

# +105°C Ballast Quality, High Performance, Radial Leaded Miniature, Aluminum Electrolytic Capacitors

## Features-

- +105°C, Long Life - High Performance
- Low ESR=Lower Heat Build Up=Longer Life
- Stable Electrical Parameters For Life
- Efficient CV per Case Size
- Product Designs Unique to Customer Specifications



## General Specifications-

### Operating Temperature:

-40 to +105°C

### Voltage Range:

200 – 450 VDC

### Capacitance Range:

6.8µF to 270µF

### Capacitance Tolerance:

±20% (Std.)

### Case Size Range:

12.5 X 20.0mm – 18.0 X 40.0mm

### Termination:

Two Radial Leads (Std.)  
*Other Options Available.*

### Life Validation Test: 5,000hrs @ +105°C

Δ CAP ≤ 20% From initial measurement.  
Δ ESR ≤ 1.5X Initial specified limit.  
Δ DCL ≤ Initial specified limit.

### Shelf Test: 1,000hrs @ +105°C

Δ CAP ≤ 20% From initial measurement.  
Δ ESR ≤ 1.5X Initial specified limit.  
Δ DCL ≤ 2X Initial specified limit.

### DC Leakage Current:

$$I = 0.03CV + 25$$

Where:

I is in µA

C is in µF

V is in Volts

### Ripple Current Multipliers:

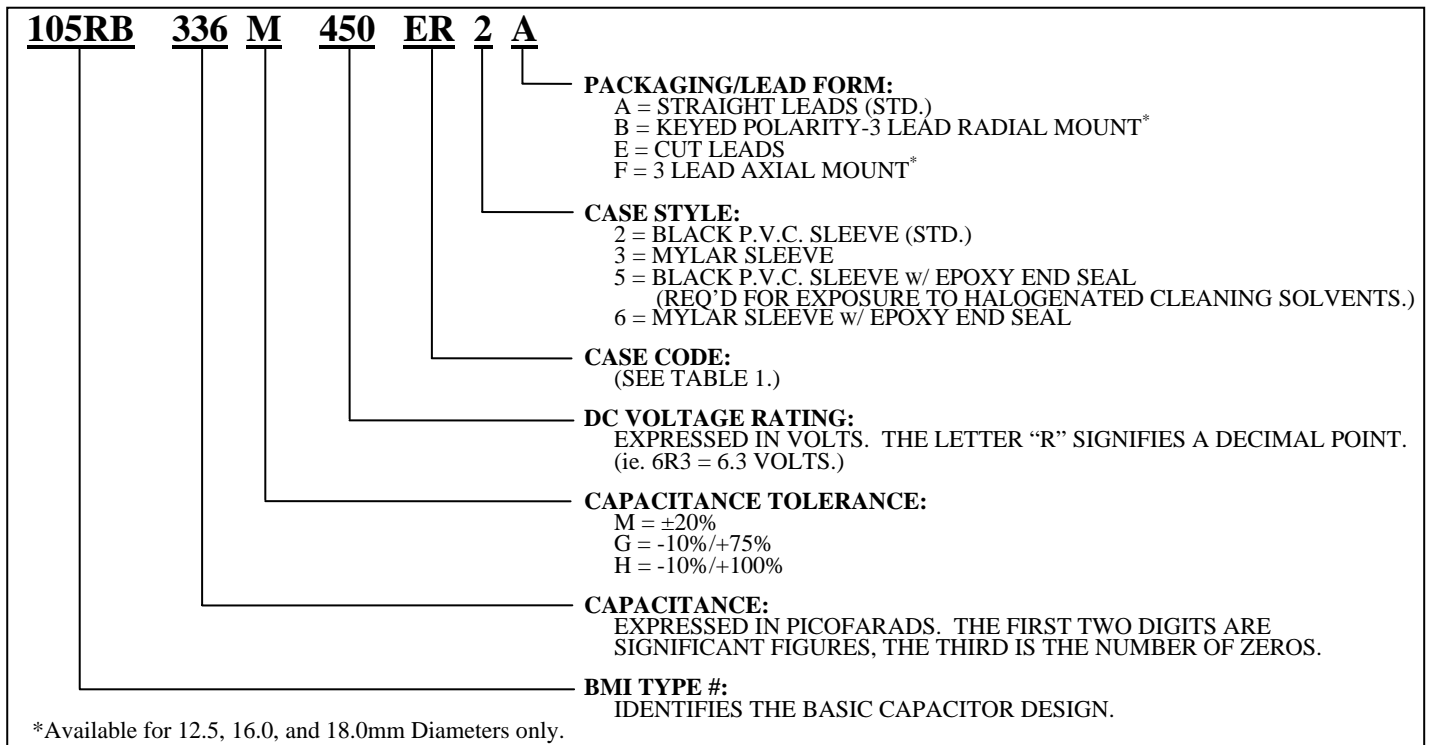
Temperature:

| Ambient Temp. | +105°C | +85°C | ±75°C |
|---------------|--------|-------|-------|
| Multiplier    | 0.5    | 1.0   | 1.25  |

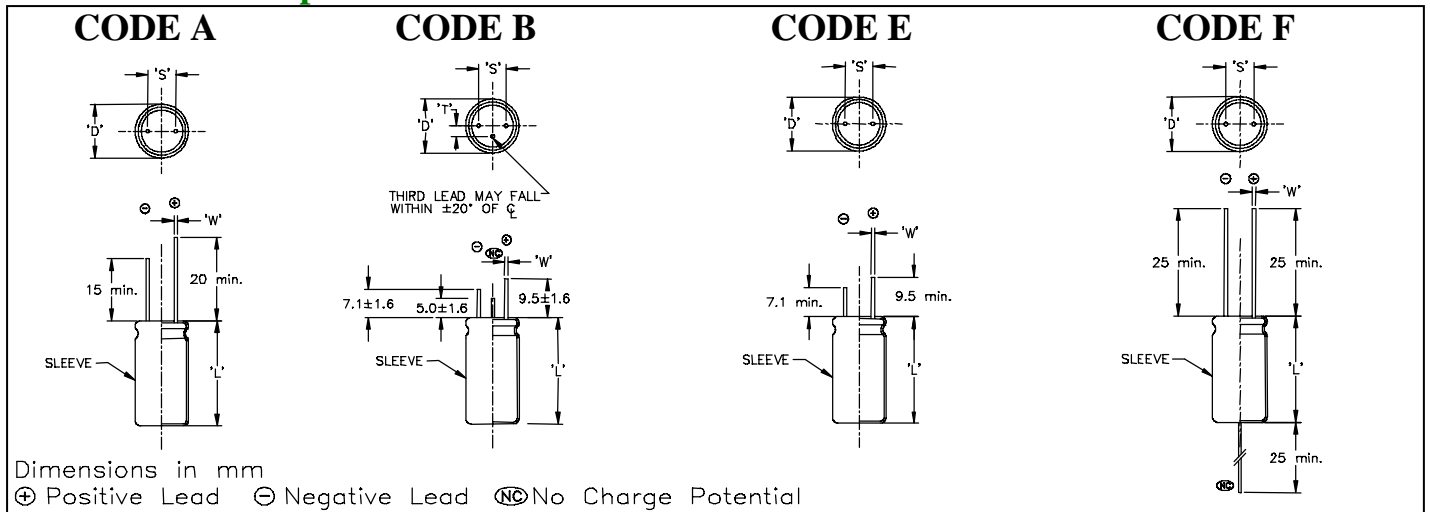
Frequency (Hz):

| VDC     | 120  | 1k   | 10k  | 20k+ |
|---------|------|------|------|------|
| 200-450 | 0.60 | 0.80 | 0.82 | 1.00 |

## PART NUMBER BREAK-DOWN:



## Radial-Leaded Capacitor Dimensions



**Table 1. Case Dimensions mm(in.)**

| CASE CODE | NOMINAL      |              | STYLES 2 & 3 |              | STYLES 5 & 6 (w/EPOXY) |              | LEAD SPACING |             | WIRE GAUGE 'W'     |
|-----------|--------------|--------------|--------------|--------------|------------------------|--------------|--------------|-------------|--------------------|
|           | 'D'          | 'L'          | 'D' MAX.     | 'L' MAX.     | 'D' MAX.               | 'L' MAX.     | S ± 0.6      | T ± 0.5     |                    |
| DG        | 12.5 (0.492) | 20.0 (0.787) | 13.0 (0.512) | 21.2 (0.835) | 13.0 (0.512)           | 23.0 (0.906) | 5.0 (0.197)  | 2.5 (0.098) | No. 20 AWG (0.032) |
| DK        | 12.5 (0.492) | 25.0 (0.984) | 13.0 (0.512) | 26.2 (1.032) | 13.0 (0.512)           | 29.0 (1.142) | 5.0 (0.197)  | 2.5 (0.098) | No. 20 AWG (0.032) |
| DM        | 12.5 (0.492) | 26.5 (1.043) | 13.0 (0.512) | 28.0 (1.102) | 13.0 (0.512)           | 29.5 (1.161) | 5.0 (0.197)  | 2.5 (0.098) | No. 20 AWG (0.032) |
| DT        | 12.5 (0.492) | 33.5 (1.319) | 13.0 (0.512) | 34.2 (1.347) | 13.0 (0.512)           | 36.0 (1.417) | 5.0 (0.197)  | 2.5 (0.098) | No. 20 AWG (0.032) |
| DS        | 12.5 (0.492) | 42.5 (1.673) | 13.0 (0.512) | 43.7 (1.721) | 13.0 (0.512)           | 45.5 (1.791) | 5.0 (0.197)  | 2.5 (0.098) | No. 20 AWG (0.032) |
| EK        | 16.0 (0.630) | 25.0 (0.984) | 16.5 (0.650) | 26.2 (1.032) | 16.5 (0.650)           | 27.9 (1.098) | 7.5 (0.295)  | 3.5 (0.138) | No. 20 AWG (0.032) |
| EN        | 16.0 (0.630) | 32.0 (0.260) | 16.5 (0.650) | 33.5 (1.319) | 16.5 (0.650)           | 36.0 (1.417) | 7.5 (0.295)  | 3.5 (0.138) | No. 20 AWG (0.032) |
| ER        | 16.0 (0.630) | 36.0 (1.417) | 16.5 (0.650) | 37.5 (1.476) | 16.5 (0.650)           | 40.0 (1.575) | 7.5 (0.295)  | 3.5 (0.138) | No. 20 AWG (0.032) |
| EU        | 16.0 (0.630) | 40.0 (1.575) | 16.5 (0.650) | 41.7 (1.642) | 16.5 (0.650)           | 42.4 (1.669) | 7.5 (0.295)  | 3.5 (0.138) | No. 20 AWG (0.032) |
| FR        | 18.0 (0.709) | 36.0 (1.417) | 18.5 (0.728) | 37.5 (1.476) | 18.5 (0.728)           | 40.0 (1.575) | 7.5 (0.295)  | 3.5 (0.138) | No. 20 AWG (0.032) |
| FV        | 18.0 (0.709) | 40.0 (1.575) | 18.5 (0.728) | 41.7 (1.642) | 18.5 (0.728)           | 42.4 (1.669) | 7.5 (0.295)  | 3.5 (0.138) | No. 20 AWG (0.032) |

## STANDARD RATINGS FOR TYPE 105RB

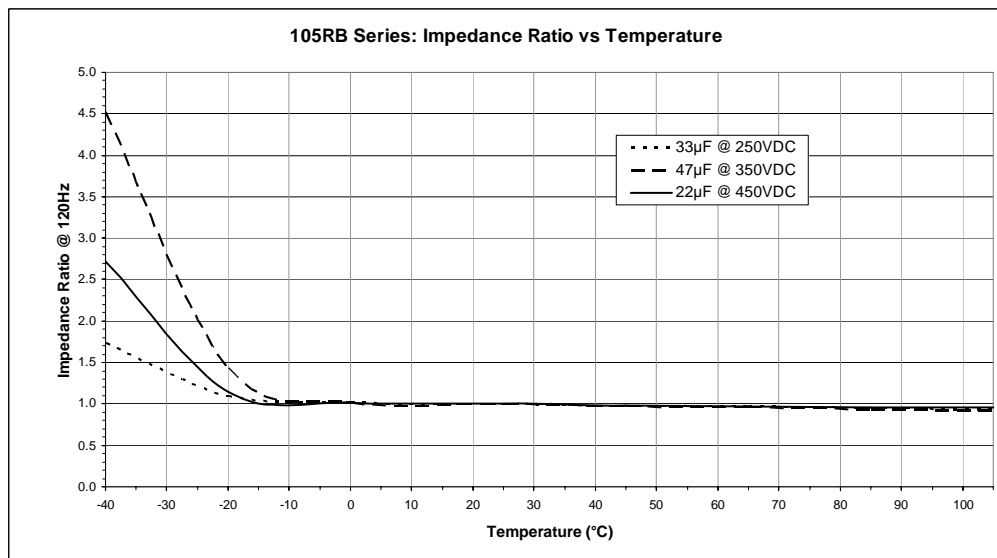
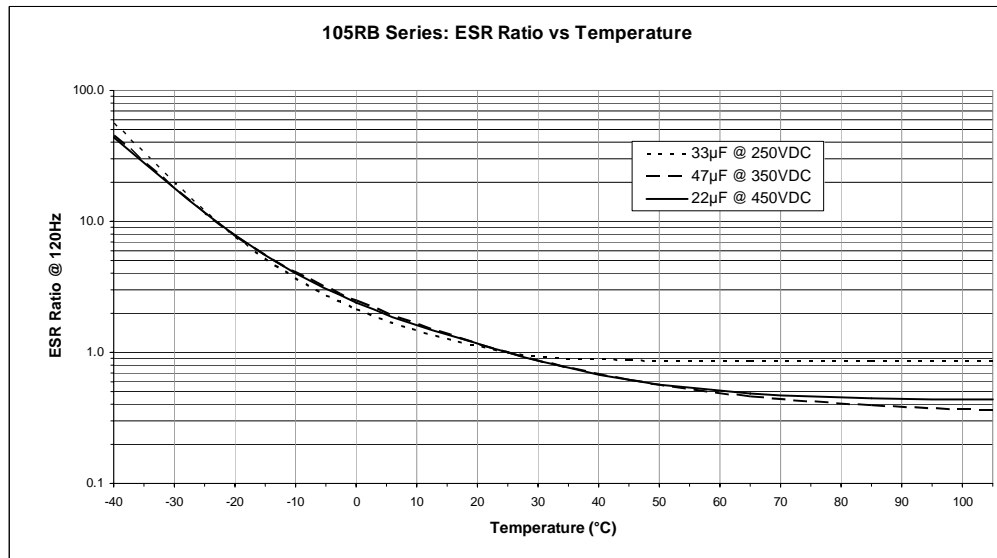
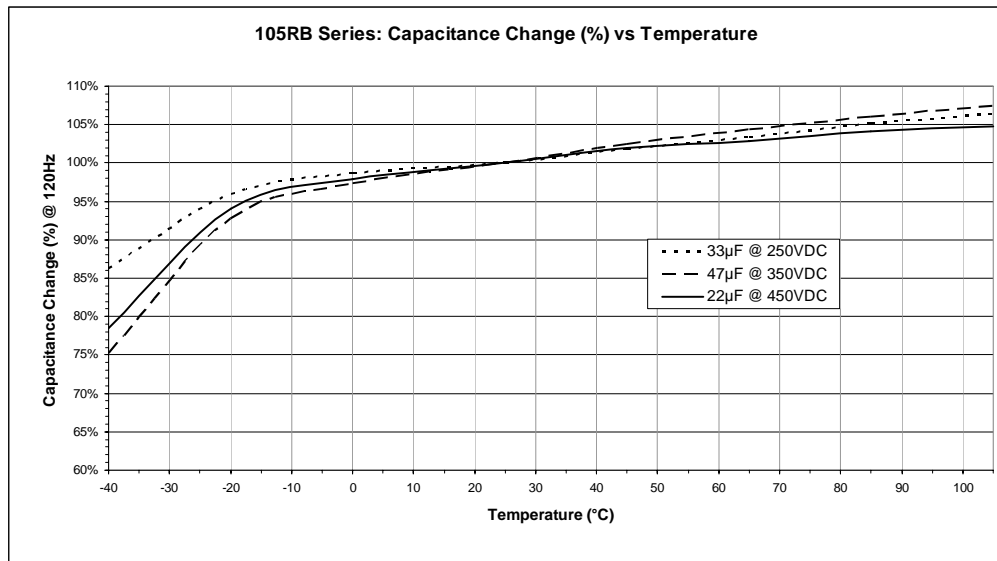
| Rated Capacitance<br>( $\mu\text{F}$ )          | Catalog Number   | Nominal Case Size<br>D x L<br>(mm) | Max. ESR<br>+25°C<br>120Hz<br>( $\Omega$ ) | Max. Ripple Current<br>+85°C 120Hz<br>( $A_{\text{rms}}$ ) | Max. ESR<br>+25°C<br>20kHz<br>( $\Omega$ ) | Max. Ripple Current<br>+85°C 20kHz<br>( $A_{\text{rms}}$ ) |
|-------------------------------------------------|------------------|------------------------------------|--------------------------------------------|------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------|
| <b>200 VOLTS DC WORKING, 250 VOLTS DC SURGE</b> |                  |                                    |                                            |                                                            |                                            |                                                            |
| 33                                              | 105RB336M200DG2A | 12.5 x 20.0                        | 3.401                                      | 0.235                                                      | 1.450                                      | 0.360                                                      |
| 47                                              | 105RB476M200DK2A | 12.5 x 25.0                        | 2.612                                      | 0.292                                                      | 1.033                                      | 0.464                                                      |
| 56                                              | 105RB566M200DM2A | 12.5 x 26.5                        | 2.155                                      | 0.330                                                      | 1.156                                      | 0.450                                                      |
| 68                                              | 105RB686M200DT2A | 12.5 x 33.5                        | 1.757                                      | 0.399                                                      | 0.671                                      | 0.646                                                      |
| 82                                              | 105RB826M200DS2A | 12.5 x 42.5                        | 1.395                                      | 0.499                                                      | 0.613                                      | 0.753                                                      |
| 68                                              | 105RB686M200EK2A | 16.0 x 25.0                        | 1.796                                      | 0.411                                                      | 0.762                                      | 0.632                                                      |
| 82                                              | 105RB826M200EN2A | 16.0 x 32.0                        | 1.330                                      | 0.537                                                      | 0.356                                      | 1.020                                                      |
| 100                                             | 105RB107M200ER2A | 16.0 x 36.0                        | 1.150                                      | 0.624                                                      | 0.291                                      | 1.184                                                      |
| 120                                             | 105RB127M200EU2A | 16.0 x 40.0                        | 0.980                                      | 0.709                                                      | 0.243                                      | 1.344                                                      |
| 220                                             | 105RB227M200FR2A | 18.0 x 36.0                        | 0.600                                      | 0.890                                                      | 0.253                                      | 1.367                                                      |
| 270                                             | 105RB277M200FV2A | 18.0 x 40.0                        | 0.457                                      | 1.068                                                      | 0.208                                      | 1.581                                                      |
| <b>250 VOLTS DC WORKING, 300 VOLTS DC SURGE</b> |                  |                                    |                                            |                                                            |                                            |                                                            |
| 22                                              | 105RB226M250DG2A | 12.5 x 20.0                        | 6.500                                      | 0.185                                                      | 1.903                                      | 0.315                                                      |
| 33                                              | 105RB336M250DK2A | 12.5 x 25.0                        | 4.410                                      | 0.249                                                      | 1.233                                      | 0.425                                                      |
| 39                                              | 105RB396M250DM2A | 12.5 x 26.5                        | 3.140                                      | 0.289                                                      | 1.038                                      | 0.475                                                      |
| 47                                              | 105RB476M250DT2A | 12.5 x 33.5                        | 3.140                                      | 0.354                                                      | 1.027                                      | 0.522                                                      |
| 68                                              | 105RB686M250DS2A | 12.5 x 42.5                        | 1.610                                      | 0.468                                                      | 0.582                                      | 0.773                                                      |
| 56                                              | 105RB566M250EK2A | 16.0 x 25.0                        | 3.140                                      | 0.386                                                      | 0.731                                      | 0.645                                                      |
| 82                                              | 105RB826M250EN2A | 16.0 x 32.0                        | 1.830                                      | 0.511                                                      | 0.492                                      | 0.868                                                      |
| 100                                             | 105RB107M250ER2A | 16.0 x 36.0                        | 1.170                                      | 0.602                                                      | 0.390                                      | 1.023                                                      |
| 120                                             | 105RB127M250EU2A | 16.0 x 40.0                        | 0.980                                      | 0.675                                                      | 0.334                                      | 1.145                                                      |
| 150                                             | 105RB157M250FR2A | 18.0 x 36.0                        | 0.830                                      | 0.796                                                      | 0.273                                      | 1.318                                                      |
| 180                                             | 105RB187M250FV2A | 18.0 x 40.0                        | 0.750                                      | 0.918                                                      | 0.226                                      | 1.517                                                      |
| <b>300 VOLTS DC WORKING, 350 VOLTS DC SURGE</b> |                  |                                    |                                            |                                                            |                                            |                                                            |
| 18                                              | 105RB186M300DG2A | 12.5 x 20.0                        | 10.46                                      | 0.134                                                      | 6.076                                      | 0.176                                                      |
| 22                                              | 105RB226M300DK2A | 12.5 x 25.0                        | 7.100                                      | 0.177                                                      | 4.505                                      | 0.222                                                      |
| 27                                              | 105RB276M300DM2A | 12.5 x 26.5                        | 6.060                                      | 0.197                                                      | 3.650                                      | 0.253                                                      |
| 39                                              | 105RB396M300DT2A | 12.5 x 33.5                        | 4.020                                      | 0.264                                                      | 2.491                                      | 0.335                                                      |
| 47                                              | 105RB476M300DS2A | 12.5 x 42.5                        | 3.410                                      | 0.320                                                      | 2.045                                      | 0.413                                                      |
| 56                                              | 105RB566M300EK2A | 16.0 x 25.0                        | 3.285                                      | 0.304                                                      | 1.912                                      | 0.399                                                      |
| 68                                              | 105RB686M300EN2A | 16.0 x 32.0                        | 2.570                                      | 0.347                                                      | 1.437                                      | 0.508                                                      |
| 82                                              | 105RB826M300ER2A | 16.0 x 36.0                        | 1.960                                      | 0.457                                                      | 1.183                                      | 0.587                                                      |
| 100                                             | 105RB107M300EU2A | 16.0 x 40.0                        | 1.638                                      | 0.517                                                      | 0.968                                      | 0.673                                                      |
| 120                                             | 105RB127M300FR2A | 18.0 x 36.0                        | 1.356                                      | 0.591                                                      | 0.814                                      | 0.727                                                      |
| 150                                             | 105RB157M300FV2A | 18.0 x 40.0                        | 1.184                                      | 0.663                                                      | 0.694                                      | 0.866                                                      |
| <b>350 VOLTS DC WORKING, 400 VOLTS DC SURGE</b> |                  |                                    |                                            |                                                            |                                            |                                                            |
| 15                                              | 105RB156M350DG2A | 12.5 x 20.0                        | 10.90                                      | 0.132                                                      | 5.872                                      | 0.179                                                      |
| 22                                              | 105RB226M350DK2A | 12.5 x 25.0                        | 7.137                                      | 0.177                                                      | 4.073                                      | 0.234                                                      |
| 27                                              | 105RB276M350DM2A | 12.5 x 26.5                        | 6.270                                      | 0.193                                                      | 3.500                                      | 0.259                                                      |
| 33                                              | 105RB336M350DT2A | 12.5 x 33.5                        | 4.970                                      | 0.238                                                      | 2.540                                      | 0.332                                                      |
| 39                                              | 105RB396M350DS2A | 12.5 x 42.5                        | 4.120                                      | 0.294                                                      | 1.940                                      | 0.424                                                      |
| 47                                              | 105RB476M350EK2A | 16.0 x 25.0                        | 3.436                                      | 0.298                                                      | 1.826                                      | 0.408                                                      |
| 56                                              | 105RB566M350EN2A | 16.0 x 32.0                        | 2.870                                      | 0.360                                                      | 1.505                                      | 0.496                                                      |
| 68                                              | 105RB686M350ER2A | 16.0 x 36.0                        | 2.360                                      | 0.416                                                      | 1.231                                      | 0.575                                                      |
| 82                                              | 105RB826M350EU2A | 16.0 x 40.0                        | 1.960                                      | 0.473                                                      | 1.018                                      | 0.656                                                      |
| 100                                             | 105RB107M350FR2A | 18.0 x 36.0                        | 1.610                                      | 0.542                                                      | 0.859                                      | 0.742                                                      |
| 120                                             | 105RB127M350FV2A | 18.0 x 40.0                        | 1.340                                      | 0.625                                                      | 0.699                                      | 0.864                                                      |

**STANDARD RATINGS FOR TYPE 105RB**

| Rated Capacitance (μF)                          | Catalog Number   | Nominal Case Size D x L (mm) | Max. ESR +25°C 120Hz (Ω) | Max. Ripple Current +85°C 120Hz (A <sub>rms</sub> ) | Max. ESR +25°C 20kHz (Ω) | Max. Ripple Current +85°C 20kHz (A <sub>rms</sub> ) |
|-------------------------------------------------|------------------|------------------------------|--------------------------|-----------------------------------------------------|--------------------------|-----------------------------------------------------|
| <b>400 VOLTS DC WORKING, 450 VOLTS DC SURGE</b> |                  |                              |                          |                                                     |                          |                                                     |
| 10                                              | 105RB106M400DG2A | 12.5 x 20.0                  | 16.10                    | 0.108                                               | 8.559                    | 0.148                                               |
| 15                                              | 105RB156M400DK2A | 12.5 x 25.0                  | 10.70                    | 0.145                                               | 5.097                    | 0.209                                               |
| 18                                              | 105RB186M400DM2A | 12.5 x 26.5                  | 8.920                    | 0.162                                               | 4.693                    | 0.223                                               |
| 22                                              | 105RB226M400DT2A | 12.5 x 33.5                  | 7.510                    | 0.198                                               | 3.405                    | 0.287                                               |
| 33                                              | 105RB336M400DS2A | 12.5 x 42.5                  | 4.870                    | 0.272                                               | 2.247                    | 0.394                                               |
| 33                                              | 105RB336M400EK2A | 16.0 x 25.0                  | 5.950                    | 0.239                                               | 2.554                    | 0.345                                               |
| 39                                              | 105RB396M400EN2A | 16.0 x 32.0                  | 4.120                    | 0.303                                               | 1.930                    | 0.438                                               |
| 47                                              | 105RB476M400ER2A | 16.0 x 36.0                  | 3.420                    | 0.350                                               | 1.590                    | 0.506                                               |
| 56                                              | 105RB566M400EU2A | 16.0 x 40.0                  | 2.870                    | 0.397                                               | 1.331                    | 0.573                                               |
| 68                                              | 105RB686M400FR2A | 18.0 x 36.0                  | 2.360                    | 0.453                                               | 1.105                    | 0.655                                               |
| 82                                              | 105RB826M400FV2A | 18.0 x 40.0                  | 1.960                    | 0.523                                               | 0.912                    | 0.756                                               |
| <b>450 VOLTS DC WORKING, 500 VOLTS DC SURGE</b> |                  |                              |                          |                                                     |                          |                                                     |
| 6.8                                             | 105RB685M450DG2A | 12.5 x 20.0                  | 24.50                    | 0.094                                               | 9.026                    | 0.144                                               |
| 10                                              | 105RB106M450DK2A | 12.5 x 25.0                  | 16.66                    | 0.130                                               | 5.577                    | 0.200                                               |
| 15                                              | 105RB156M450DM2A | 12.5 x 26.5                  | 11.10                    | 0.148                                               | 4.486                    | 0.228                                               |
| 18                                              | 105RB186M450DT2A | 12.5 x 33.5                  | 9.200                    | 0.183                                               | 3.536                    | 0.281                                               |
| 22                                              | 105RB226M450DS2A | 12.5 x 42.5                  | 7.570                    | 0.233                                               | 2.711                    | 0.358                                               |
| 22                                              | 105RB226M450EK2A | 16.0 x 25.0                  | 7.570                    | 0.215                                               | 2.793                    | 0.330                                               |
| 27                                              | 105RB276M450EN2A | 16.0 x 32.0                  | 5.980                    | 0.270                                               | 2.156                    | 0.415                                               |
| 33                                              | 105RB336M450ER2A | 16.0 x 36.0                  | 5.050                    | 0.308                                               | 1.821                    | 0.473                                               |
| 39                                              | 105RB396M450EU2A | 16.0 x 40.0                  | 4.270                    | 0.348                                               | 1.535                    | 0.534                                               |
| 56                                              | 105RB566M450FR2A | 18.0 x 36.0                  | 2.970                    | 0.425                                               | 1.116                    | 0.651                                               |
| 68                                              | 105RB686M450FV2A | 18.0 x 40.0                  | 2.430                    | 0.501                                               | 0.882                    | 0.770                                               |

# 105RB TYPICAL PERFORMANCE PROFILES

## TEMPERATURE CHARACTERISTICS



# 105RB TYPICAL PERFORMANCE PROFILES

## FREQUENCY CHARACTERISTICS

