

TMA

查询"477TMA100M"供应商

# +105°C Standard Axial Lead Aluminum Electrolytic Capacitors



For long life/Extended Temperature Applications

## FEATURES

- High ripple current ratings
- Wide capacitance range:  
0.47  $\mu\text{F}$  to 22,000  $\mu\text{F}$
- Voltage range: 6.3 WVDC to 450 WVDC
- Solvent tolerant end seals standard ( $\leq 250$  WVDC)

## SPECIFICATIONS

| Capacitance Tolerance                   |            | ±20% at 120Hz, 20°C                                                                       |                |     |     |      |                                                                                                 |                  |                            |     |      |                            |     |     |     |                 |
|-----------------------------------------|------------|-------------------------------------------------------------------------------------------|----------------|-----|-----|------|-------------------------------------------------------------------------------------------------|------------------|----------------------------|-----|------|----------------------------|-----|-----|-----|-----------------|
| Operating Temperature Range             |            | -40°C to +105°C                                                                           |                |     |     |      |                                                                                                 |                  |                            |     |      |                            |     |     |     | -25°C to +105°C |
| Dissipation Factor<br>120Hz, 20°C (Max) | WVDC       | 6.3                                                                                       | 10             | 16  | 25  | 35   | 50                                                                                              | 63               | 100                        | 160 | 200  | 250                        | 350 | 400 | 450 |                 |
|                                         | tanδ       | .28                                                                                       | .24            | .20 | .16 | .14  | .12                                                                                             | .10              | .09                        | .20 | .20  | .20                        | .20 | .25 | .25 |                 |
|                                         |            | Note: For above D.F. specifications, add .02 for every 1,000 μF above 1,000 μF            |                |     |     |      |                                                                                                 |                  |                            |     |      |                            |     |     |     |                 |
| Impedance Ratio<br>(Max.) @120Hz        | WVDC       | 6                                                                                         | 10             | 16  | 25  | 35   | 50                                                                                              | 63               | 100                        | 160 | 200  | 250                        | 350 | 400 | 450 |                 |
|                                         | -25°C/20°C | 5                                                                                         | 4              | 3   | 2   | 2    | 2                                                                                               | 2                | 2                          | 3   | 3    | 3                          | 3   | 3   | 5   |                 |
|                                         | -40°C/20°C | 12                                                                                        | 10             | 8   | 6   | 5    | 4                                                                                               | 4                | 4                          | 6   | 6    | 6                          | 6   | 6   | -   |                 |
| Leakage Current                         | WVDC       | ≤ 100 WVDC                                                                                |                |     |     |      |                                                                                                 |                  | 100 < WVDC ≤ 450           |     |      |                            |     |     |     |                 |
|                                         | Time       | 1 minute                                                                                  |                |     |     |      |                                                                                                 |                  | 1 minute                   |     |      |                            |     |     |     |                 |
|                                         |            | .03 CV or 4 μA<br>whichever is greater                                                    |                |     |     |      |                                                                                                 |                  | CV≤ 1000<br>.01 CV + 40 μA |     |      | CV> 1000<br>.04 CV + 100μA |     |     |     |                 |
| Load Life                               |            | 1,000 hours at 105°C with rated WVDC                                                      |                |     |     |      |                                                                                                 |                  |                            |     |      |                            |     |     |     |                 |
|                                         |            | Capacitance change<br>Dissipation factor<br>Leakage current                               |                |     |     |      | < 20% of initial measured value<br><200% of initial specified value<br><Initial specified value |                  |                            |     |      |                            |     |     |     |                 |
| Shelf life                              |            | 1,000 hours at 105°C with no voltage applied.<br>Units will meet load life specification. |                |     |     |      |                                                                                                 |                  |                            |     |      |                            |     |     |     |                 |
| Ripple Current Multipliers              |            | Capacitance<br>(μF)                                                                       | Frequency (Hz) |     |     |      |                                                                                                 | Temperature (C°) |                            |     |      |                            |     |     |     |                 |
|                                         |            |                                                                                           | 50             | 120 | 400 | 1k   | 10k                                                                                             | +105             | +85                        | +70 |      |                            |     |     |     |                 |
|                                         |            |                                                                                           | C≤47           | .75 | 1.0 | 1.35 | 1.57                                                                                            | 2.0              | 1.0                        | 1.4 | 1.62 |                            |     |     |     |                 |
|                                         |            |                                                                                           | 100≤C≤470      | .8  | 1.0 | 1.23 | 1.34                                                                                            | 1.5              | 1.0                        | 1.4 | 1.62 |                            |     |     |     |                 |
|                                         |            |                                                                                           | C>470          | .85 | 1.0 | 1.10 | 1.13                                                                                            | 1.15             | 1.0                        | 1.4 | 1.62 |                            |     |     |     |                 |

## SPECIAL ORDER OPTIONS

(See Pages 33 thru 37)

- Special tolerances:  $\pm 10\%$  (K),  $-10\% + 30\%$  (Q)
- Tape and Reel
- Epoxy end seal

Aluminum Electrolytic



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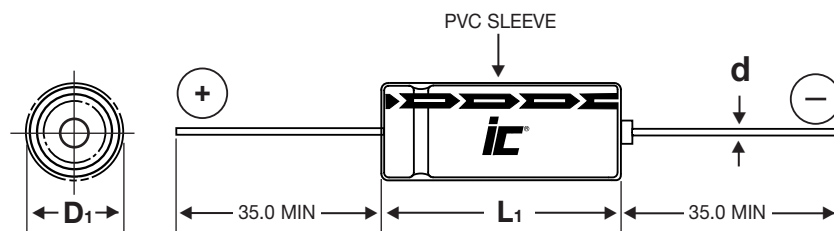
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## PHYSICAL DIMENSIONS

| WVDC<br>(SV)<br>μF | 6.3<br>(8) | 10<br>(13) | 16<br>(20) | 25<br>(32) | 35<br>(44) | 50<br>(63) | 63<br>(79) | 100<br>(125) | 160<br>(200) | 200<br>(250) | 250<br>(300) | 350<br>(400) | 400<br>(450) | 450<br>(500) |
|--------------------|------------|------------|------------|------------|------------|------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 0.47               |            |            |            |            |            |            | →          | 5x12.5       |              |              |              |              |              |              |
| 1                  |            |            |            |            | →          | 5x12.5     | →          | 5x12.5       | →            | 6.3x12.5     | →            | 6.3x16       | 8x16         | 8x16         |
| 2.2                |            |            |            |            | →          | 5x12.5     | →          | 5x12.5       | →            | 6.3x16       | →            | 8x16         | 8x20         | 10x20        |
| 3.3                |            |            |            |            | →          | 5x12.5     | →          | 6.3x12.5     | →            |              | →            | 8x16         | 8x20         | 10x20        |
| 4.7                |            |            |            |            |            | →          | 5x12.5     | 6.3x12.5     | →            | 8x16         | 8x20         | 10x20        | 10x20        | 10x25        |
| 10                 |            |            |            | →          | 5x12.5     | 5x12.5     | 6.3x12.5   | 6.3x16       | 8x20         | 10x20        | 10x20        | 12.5x25      | 12.5x25      | 12.5x30      |
| 22                 |            |            | →          | 5x12.5     | 6.3x12.5   | →          | 6.3x16     | 8x16         | 10x25        | →            | 12.5x25      | 16x30        | 16x30        | 16x40        |
| 33                 |            | →          | 5x12.5     | 6.3x12.5   | →          |            | 6.3x16     | 8x20         | 12.5x25      | 12.5x25      | 12.5x30      | 16x30        | 16x40        | 18x40        |
| 47                 | →          | 5x12.5     | 6.3x12.5   | →          |            | 6.3x16     | 8x16       | 8x20         | 12.5x30      | 12.5x30      | 16x30        | 16x40        | 18x40        | 22x40        |
| 100                | 6.3x12.5   | →          |            | 6.3x16     | →          | 8x16       | 8x20       | 10x25        | 16x40        | 16x40        | 16x40        | 22x40        | 22x50        |              |
| 220                | →          | 6.3x16     | →          | 8x16       | 8x20       | 10x20      | 10x25      | 12.5x30      | 22x40        | 22x40        | 22x50        |              |              |              |
| 330                |            | →          | 8x16       | 8x20       | 10x20      | 10x25      | 12.5x25    | 16x30        |              |              |              |              |              |              |
| 470                | →          | 8x16       | 8x20       | 10x20      | 10x25      | 12.5x25    | 12.5x30    | 16x40        |              |              |              |              |              |              |
| 1,000              | →          | 10x20      | 10x25      | 12.5x25    | 12.5x30    | 16x30      | 16x30      | 22x40        |              |              |              |              |              |              |
| 2,200              | →          | 12.5x25    | 12.5x30    | 16x30      | 16x30      | 18x40      | 22x40      |              |              |              |              |              |              |              |
| 3,300              | 12.5x25    | 12.5x30    | 16x30      | 16x30      | 16x40      | 22x40      | 22x50      |              |              |              |              |              |              |              |
| 4,700              | 12.5x30    | 16x30      | 16x30      | 18x40      | 22x40      | 22x50      |            |              |              |              |              |              |              |              |
| 6,800              | →          | 16x30      | 16x40      | 22x40      | 22x50      |            |            |              |              |              |              |              |              |              |
| 10,000             | 16x40      | 18x40      | 22x40      | 22x50      |            |            |            |              |              |              |              |              |              |              |
| 15,000             | 18x40      | 22x40      | 22x50      |            |            |            |            |              |              |              |              |              |              |              |
| 22,000             | 22x40      | 22x50      |            |            |            |            |            |              |              |              |              |              |              |              |

Convert to inches, divide by 25.4

DxL (mm)



LEAD INFORMATION VS. CASE DIAMETER

| D | 5.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 | 18.0 | 22.0 |
|---|-----|-----|-----|------|------|------|------|------|
| d | 0.6 | 0.5 | 0.6 | 0.6  | 0.6  | 0.8  | 0.8  | 0.8  |
| B | 0.5 | 0.5 | 0.5 | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  |

$D_1 = D + B$  Max.  
 $L_1 = L + 2$  Max.

NOTE: Case Vent is standard on all  
diameter  $\geq 8.0$ mm

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## STANDARD PARTS LISTING

| Capacitance<br>(μF) | WVDC | IC <sup>®</sup> PART<br>NUMBER | Maximum<br>ESR<br>Ω<br>120Hz, +25°C | Maximum RMS<br>Ripple Current<br>(mA)<br>120Hz, +105°C | Dimension<br>D x L<br>(mm) |
|---------------------|------|--------------------------------|-------------------------------------|--------------------------------------------------------|----------------------------|
| 0.47                | 100  | 474TMA100M                     | 317.46                              | 10                                                     | 5x12.5                     |
| 1                   | 50   | 105TMA050M                     | 198.94                              | 10                                                     | 5x12.5                     |
| 1                   | 100  | 105TMA100M                     | 149.21                              | 15                                                     | 5x12.5                     |
| 1                   | 200  | 105TMA200M                     | 331.6                               | 9                                                      | 6.3x12.5                   |
| 1                   | 350  | 105TMA350M                     | 331.57                              | 10                                                     | 6.3x16                     |
| 1                   | 400  | 105TMA400M                     | 414.47                              | 11                                                     | 8x16                       |
| 1                   | 450  | 105TMA450M                     | 414.5                               | 11                                                     | 8x16                       |
| 2.2                 | 50   | 225TMA050M                     | 90.43                               | 20                                                     | 5x12.5                     |
| 2.2                 | 100  | 225TMA100M                     | 67.82                               | 23                                                     | 5x12.5                     |
| 2.2                 | 200  | 225TMA200M                     | 150.71                              | 16                                                     | 6.3x16                     |
| 2.2                 | 350  | 225TMA350M                     | 150.71                              | 19                                                     | 8x16                       |
| 2.2                 | 400  | 225TMA400M                     | 188.39                              | 19                                                     | 8x20                       |
| 2.2                 | 450  | 225TMA450M                     | 188.39                              | 22                                                     | 10x20                      |
| 3.3                 | 50   | 335TMA050M                     | 60.29                               | 25                                                     | 5x12.5                     |
| 3.3                 | 100  | 335TMA100M                     | 45.21                               | 30                                                     | 6.3x12.5                   |
| 3.3                 | 250  | 335TMA250M                     | 100.48                              | 23                                                     | 8x16                       |
| 3.3                 | 350  | 335TMA350M                     | 100.48                              | 26                                                     | 8x20                       |
| 3.3                 | 400  | 335TMA400M                     | 125.60                              | 27                                                     | 10x20                      |
| 3.3                 | 450  | 335TMA450M                     | 125.60                              | 27                                                     | 10x20                      |
| 4.7                 | 63   | 475TMA063M                     | 35.27                               | 32                                                     | 5x12.5                     |
| 4.7                 | 100  | 475TMA100M                     | 31.75                               | 36                                                     | 6.3x12.5                   |
| 4.7                 | 200  | 475TMA200M                     | 70.55                               | 27                                                     | 8x16                       |
| 4.7                 | 250  | 475TMA250M                     | 70.55                               | 32                                                     | 8x20                       |
| 4.7                 | 350  | 475TMA350M                     | 70.55                               | 35                                                     | 10x20                      |
| 4.7                 | 400  | 475TMA400M                     | 88.18                               | 32                                                     | 10x20                      |
| 4.7                 | 450  | 475TMA450M                     | 88.18                               | 35                                                     | 10x25                      |
| 10                  | 35   | 106TMA035M                     | 23.21                               | 40                                                     | 5x12.5                     |
| 10                  | 50   | 106TMA050M                     | 19.89                               | 41                                                     | 5x12.5                     |
| 10                  | 63   | 106TMA063M                     | 35.27                               | 49                                                     | 6.3x12.5                   |
| 10                  | 100  | 106TMA100M                     | 14.92                               | 58                                                     | 6.3x16                     |
| 10                  | 160  | 106TMA160M                     | 33.16                               | 43                                                     | 8x20                       |
| 10                  | 200  | 106TMA200M                     | 33.16                               | 50                                                     | 10x20                      |
| 10                  | 250  | 106TMA250M                     | 33.16                               | 50                                                     | 10x20                      |
| 10                  | 350  | 106TMA350M                     | 33.16                               | 64                                                     | 12.5x25                    |
| 10                  | 400  | 106TMA400M                     | 41.45                               | 60                                                     | 12.5x25                    |
| 10                  | 450  | 106TMA450M                     | 41.45                               | 60                                                     | 12.5x30                    |
| 22                  | 25   | 226TMA025M                     | 12.06                               | 52                                                     | 5x12.5                     |
| 22                  | 35   | 226TMA035M                     | 10.55                               | 61                                                     | 6.3x12.5                   |
| 22                  | 63   | 226TMA063M                     | 7.54                                | 81                                                     | 6.3x16                     |
| 22                  | 100  | 226TMA100M                     | 6.78                                | 95                                                     | 8x16                       |
| 22                  | 160  | 226TMA160M                     | 15.07                               | 85                                                     | 10x25                      |

| Capacitance<br>(μF) | WVDC | IC <sup>®</sup> PART<br>NUMBER | Maximum<br>ESR<br>Ω<br>120Hz, +25°C | Maximum RMS<br>Ripple Current<br>(mA)<br>120Hz, +105°C | Dimension<br>D x L<br>(mm) |
|---------------------|------|--------------------------------|-------------------------------------|--------------------------------------------------------|----------------------------|
| 22                  | 250  | 226TMA250M                     | 15.07                               | 100                                                    | 12.5x25                    |
| 22                  | 350  | 226TMA350M                     | 15.07                               | 120                                                    | 16x30                      |
| 22                  | 400  | 226TMA400M                     | 18.84                               | 105                                                    | 16x30                      |
| 22                  | 450  | 226TMA450M                     | 18.84                               | 105                                                    | 16x40                      |
| 33                  | 16   | 336TMA016M                     | 10.05                               | 57                                                     | 5x12.5                     |
| 33                  | 25   | 336TMA025M                     | 98.04                               | 70                                                     | 6.3x12.5                   |
| 33                  | 63   | 336TMA063M                     | 5.02                                | 100                                                    | 6.3x16                     |
| 33                  | 100  | 336TMA100M                     | 4.52                                | 130                                                    | 8x20                       |
| 33                  | 160  | 336TMA160M                     | 10.05                               | 120                                                    | 12.5x25                    |
| 33                  | 200  | 336TMA200M                     | 10.05                               | 135                                                    | 12.5x25                    |
| 33                  | 250  | 336TMA250M                     | 10.05                               | 135                                                    | 12.5x30                    |
| 33                  | 350  | 336TMA350M                     | 10.05                               | 150                                                    | 16x30                      |
| 33                  | 400  | 336TMA400M                     | 12.56                               | 155                                                    | 16x40                      |
| 33                  | 450  | 336TMA450M                     | 12.56                               | 160                                                    | 18x40                      |
| 47                  | 10   | 476TMA010M                     | 8.47                                | 62                                                     | 5x12.5                     |
| 47                  | 16   | 476TMA016M                     | 7.05                                | 75                                                     | 6.3x12.5                   |
| 47                  | 50   | 476TMA050M                     | 4.23                                | 110                                                    | 6.3x16                     |
| 47                  | 63   | 476TMA063M                     | 3.53                                | 130                                                    | 8x16                       |
| 47                  | 100  | 476TMA100M                     | 3.17                                | 155                                                    | 8x20                       |
| 47                  | 160  | 476TMA160M                     | 7.05                                | 155                                                    | 12.5x30                    |
| 47                  | 200  | 476TMA200M                     | 7.05                                | 155                                                    | 12.5x30                    |
| 47                  | 250  | 476TMA250M                     | 7.05                                | 175                                                    | 16x30                      |
| 47                  | 350  | 476TMA350M                     | 7.05                                | 205                                                    | 16x40                      |
| 47                  | 400  | 476TMA400M                     | 8.82                                | 200                                                    | 18x40                      |
| 47                  | 450  | 476TMA450M                     | 8.82                                | 210                                                    | 22x40                      |
| 100                 | 6.3  | 107TMA6R3M                     | 4.64                                | 93                                                     | 6.3x12.5                   |
| 100                 | 25   | 107TMA025M                     | 2.65                                | 140                                                    | 6.3x16                     |
| 100                 | 50   | 107TMA050M                     | 1.99                                | 175                                                    | 8x16                       |
| 100                 | 63   | 107TMA063M                     | 1.66                                | 215                                                    | 8x20                       |
| 100                 | 100  | 107TMA100M                     | 1.49                                | 280                                                    | 10x25                      |
| 100                 | 160  | 107TMA160M                     | 3.32                                | 300                                                    | 16x40                      |
| 100                 | 200  | 107TMA200M                     | 3.32                                | 300                                                    | 16x40                      |
| 100                 | 250  | 107TMA250M                     | 3.32                                | 300                                                    | 16x40                      |
| 100                 | 350  | 107TMA350M                     | 3.32                                | 350                                                    | 22x40                      |
| 100                 | 400  | 107TMA400M                     | 4.14                                | 330                                                    | 22x50                      |
| 220                 | 10   | 227TMA010M                     | 1.81                                | 170                                                    | 6.3x16                     |
| 220                 | 25   | 227TMA025M                     | 1.21                                | 225                                                    | 8x16                       |
| 220                 | 35   | 227TMA035M                     | 1.06                                | 265                                                    | 8x20                       |
| 220                 | 50   | 227TMA050M                     | 0.9                                 | 325                                                    | 10x20                      |
| 220                 | 63   | 227TMA063M                     | 0.75                                | 390                                                    | 10x25                      |
| 220                 | 100  | 227TMA100M                     | 0.68                                | 485                                                    | 12.5x30                    |

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## STANDARD PARTS LISTING

| Capacitance<br>( $\mu$ F) | WVDC | IC <sup>®</sup> PART<br>NUMBER | Maximum<br>ESR<br>$\Omega$<br>120Hz, +25°C | Maximum RMS<br>Ripple Current<br>(mA)<br>120Hz, +105°C | Dimension<br>D x L<br>(mm) |
|---------------------------|------|--------------------------------|--------------------------------------------|--------------------------------------------------------|----------------------------|
| 220                       | 160  | 227TMA160M                     | 1.51                                       | 520                                                    | 22x40                      |
| 220                       | 200  | 227TMA200M                     | 1.51                                       | 520                                                    | 22x40                      |
| 220                       | 250  | 227TMA250M                     | 1.51                                       | 550                                                    | 22x50                      |
| 330                       | 16   | 337TMA016M                     | 1                                          | 250                                                    | 8x16                       |
| 330                       | 25   | 337TMA025M                     | 0.8                                        | 305                                                    | 8x20                       |
| 330                       | 35   | 337TMA035M                     | 0.7                                        | 365                                                    | 10x20                      |
| 330                       | 50   | 337TMA050M                     | 0.6                                        | 435                                                    | 10x25                      |
| 330                       | 63   | 337TMA063M                     | 0.5                                        | 520                                                    | 12.5x25                    |
| 330                       | 100  | 337TMA100M                     | 0.45                                       | 600                                                    | 16x30                      |
| 470                       | 10   | 477TMA010M                     | 0.85                                       | 270                                                    | 8x16                       |
| 470                       | 16   | 477TMA016M                     | 0.71                                       | 325                                                    | 8x20                       |
| 470                       | 25   | 477TMA025M                     | 0.56                                       | 410                                                    | 10x20                      |
| 470                       | 35   | 477TMA035M                     | 0.49                                       | 480                                                    | 10x25                      |
| 470                       | 50   | 477TMA050M                     | 0.42                                       | 565                                                    | 12.5x25                    |
| 470                       | 63   | 477TMA063M                     | 0.35                                       | 670                                                    | 12.5x30                    |
| 470                       | 100  | 477TMA100M                     | 0.32                                       | 870                                                    | 16x40                      |
| 1000                      | 10   | 108TMA010M                     | 0.4                                        | 485                                                    | 10x20                      |
| 1000                      | 16   | 108TMA016M                     | 0.33                                       | 585                                                    | 10x25                      |
| 1000                      | 25   | 108TMA025M                     | 0.27                                       | 715                                                    | 12.5x25                    |
| 1000                      | 35   | 108TMA035M                     | 0.23                                       | 830                                                    | 12.5x30                    |
| 1000                      | 50   | 108TMA050M                     | 0.2                                        | 905                                                    | 16x30                      |
| 1000                      | 63   | 108TMA063M                     | 0.17                                       | 1070                                                   | 16x30                      |
| 1000                      | 100  | 108TMA100M                     | 0.15                                       | 1360                                                   | 22x40                      |
| 2200                      | 10   | 228TMA010M                     | 0.21                                       | 835                                                    | 12.5x25                    |
| 2200                      | 16   | 228TMA016M                     | 0.18                                       | 980                                                    | 12.5x30                    |
| 2200                      | 25   | 228TMA025M                     | 0.15                                       | 1100                                                   | 16x30                      |
| 2200                      | 35   | 228TMA035M                     | 0.14                                       | 1250                                                   | 16x30                      |
| 2200                      | 50   | 228TMA050M                     | 0.12                                       | 1500                                                   | 18x40                      |

| Capacitance<br>( $\mu$ F) | WVDC | IC <sup>®</sup> PART<br>NUMBER | Maximum<br>ESR<br>$\Omega$<br>120Hz, +25°C | Maximum RMS<br>Ripple Current<br>(mA)<br>120Hz, +105°C | Dimension<br>D x L<br>(mm) |
|---------------------------|------|--------------------------------|--------------------------------------------|--------------------------------------------------------|----------------------------|
| 2200                      | 63   | 228TMA063M                     | 0.11                                       | 1740                                                   | 22x40                      |
| 3300                      | 6.3  | 338TMA6R3M                     | 0.17                                       | 920                                                    | 12.5x25                    |
| 3300                      | 10   | 338TMA010M                     | 0.15                                       | 1070                                                   | 12.5x30                    |
| 3300                      | 16   | 338TMA016M                     | 0.13                                       | 1160                                                   | 16x30                      |
| 3300                      | 25   | 338TMA025M                     | 0.11                                       | 1370                                                   | 16x30                      |
| 3300                      | 35   | 338TMA035M                     | 0.1                                        | 1640                                                   | 16x40                      |
| 3300                      | 50   | 338TMA050M                     | 0.09                                       | 1850                                                   | 22x40                      |
| 3300                      | 63   | 338TMA063M                     | 0.08                                       | 2180                                                   | 22x50                      |
| 4700                      | 6.3  | 478TMA6R3M                     | 0.13                                       | 1160                                                   | 12.5x30                    |
| 4700                      | 10   | 478TMA010M                     | 0.11                                       | 1240                                                   | 16x30                      |
| 4700                      | 16   | 478TMA016M                     | 0.1                                        | 1440                                                   | 16x30                      |
| 4700                      | 25   | 478TMA025M                     | 0.08                                       | 1750                                                   | 18x40                      |
| 4700                      | 35   | 478TMA035M                     | 0.08                                       | 1970                                                   | 22x40                      |
| 4700                      | 50   | 478TMA050M                     | 0.07                                       | 2290                                                   | 22x50                      |
| 6800                      | 10   | 688TMA010M                     | 0.09                                       | 1560                                                   | 16x30                      |
| 6800                      | 16   | 688TMA016M                     | 0.08                                       | 1820                                                   | 16x40                      |
| 6800                      | 25   | 688TMA025M                     | 0.07                                       | 2080                                                   | 22x40                      |
| 6800                      | 35   | 688TMA035M                     | 0.06                                       | 2390                                                   | 22x50                      |
| 10000                     | 6.3  | 109TMA6R3M                     | 0.08                                       | 1790                                                   | 16x40                      |
| 10000                     | 10   | 109TMA010M                     | 0.07                                       | 1850                                                   | 18x40                      |
| 10000                     | 16   | 109TMA016M                     | 0.06                                       | 2090                                                   | 22x40                      |
| 10000                     | 25   | 109TMA025M                     | 0.06                                       | 2430                                                   | 22x50                      |
| 15000                     | 6.3  | 159TMA6R3M                     | 0.06                                       | 1960                                                   | 18x40                      |
| 15000                     | 10   | 159TMA010M                     | 0.06                                       | 2180                                                   | 22x40                      |
| 15000                     | 16   | 159TMA016M                     | 0.05                                       | 2510                                                   | 22x50                      |
| 22000                     | 6.3  | 229TMA6R3M                     | 0.05                                       | 2280                                                   | 22x40                      |
| 22000                     | 10   | 229TMA010M                     | 0.05                                       | 2590                                                   | 22x50                      |