

# Panasonic V-Series ±5% Stacked Metallized Film Capacitors

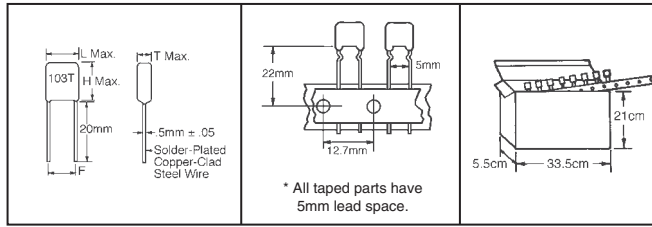
Suitable for Replacement of Monolithic Ceramic Capacitors in Most Cases

**FEATURES:** • High volumetric efficiency • Low dissipation factor • Stacked and non-inductive construction • Operating temperature range: -40°C - 85°C • Temperature coefficient ΔC/c: 200 ppm • Dissipation factor (maximum): 1.0% • Insulation resistance (25°C): 1000MΩ μF • Self-healing

**APPLICATIONS:** • Blocking, by-pass and coupling of DC • Pulse, logic and timing circuits • Light duty pulse forming • Filter and noise suppression

**PANASONIC ECQ-V CROSS REFERENCE**  
**Sprague:** 453P/454P. **CSF Thompson:** IRD  
**Siemens:** B32509.

(To convert millimeters to inches divide by 25.4)



**+ Panasonic V-Series Stacked Metallized Film Capacitors Digi-Key® V-Series Capacitors Kit**  
**P4542-KIT-ND\* (50 Volt K) ..... 36.26**  
**P4700-KIT-ND† (100 Volt K) ..... 36.26**  
 Includes 10 each of those parts indicated below (\* or †). 100 capacitors. 10 each of the values listed in the chart. Price includes a notebook style storage box with bin guide for easy storage and quick access.

**F**

| Working Voltage     | Cap. μF | Dimensions (mm) |      |      |           | Digi-Key Part No. | Pricing |        |          |          | Panasonic Part No. |              |
|---------------------|---------|-----------------|------|------|-----------|-------------------|---------|--------|----------|----------|--------------------|--------------|
|                     |         | L               | T    | H    | F         |                   | 10      | 100    | 1,000    | 5,000    |                    | 10,000       |
| <b>Bulk Package</b> |         |                 |      |      |           |                   |         |        |          |          |                    |              |
| 50                  | 0.01    | 7.3             | 3.2  | 5.0  | 5.0       | P4513-ND♦         | .69     | 5.74   | 34.12    | 31.95/M  | 29.77/M            | ECQ-V1H103JL |
|                     | 0.012   | 7.3             | 3.2  | 5.0  | 5.0       | P4514-ND♦         | .86     | 7.11   | 42.83    | 39.21/M  | 37.03/M            | ECQ-V1H123JL |
|                     | 0.015   | 7.3             | 3.2  | 5.0  | 5.0       | P4515-ND♦         | .86     | 7.11   | 42.83    | 39.21/M  | 37.03/M            | ECQ-V1H153JL |
|                     | 0.018   | 7.3             | 3.2  | 5.0  | 5.0       | P4516-ND♦         | .86     | 7.11   | 42.83    | 39.21/M  | 37.03/M            | ECQ-V1H183JL |
|                     | 0.022   | 7.3             | 3.2  | 5.0  | 5.0       | P4517-ND♦         | .91     | 7.54   | 45.01    | 42.11/M  | 39.21/M            | ECQ-V1H223JL |
|                     | 0.027   | 7.3             | 3.2  | 5.0  | 5.0       | P4518-ND♦         | .93     | 7.73   | 46.46    | 42.84/M  | 39.93/M            | ECQ-V1H273JL |
|                     | 0.033   | 7.3             | 3.2  | 5.0  | 5.0       | P4519-ND♦         | .97     | 8.13   | 48.64    | 45.02/M  | 42.11/M            | ECQ-V1H333JL |
|                     | 0.039   | 7.3             | 3.2  | 5.0  | 5.0       | P4520-ND♦         | 1.01    | 8.39   | 50.09    | 46.47/M  | 43.56/M            | ECQ-V1H393JL |
|                     | 0.047   | 7.3             | 3.2  | 5.0  | 5.0       | P4521-ND♦         | .73     | 6.10   | 36.30    | 34.13/M  | 31.95/M            | ECQ-V1H473JL |
|                     | 0.056   | 7.3             | 3.2  | 5.0  | 5.0       | P4522-ND♦         | .73     | 6.10   | 36.30    | 34.13/M  | 31.95/M            | ECQ-V1H563JL |
|                     | 0.068   | 7.3             | 3.2  | 5.0  | 5.0       | P4523-ND♦         | .76     | 6.32   | 37.75    | 34.85/M  | 32.67/M            | ECQ-V1H683JL |
|                     | 0.082   | 7.3             | 3.6  | 5.0  | 5.0       | P4524-ND♦         | .78     | 6.52   | 39.20    | 36.30/M  | 34.13/M            | ECQ-V1H823JL |
|                     | 0.1     | 7.3             | 4.0  | 5.0  | 5.0       | P4525-ND♦         | .78     | 6.52   | 39.20    | 36.30/M  | 34.13/M            | ECQ-V1H104JL |
|                     | 0.12    | 7.3             | 4.0  | 5.0  | 5.0       | P4526-ND♦         | .83     | 6.92   | 41.38    | 38.48/M  | 35.58/M            | ECQ-V1H124JL |
|                     | 0.15    | 10.2            | 3.4  | 9.0  | 7.5       | P4538-ND          | 1.50    | 12.52  | 74.78    | 69.70/M  | 65.34/M            | ECQ-V1H154JL |
|                     | 0.15    | 7.3             | 4.4  | 5.5  | 5.0       | P4665-ND♦         | .86     | 7.11   | 42.83    | 39.21/M  | 37.03/M            | ECQ-V1H154JL |
|                     | 0.18    | 7.3             | 4.5  | 5.5  | 5.0       | P4666-ND♦         | .91     | 7.54   | 45.01    | 42.11/M  | 39.21/M            | ECQ-V1H184JL |
|                     | 0.22    | 7.3             | 4.8  | 5.5  | 5.0       | P4667-ND♦         | .97     | 8.13   | 48.64    | 45.02/M  | 42.11/M            | ECQ-V1H224JL |
|                     | 0.27    | 7.3             | 4.6  | 7.0  | 5.0       | P4668-ND♦         | 1.02    | 8.55   | 50.82    | 47.19/M  | 44.29/M            | ECQ-V1H274JL |
|                     | 0.33    | 7.3             | 5.2  | 7.0  | 5.0       | P4669-ND♦         | 1.10    | 9.15   | 54.45    | 50.82/M  | 47.19/M            | ECQ-V1H334JL |
| 0.39                | 7.3     | 5.7             | 7.3  | 5.0  | P4670-ND♦ | 1.20              | 9.97    | 59.53  | 55.18/M  | 51.55/M  | ECQ-V1H394JL       |              |
| 0.47                | 7.3     | 6.0             | 7.3  | 5.0  | P4671-ND♦ | 1.32              | 10.98   | 65.34  | 60.99/M  | 57.36/M  | ECQ-V1H474JL       |              |
| 0.56                | 7.3     | 5.8             | 10.0 | 5.0  | P4672-ND♦ | 1.56              | 13.02   | 77.68  | 72.60/M  | 67.52/M  | ECQ-V1H564JL       |              |
| 0.68                | 7.3     | 6.5             | 10.0 | 5.0  | P4673-ND♦ | 2.34              | 19.53   | 116.89 | 108.18/M | 101.64/M | ECQ-V1H684JL       |              |
| 0.82                | 7.3     | 6.8             | 10.0 | 5.0  | P4674-ND♦ | 2.34              | 19.53   | 116.89 | 108.18/M | 101.64/M | ECQ-V1H824JL       |              |
| 1.0                 | 7.3     | 8.0             | 11.0 | 5.0  | P4675-ND♦ | 2.80              | 23.38   | 139.39 | 129.96/M | 121.25/M | ECQ-V1H105JL       |              |
| 63                  | 0.18    | 10.2            | 3.5  | 9.0  | 7.5       | P4539-ND♦         | .89     | 7.44   | 44.29    | 41.39/M  | 38.48/M            | ECQ-V1J184JM |
|                     | 0.22    | 10.2            | 3.5  | 9.0  | 7.5       | P4540-ND♦         | .97     | 8.02   | 47.92    | 44.29/M  | 41.39/M            | ECQ-V1J224JM |
|                     | 0.27    | 10.2            | 3.5  | 9.0  | 7.5       | P4541-ND♦         | 1.02    | 8.44   | 50.09    | 47.19/M  | 43.56/M            | ECQ-V1J274JM |
|                     | 0.33    | 10.2            | 3.8  | 9.0  | 7.5       | P4549-ND♦         | 1.08    | 9.02   | 53.72    | 50.10/M  | 47.19/M            | ECQ-V1J334JM |
|                     | 0.39    | 10.2            | 4.0  | 9.0  | 7.5       | P4543-ND♦         | 1.18    | 9.84   | 59.81    | 54.45/M  | 50.82/M            | ECQ-V1J394JM |
|                     | 0.47    | 10.2            | 4.5  | 9.0  | 7.5       | P4544-ND♦         | 1.30    | 10.84  | 64.61    | 60.26/M  | 56.63/M            | ECQ-V1J474JM |
|                     | 0.56    | 10.2            | 4.9  | 9.0  | 7.5       | P4545-ND♦         | 1.54    | 12.85  | 76.96    | 71.15/M  | 66.80/M            | ECQ-V1J564JM |
|                     | 0.68    | 10.2            | 5.5  | 10.0 | 7.5       | P4546-ND♦         | 2.31    | 19.26  | 114.71   | 106.73/M | 100.19/M           | ECQ-V1J684JM |
|                     | 0.82    | 10.2            | 6.1  | 10.0 | 7.5       | P4547-ND♦         | 2.31    | 19.26  | 114.71   | 106.73/M | 100.19/M           | ECQ-V1J824JM |
|                     | 1.0     | 10.2            | 6.9  | 10.0 | 7.5       | P4548-ND♦         | 2.77    | 23.05  | 137.94   | 127.78/M | 119.79/M           | ECQ-V1J105JM |
| 100                 | 0.01    | 7.3             | 3.2  | 7.0  | 5.0       | P4713-ND†         | .93     | 7.73   | 46.46    | 42.84/M  | 39.93/M            | ECQ-V1103JM  |
|                     | 0.012   | 7.3             | 3.2  | 7.0  | 5.0       | P4714-ND†         | .93     | 7.73   | 46.46    | 42.84/M  | 39.93/M            | ECQ-V1123JM  |
|                     | 0.015   | 7.3             | 3.2  | 7.0  | 5.0       | P4715-ND†         | .93     | 7.73   | 46.46    | 42.84/M  | 39.93/M            | ECQ-V1153JM  |
|                     | 0.018   | 7.3             | 3.2  | 7.0  | 5.0       | P4716-ND†         | .98     | 8.19   | 48.64    | 45.74/M  | 42.84/M            | ECQ-V1183JM  |
|                     | 0.022   | 7.3             | 3.2  | 7.0  | 5.0       | P4717-ND†         | 1.01    | 8.39   | 50.09    | 46.47/M  | 43.56/M            | ECQ-V1223JM  |
|                     | 0.027   | 7.3             | 3.2  | 7.0  | 5.0       | P4718-ND†         | 1.06    | 8.84   | 53.00    | 49.37/M  | 45.74/M            | ECQ-V1273JM  |
|                     | 0.033   | 7.3             | 3.2  | 7.0  | 5.0       | P4719-ND†         | 1.10    | 9.11   | 54.45    | 50.82/M  | 47.19/M            | ECQ-V1333JM  |
|                     | 0.039   | 7.3             | 3.2  | 7.0  | 5.0       | P4720-ND†         | .80     | 6.64   | 39.93    | 37.03/M  | 34.85/M            | ECQ-V1393JM  |
|                     | 0.047   | 7.3             | 4.0  | 7.0  | 5.0       | P4721-ND†         | .80     | 6.64   | 39.93    | 37.03/M  | 34.85/M            | ECQ-V1473JM  |
|                     | 0.056   | 7.3             | 4.2  | 7.0  | 5.0       | P4722-ND†         | .82     | 6.86   | 40.66    | 37.76/M  | 35.58/M            | ECQ-V1563JM  |
|                     | 0.068   | 7.3             | 4.5  | 7.0  | 5.0       | P4723-ND†         | .85     | 7.10   | 42.11    | 39.21/M  | 37.03/M            | ECQ-V1683JM  |
|                     | 0.082   | 7.3             | 5.0  | 7.0  | 5.0       | P4724-ND†         | .85     | 7.10   | 42.11    | 39.21/M  | 37.03/M            | ECQ-V1823JM  |
|                     | 0.1     | 7.3             | 5.8  | 7.0  | 5.0       | P4725-ND†         | .91     | 7.54   | 45.01    | 42.11/M  | 39.21/M            | ECQ-V1104JM  |
|                     | 0.12    | 10.0            | 3.4  | 9.0  | 7.5       | P4726-ND♦         | .93     | 7.73   | 46.46    | 42.84/M  | 39.93/M            | ECQ-V1124JM  |
|                     | 0.15    | 10.0            | 3.8  | 9.0  | 7.5       | P4727-ND♦         | .98     | 8.19   | 48.64    | 45.74/M  | 42.84/M            | ECQ-V1154JM  |
|                     | 0.18    | 10.0            | 4.0  | 9.0  | 7.5       | P4728-ND♦         | 1.06    | 8.84   | 53.00    | 49.37/M  | 45.74/M            | ECQ-V1184JM  |
|                     | 0.22    | 10.0            | 4.3  | 9.0  | 7.5       | P4729-ND♦         | 1.12    | 9.29   | 55.18    | 51.55/M  | 47.92/M            | ECQ-V1224JM  |
|                     | 0.27    | 10.0            | 5.2  | 10.0 | 7.5       | P4730-ND♦         | 1.19    | 9.93   | 59.53    | 55.18/M  | 51.55/M            | ECQ-V1274JM  |
|                     | 0.33    | 10.0            | 5.9  | 10.0 | 7.5       | P4731-ND♦         | 1.30    | 10.84  | 64.61    | 60.26/M  | 56.63/M            | ECQ-V1334JM  |
|                     | 0.39    | 10.0            | 7.5  | 11.0 | 7.5       | P4732-ND♦         | 1.43    | 11.93  | 71.15    | 66.07/M  | 61.71/M            | ECQ-V1394JM  |
| 0.47                | 10.0    | 8.1             | 11.0 | 7.5  | P4733-ND♦ | 1.70              | 14.14   | 84.22  | 78.41/M  | 73.33/M  | ECQ-V1474JM        |              |

♦ RoHS Compliant

| Working Voltage                          | Cap. μF | Dimensions (mm) |      |     |            | Digi-Key Part No. | Pricing |         |         |         | Panasonic Part No. |               |               |
|--|---------|-----------------|------|-----|------------|-------------------|---------|---------|---------|---------|--------------------|---------------|---------------|
|  |         | L               | T    | H   | F          |                   | 1,000   | 2,000   | 5,000   | 6,000   |                    | 10,000        | 26,000        |
| <b>Ammo Box Package — RoHS Compliant</b> |         |                 |      |     |            |                   |         |         |         |         |                    |               |               |
| 50                                       | 0.01    | 7.3             | 3.2  | 7.0 | 5.0        | P4513TB-ND        | —       | 41.38/M | —       | 38.48/M | 35.58/M            | 33.40/M       | ECQ-V1H103JL3 |
|  | 0.012   | 7.3             | 3.2  | 7.0 | 5.0        | P4514TB-ND        | —       | 42.84/M | —       | 39.21/M | 37.03/M            | 34.85/M       | ECQ-V1H123JL3 |
|  | 0.015   | 7.3             | 3.2  | 7.0 | 5.0        | P4515TB-ND        | —       | 42.84/M | —       | 39.21/M | 37.03/M            | 34.85/M       | ECQ-V1H153JL3 |
|  | 0.018   | 7.3             | 3.2  | 7.0 | 5.0        | P4516TB-ND        | —       | 42.84/M | —       | 39.21/M | 37.03/M            | 34.85/M       | ECQ-V1H183JL3 |
|  | 0.022   | 7.3             | 3.2  | 5.0 | 5.0        | P4517TB-ND        | —       | 31.95/M | —       | 29.77/M | 27.59/M            | 26.14/M       | ECQ-V1H223JL3 |
|  | 0.027   | 7.3             | 3.2  | 7.0 | 5.0        | P4518TB-ND        | —       | 46.47/M | —       | 42.84/M | 39.93/M            | 37.76/M       | ECQ-V1H273JL3 |
|  | 0.033   | 7.3             | 3.2  | 7.0 | 5.0        | P4519TB-ND        | —       | 48.64/M | —       | 45.02/M | 42.11/M            | 39.93/M       | ECQ-V1H333JL3 |
|  | 0.039   | 7.3             | 3.2  | 5.0 | 5.0        | P4520TB-ND        | —       | 50.10/M | —       | 46.47/M | 43.56/M            | 40.66/M       | ECQ-V1H393JL3 |
|  | 0.047   | 7.3             | 3.2  | 7.0 | 5.0        | P4521TB-ND        | —       | 36.30/M | —       | 34.13/M | 31.95/M            | 29.77/M       | ECQ-V1H473JL3 |
|  | 0.056   | 7.3             | 3.2  | 5.0 | 5.0        | P4522TB-ND        | —       | 36.30/M | —       | 34.13/M | 31.95/M            | 29.77/M       | ECQ-V1H563JL3 |
|  | 0.068   | 7.3             | 3.9  | 7.0 | 5.0        | P4523TB-ND        | —       | 37.75/M | —       | 34.85/M | 32.67/M            | 30.50/M       | ECQ-V1H683JL3 |
|  | 0.082   | 7.3             | 4.1  | 7.0 | 5.0        | P4524TB-ND        | —       | 39.21/M | —       | 36.30/M | 34.13/M            | 31.95/M       | ECQ-V1H823JL3 |
|  | 0.1     | 7.3             | 4.4  | 7.0 | 5.0        | P4525TB-ND        | —       | 39.21/M | —       | 36.30/M | 34.13/M            | 31.95/M       | ECQ-V1H104JL3 |
|  | 0.12    | 10.0            | 3.4  | 9.0 | 5.0        | P4526TB-ND        | —       | 39.21/M | —       | 36.30/M | 34.13/M            | 31.95/M       | ECQ-V1H124JL3 |
|  | 0.15    | 10.0            | 3.4  | 9.0 | 5.0        | P4527TB-ND        | 42.83   | —       | 39.21/M | —       | 37.03/M            | —             | ECQ-V1H154JL3 |
|  | 0.18    | 10.0            | 3.5  | 9.0 | 5.0        | P4528TB-ND        | 45.01   | —       | 42.11/M | —       | 39.21/M            | —             | ECQ-V1H184JL3 |
|  | 0.22    | 10.0            | 3.7  | 9.0 | 5.0        | P4529TB-ND        | 48.64   | —       | 45.02/M | —       | 42.11/M            | —             | ECQ-V1H224JL3 |
|  | 0.27    | 10.0            | 4.0  | 9.0 | 5.0        | P4530TB-ND        | 50.82   | —       | 47.19/M | —       | 44.29/M            | —             | ECQ-V1H274JL3 |
|  | 0.33    | 10.0            | 4.2  | 9.0 | 5.0        | P4531TB-ND        | 54.45   | —       | 50.82/M | —       | 47.19/M            | —             | ECQ-V1H334JL3 |
|  | 0.39    | 10.0            | 4.9  | 9.0 | 5.0        | P4532TB-ND        | 59.53   | —       | 55.18/M | —       | 51.55/M            | —             | ECQ-V1H394JL3 |
| 0.47                                     | 10.0    | 5.5             | 10.0 | 5.0 | P4533TB-ND | 65.34             | —       | 60.99/M | —       | 57.36/M | —                  | ECQ-V1H474JL3 |               |
| 0.56                                     | 10.0    | 6.1             | 10.0 | 5.0 | P4534TB-ND | 77.68             | —       | 72.60/M | —       | 67.52/M | —                  | ECQ-V1H564JL3 |               |
| 0.68                                     | 10.0    | 6.8             | 10.0 | 5.0 | P45        |                   |         |         |         |         |                    |               |               |