



## Specifications

| Items                                                       | Characteristics                                                                                                                                                                                                    |      |      |                                      |      |      |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|--------------------------------------|------|------|
| Category temperature range                                  | -55 to +125°C                                                                                                                                                                                                      |      |      |                                      |      |      |
| Rated voltage range                                         | 25 to 80Vdc                                                                                                                                                                                                        |      |      |                                      |      |      |
| Capacitance range                                           | 10 to 560μF                                                                                                                                                                                                        |      |      |                                      |      |      |
| Capacitance tolerance                                       | ±20% [M] (at 20°C, 120Hz)                                                                                                                                                                                          |      |      |                                      |      |      |
| Leakage current                                             | I=0.01CV or 3μA whichever is greater (at 20°C, after 2 minutes)                                                                                                                                                    |      |      |                                      |      |      |
| Tangent of loss angle(tanδ)                                 | Rated voltage(V)                                                                                                                                                                                                   | 25   | 35   | 50                                   | 63   | 80   |
|                                                             | Tanδ                                                                                                                                                                                                               | 0.14 | 0.12 | 0.10                                 | 0.08 | 0.08 |
| (at 20°C, 120Hz)                                            |                                                                                                                                                                                                                    |      |      |                                      |      |      |
| ESR                                                         | Less than or equal to the value of Standard Ratings (at 20°C, 100kHz)                                                                                                                                              |      |      |                                      |      |      |
| Low temperature characteristics (Impedance ratio at 100kHz) | Z ( -25 °C) / Z ( +20 °C) ≤ 1.5<br>Z ( -55 °C) / Z ( +20 °C) ≤ 2.0                                                                                                                                                 |      |      |                                      |      |      |
| Endurance                                                   | 125°C, 4,000 hrs, apply the rated ripple current without exceeding the rated voltage                                                                                                                               |      |      |                                      |      |      |
|                                                             | Capacitance change                                                                                                                                                                                                 |      |      | Within±30% of the initial value      |      |      |
|                                                             | Tangent of loss angle (tanδ)                                                                                                                                                                                       |      |      | ≤200% of the initial specified value |      |      |
|                                                             | ESR(mΩ)                                                                                                                                                                                                            |      |      | ≤200% of the initial specified value |      |      |
|                                                             | Leakage current                                                                                                                                                                                                    |      |      | ≤The initial specified value         |      |      |
| Shelf life                                                  | After storage for 1,000 hrs at 125°C with no voltage applied and then being stabilized at 20°C, capacitors shall meet the specified values for the endurance characteristics listed above.(with voltage treatment) |      |      |                                      |      |      |
| Damp Heat (Steady State)                                    | 85°C, 85% RH, 2,000 hrs, rated voltage applied                                                                                                                                                                     |      |      |                                      |      |      |
|                                                             | Capacitance change                                                                                                                                                                                                 |      |      | Within±30% of the initial value      |      |      |
|                                                             | Tangent of loss angle (tanδ)                                                                                                                                                                                       |      |      | ≤200% of the initial specified value |      |      |
|                                                             | ESR(mΩ)                                                                                                                                                                                                            |      |      | ≤200% of the initial specified value |      |      |
|                                                             | Leakage current                                                                                                                                                                                                    |      |      | ≤The initial specified value         |      |      |

## Part numbering system

Example: HVS series, 80V / 33μF / Vibration resistant structure

|         |        |             |           |          |        |                               |
|---------|--------|-------------|-----------|----------|--------|-------------------------------|
| 80      | HVS    | 33          | M         | E        | 10     | V                             |
| Voltage | Series | Capacitance | Tolerance | Diameter | Length | Vibration resistant structure |

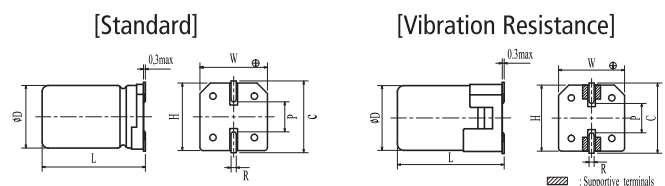
## Frequency coefficient for ripple current

| Frequency   | 120Hz | 1kHz | 10kHz | 100kHz |
|-------------|-------|------|-------|--------|
| Coefficient | 0.15  | 0.40 | 0.75  | 1.00   |

## Marking and Dimensions



## Dimensions



| [Standard] (unit: mm) |        |          |       |       |       |            |       |
|-----------------------|--------|----------|-------|-------|-------|------------|-------|
| Size                  | ØD±0.5 | L        | W±0.2 | H±0.2 | C±0.2 | R          | P±0.2 |
| 5.0×5.9               | 5.0    | 5.9±0.3  | 5.3   | 5.3   | 6.0   | 0.6 to 0.8 | 1.4   |
| 6.3×5.9               | 6.3    | 5.9±0.3  | 6.6   | 6.6   | 7.3   | 0.6 to 0.8 | 2.1   |
| 6.3×7.7               | 6.3    | 7.7±0.3  | 6.6   | 6.6   | 7.3   | 0.6 to 0.8 | 2.1   |
| 8.0×9.7               | 8.0    | 9.7±0.5  | 8.3   | 8.3   | 9.0   | 0.8 to 1.1 | 3.2   |
| 10.0×10.5             | 10.0   | 10.5±0.5 | 10.3  | 10.3  | 11.0  | 0.8 to 1.1 | 4.6   |
| 10.0×12.5             | 10.0   | 12.5±0.5 | 10.3  | 10.3  | 11.0  | 0.8 to 1.1 | 4.6   |
| 10.0×16.5             | 10.0   | 16.5±0.5 | 10.3  | 10.3  | 11.0  | 0.8 to 1.1 | 4.6   |

| [Vibration Resistance] (unit: mm) |        |          |       |       |       |            |       |
|-----------------------------------|--------|----------|-------|-------|-------|------------|-------|
| Size                              | ØD±0.5 | L        | W±0.2 | H±0.2 | C±0.2 | R          | P±0.2 |
| 6.3×6.2                           | 6.3    | 6.2±0.3  | 6.6   | 6.6   | 7.3   | 0.6 to 0.8 | 2.1   |
| 6.3×8.0                           | 8.0    | 8.0±0.3  | 6.6   | 6.6   | 7.3   | 0.6 to 0.8 | 2.1   |
| 8.0×9.9                           | 8.0    | 9.9±0.5  | 8.3   | 8.3   | 9.0   | 0.8 to 1.1 | 3.2   |
| 10.0×10.7                         | 10.0   | 10.7±0.5 | 10.3  | 10.3  | 11.0  | 0.8 to 1.1 | 4.6   |
| 10.0×12.7                         | 10.0   | 12.7±0.5 | 10.3  | 10.3  | 11.0  | 0.8 to 1.1 | 4.6   |
| 10.0×16.7                         | 10.0   | 16.7±0.5 | 10.3  | 10.3  | 11.0  | 0.8 to 1.1 | 4.6   |

## • Standard Ratings

| Rated Voltage [Vdc] | Rated Capacitance [μF] | Size ØD x L [mm] | ESR (20°C, 100kHz) [mΩ] [max.] | Rated Ripple Current (125°C, 100kHz) [mA <sub>rms</sub> ] | Part Number   |
|---------------------|------------------------|------------------|--------------------------------|-----------------------------------------------------------|---------------|
| 25                  | 33                     | 5.0 x 5.9        | 80                             | 550                                                       | 25HVC33MB6    |
|                     | 56                     | 6.3 x 5.9        | 50                             | 900                                                       | 25HVC56MC6□   |
|                     | 100                    | 6.3 x 7.7        | 30                             | 1400                                                      | 25HVC100MC8□  |
|                     | 100                    | 8.0 x 7.7        | 30                             | 1400                                                      | 25HVC100MC8□  |
|                     | 150                    | 8.0 x 9.7        | 27                             | 1600                                                      | 25HVC150MD10□ |
|                     | 220                    | 8.0 x 9.7        | 27                             | 1600                                                      | 25HVC220MD10□ |
|                     | 330                    | 10.0 x 10.5      | 20                             | 2000                                                      | 25HVC330ME10□ |
|                     | 560                    | 10.0 x 10.5      | 20                             | 2800                                                      | 25HVC560ME10□ |
| 35                  | 22                     | 5.0 x 5.9        | 100                            | 550                                                       | 35HVC22MB6    |
|                     | 47                     | 6.3 x 5.9        | 60                             | 900                                                       | 35HVC47MC6□   |
|                     | 68                     | 6.3 x 7.7        | 35                             | 1400                                                      | 35HVC68MC8□   |
|                     | 100                    | 8.0 x 9.7        | 27                             | 1600                                                      | 35HVC100MD10□ |
|                     | 150                    | 8.0 x 9.7        | 27                             | 1600                                                      | 35HVC150MD10□ |
|                     | 220                    | 8.0 x 10.5       | 27                             | 2000                                                      | 35HVC220MD10□ |
|                     | 220                    | 10.0 x 10.5      | 20                             | 2000                                                      | 35HVC220ME10□ |
|                     | 270                    | 10.0 x 10.5      | 20                             | 2000                                                      | 35HVC270ME10□ |
|                     | 470                    | 10.0 x 12.5      | 16                             | 4100                                                      | 35HVC470ME12□ |
| 50                  | 10                     | 5.0 x 5.9        | 120                            | 500                                                       | 50HVC10MB6    |
|                     | 22                     | 6.3 x 5.9        | 80                             | 750                                                       | 50HVC22MC6□   |
|                     | 33                     | 6.3 x 7.7        | 40                             | 1100                                                      | 50HVC33MC8□   |
|                     | 47                     | 8.0 x 9.7        | 35                             | 1250                                                      | 50HVC47MD10□  |
|                     | 68                     | 8.0 x 9.7        | 30                             | 1250                                                      | 50HVC68MD10□  |
|                     | 100                    | 10.0 x 10.5      | 28                             | 1600                                                      | 50HVC100ME10□ |
|                     | 120                    | 10.0 x 10.5      | 28                             | 1600                                                      | 50HVC120ME10□ |
|                     | 220                    | 10.0 x 16.5      | 13                             | 3900                                                      | 50HVC220ME16□ |
| 63                  | 10                     | 6.3 x 5.9        | 120                            | 700                                                       | 63HVC10MC6□   |
|                     | 22                     | 6.3 x 7.7        | 80                             | 900                                                       | 63HVC22MC8□   |
|                     | 33                     | 8.0 x 9.7        | 40                             | 1100                                                      | 63HVC33MD10□  |
|                     | 47                     | 8.0 x 9.7        | 40                             | 1100                                                      | 63HVC47MD10□  |
|                     | 56                     | 10.0 x 10.5      | 30                             | 1400                                                      | 63HVC56ME10□  |
|                     | 68                     | 10.0 x 10.5      | 30                             | 1400                                                      | 63HVC68ME10□  |
|                     | 82                     | 10.0 x 10.5      | 30                             | 1400                                                      | 63HVC82ME10□  |
|                     | 100                    | 10.0 x 12.5      | 28                             | 2100                                                      | 63HVC100ME12□ |
| 80                  | 22                     | 8.0 x 9.7        | 45                             | 1050                                                      | 80HVC22MD10□  |
|                     | 33                     | 10.0 x 10.5      | 35                             | 1360                                                      | 80HVC33ME10□  |
|                     | 47                     | 10.0 x 10.5      | 35                             | 1360                                                      | 80HVC47ME10□  |

\*Terminal Code : V(Vibration-proof products)