

## Wet Tantalum Capacitors Subminiature, Axial Leads



### FEATURES

- Maximum CV/Unit volume
- Ruggedized construction
- Low dissipation factor
- Low DC leakage
- 100% 25°C DCL screening
- 100% voltage age @ 85°C - 8 hours
- 100% cap & DF screening

### PERFORMANCE CHARACTERISTICS

Operating Temperature: - 55°C to + 85°C

Voltage Range: 6 to 60VDC

Reverse Voltage: None

Capacitance Range: 3.3μF to 470μF

Tolerance Range: ± 10%, ± 20%

DC Leakage:

At + 25°C: 2.0μA max

At + 85°C: 6.0 to 10.0μA max

### MAX RMS RIPPLE CURRENT @ 85°C

| Case Code | D   | A    | B  | C   |
|-----------|-----|------|----|-----|
| Milliamps | 7.5 | 12.5 | 50 | 140 |

Case Sizes: (Four) .115 x .300 to .225 x .778

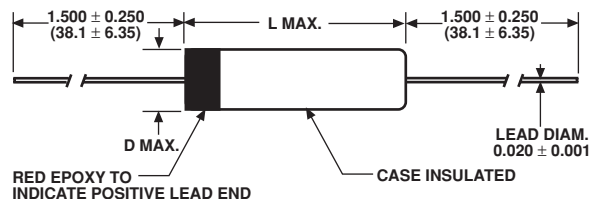
### APPLICATIONS

- Timing Circuits
- Filter Coupling
- Energy Storage
- By-Pass Circuits

### ORDERING INFORMATION

| MTP                  | 156                                                                                                                            | K                      | 006                                                                                              | P         | 1                | D              |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------|-----------|------------------|----------------|
| MODEL                | CAPACITANCE CODE                                                                                                               | CAPACITANCE TOLERANCE  | DC VOLTAGE RATING                                                                                | CASE CODE | STYLE NUMBER     | CASE SIZE CODE |
| MTP<br>Sub-miniature | This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow. | M = ± 20%<br>K = ± 10% | This is expressed in volts. To complete the three-digit block, zeros precede the voltage rating. | P = Polar | 1 = Mylar Sleeve |                |

### DIMENSIONS in inches [millimeters]



|      | D            | L             | APPROX WT |
|------|--------------|---------------|-----------|
| Case | Inches [mm]  | Inches [mm]   | Grams*    |
| D    | 0.115 [2.92] | 0.300 [7.62]  | 0.40      |
| A    | 0.115 [2.92] | 0.403 [10.23] | 0.50      |
| B    | 0.145 [3.68] | 0.600 [15.24] | 1.00      |
| C    | 0.225 [5.72] | 0.778 [19.76] | 2.60      |

\*1 Gram = .035 oz.



| <b>STANDARD RATINGS</b> |             |              |               |                    |        |                               |                             |                                   |           |
|-------------------------|-------------|--------------|---------------|--------------------|--------|-------------------------------|-----------------------------|-----------------------------------|-----------|
| CAP<br>( $\mu$ F)       | VOLTS<br>DC | CASE<br>CODE | PART NUMBER   | MAX DCL<br>$\mu$ A |        | MAX<br>ESR $\Omega$<br>+ 25°C | MAX<br>Z $\Omega$<br>- 55°C | MAX % $^{\circ}$ C<br>from + 25°C |           |
|                         |             |              |               | + 25°C             | + 85°C |                               |                             | to - 55°C                         | to + 85°C |
| 15                      | 6           | D            | MTP156*006P1D | 2.0                | 6.0    | 15.9                          | 300                         | -40                               | +15       |
| 47                      | 6           | A            | MTP476*006P1A | 2.0                | 6.0    | 9.6                           | 85                          | -60                               | +15       |
| 150                     | 6           | B            | MTP157*006P1B | 2.0                | 8.0    | 3.9                           | 35                          | -50                               | +15       |
| 180                     | 6           | B            | MTP187*006P1B | 2.0                | 8.0    | 3.4                           | 32                          | -50                               | +15       |
| 450                     | 6           | C            | MTP457*006P1C | 2.0                | 10.0   | 1.9                           | 25                          | -60                               | +15       |
| 470                     | 6           | C            | MTP477*006P1C | 2.0                | 10.0   | 1.8                           | 23                          | -60                               | +15       |
| 10                      | 10          | D            | MTP106*010P1D | 2.0                | 6.0    | 18.6                          | 380                         | -40                               | +15       |
| 33                      | 10          | A            | MTP336*010P1A | 2.0                | 6.0    | 11.3                          | 100                         | -40                               | +15       |
| 100                     | 10          | B            | MTP107*010P1B | 2.0                | 8.0    | 4.0                           | 46                          | -45                               | +15       |
| 120                     | 10          | B            | MTP127*010P1B | 2.0                | 8.0    | 3.5                           | 42                          | -50                               | +15       |
| 300                     | 10          | C            | MTP307*010P1C | 2.0                | 10.0   | 1.8                           | 31                          | -60                               | +15       |
| 330                     | 10          | C            | MTP337*010P1C | 2.0                | 10.0   | 1.6                           | 31                          | -60                               | +15       |
| 22                      | 15          | A            | MTP226*015P1A | 2.0                | 6      | 12.1                          | 120                         | -40                               | +12       |
| 68                      | 15          | B            | MTP686*015P1B | 2.0                | 8.0    | 6.2                           | 58                          | -45                               | +12       |
| 80                      | 15          | B            | MTP806*015P1B | 2.0                | 8.0    | 5.3                           | 50                          | -45                               | +12       |
| 200                     | 15          | C            | MTP207*015P1C | 2.0                | 10.0   | 2.0                           | 37                          | -50                               | +12       |
| 220                     | 15          | C            | MTP227*015P1C | 2.0                | 10.0   | 1.8                           | 36                          | -50                               | +12       |
| 6.8                     | 20          | D            | MTP685*020P1D | 2.0                | 6.0    | 27.3                          | 445                         | -35                               | +11       |
| 15                      | 20          | A            | MTP156*020P1A | 2.0                | 6.0    | 17.7                          | 150                         | -40                               | +11       |
| 47                      | 20          | B            | MTP476*020P1B | 2.0                | 8.0    | 6.8                           | 73                          | -40                               | +11       |
| 60                      | 20          | B            | MTP606*020P1B | 2.0                | 8.0    | 7.1                           | 60                          | -45                               | +11       |
| 150                     | 20          | C            | MTP157*020P1C | 2.0                | 10.0   | 2.7                           | 38                          | -50                               | +11       |
| 6                       | 30          | D            | MTP605*030P1D | 2.0                | 6.0    | 30.9                          | 459                         | -40                               | +10       |
| 10                      | 30          | A            | MTP106*030P1A | 2.0                | 6.0    | 21.2                          | 200                         | -35                               | +10       |
| 45                      | 30          | B            | MTP456*030P1B | 2.0                | 8.0    | 7.1                           | 80                          | -35                               | +10       |
| 120                     | 30          | C            | MTP127*030P1C | 2.0                | 10.0   | 3.3                           | 42                          | -45                               | +10       |
| 4.7                     | 35          | D            | MTP475*035P1D | 2.0                | 6.0    | 39.5                          | 570                         | -30                               | +10       |
| 10                      | 35          | A            | MTP106*035P1A | 2.0                | 6.0    | 21.2                          | 240                         | -35                               | +10       |
| 100                     | 35          | C            | MTP107*035P1C | 2.0                | 10.0   | 4.0                           | 48                          | -45                               | +10       |
| 4                       | 50          | D            | MTP405*050P1D | 2.0                | 6.0    | 39.8                          | 600                         | -30                               | +10       |
| 6.8                     | 50          | A            | MTP685*050P1A | 2.0                | 6.0    | 31.2                          | 310                         | -30                               | +10       |
| 30                      | 50          | B            | MTP306*050P1B | 2.0                | 8.0    | 9.7                           | 120                         | -30                               | +10       |
| 33                      | 50          | B            | MTP336*050P1B | 2.0                | 8.0    | 8.8                           | 120                         | -30                               | +10       |
| 68                      | 50          | C            | MTP686*050P1C | 2.0                | 10.0   | 4.3                           | 54                          | -40                               | +10       |
| 78                      | 50          | C            | MTP786*050P1C | 2.0                | 10.0   | 3.7                           | 52                          | -40                               | +10       |
| 3.3                     | 60          | D            | MTP335*060P1D | 2.0                | 6.0    | 48.2                          | 680                         | -25                               | +9        |
| 4.7                     | 60          | A            | MTP475*060P1A | 2.0                | 6.0    | 39.5                          | 400                         | -30                               | +9        |
| 6.8                     | 60          | A            | MTP685*060P1A | 2.0                | 6.0    | 31.2                          | 367                         | -30                               | +9        |
| 10                      | 60          | B            | MTP106*060P1B | 2.0                | 8.0    | 23.9                          | 217                         | -35                               | +9        |
| 15                      | 60          | B            | MTP156*060P1B | 2.0                | 8.0    | 17.7                          | 174                         | -35                               | +9        |
| 22                      | 60          | B            | MTP226*060P1B | 2.0                | 8.0    | 14.5                          | 140                         | -30                               | +9        |
| 33                      | 60          | C            | MTP336*060P1C | 2.0                | 10.0   | 7.2                           | 75                          | -35                               | +9        |
| 47                      | 60          | C            | MTP476*060P1C | 2.0                | 10.0   | 5.6                           | 62                          | -40                               | +9        |
| 68                      | 60          | C            | MTP686*060P1C | 2.0                | 10.0   | 4.3                           | 51                          | -40                               | +9        |

\* Insert Appropriate Letter Code For Tolerance: M =  $\pm$  20%, K =  $\pm$  10%

| <b>STANDARD REEL SPECIFICATIONS</b> |                               |
|-------------------------------------|-------------------------------|
| CASE                                | STANDARD REEL QUANTITY (PCS)* |
| D                                   | 3500                          |
| A                                   | 3500                          |
| B                                   | 2000                          |
| C                                   | 700                           |

\*12" Reel Size