 1C     |
| 87                                                                         | 18                     | ± 20                     | 19                      | 135     | 190      | 16                                 | 200                      | - 40                         | + 20    | + 25     | 306                             | 2.810 (71.37)                                | 1C     |
| 88                                                                         | 18                     | + 50, - 15               | 19                      | 135     | 190      | 16                                 | 200                      | - 40                         | + 20    | + 25     | 306                             | 2.810 (71.37)                                | 1C     |

## FIGURES

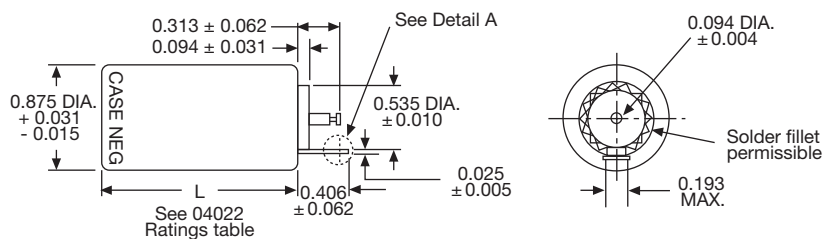
**FIGURE 1A**



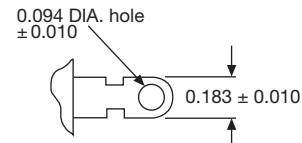
### CASE CIRCUIT DIAGRAM



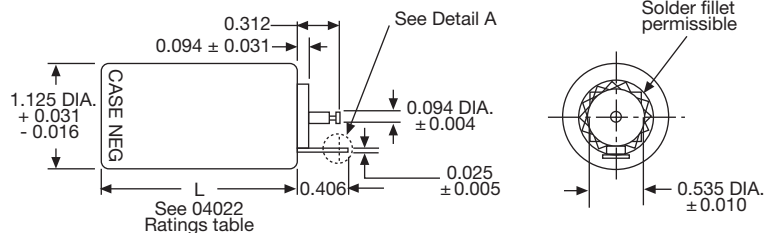
**FIGURE 1B**



DETAIL A  
SOLDER LUG  
TERMINAL



**FIGURE 1C**





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