

**LV** series Radial Lead Type, Long Life Assurance



- High voltage (to 100V), Low ESR, High ripple current.
- Long life of 3000 hours at 105°C.
- Radial lead type:
  - Lead free flow soldering condition correspondence.
- Compliant to the RoHS directive (2002/95/EC).



## Specifications

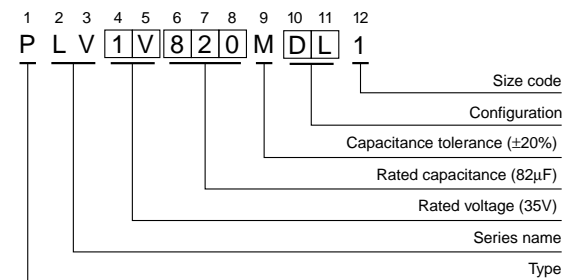
| Item  | Performance Characteristics  |  |                    |   |       |   |           |   |                       |   |
|---|--|--|--------------------|---|-------|---|-----------|---|-----------------------|---|
| Category Temperature Range                        | -55 to +105°C  |  |                    |   |       |   |           |   |                       |   |
| Rated Voltage Range                               | 16 to 100V   |  |                    |   |       |   |           |   |                       |   |
| Rated Capacitance Range                           | 6.8 to 470μF   |  |                    |   |       |   |           |   |                       |   |
| Capacitance Tolerance                             | ±20% at 120Hz, 20°C  |  |                    |   |       |   |           |   |                       |   |
| Tangent of loss angle (tan δ)                     | Less than or equal to the specified value at 120Hz, 20°C   |  |                    |   |       |   |           |   |                       |   |
| ESR (※ 1)   | Less than or equal to the specified value at 100kHz, 20°C  |  |                    |   |       |   |           |   |                       |   |
| Leakage Current (※ 2)                             | Less than or equal to the specified value. After 2 minutes' application of rated voltage at 20°C   |  |                    |   |       |   |           |   |                       |   |
| Temperature Characteristics (Max.Impedance Ratio) | $Z+105^{\circ}\text{C} / Z+20^{\circ}\text{C} \leq 1.25$ (100kHz)<br>$Z-55^{\circ}\text{C} / Z+20^{\circ}\text{C} \leq 1.25$   |  |                    |   |       |   |           |   |                       |   |
| Endurance   | The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 3000 hours at 105°C.   | <table border="1"> <tr><td>Capacitance change</td><td>Within ± 20% of the initial capacitance value (※ 3)</td></tr> <tr><td>tan δ</td><td>150% or less than the initial specified value</td></tr> <tr><td>ESR (※ 1)</td><td>150% or less than the initial specified value</td></tr> <tr><td>Leakage current (※ 2)</td><td>Less than or equal to the initial specified value</td></tr> </table> | Capacitance change | Within ± 20% of the initial capacitance value (※ 3) | tan δ | 150% or less than the initial specified value | ESR (※ 1) | 150% or less than the initial specified value | Leakage current (※ 2) | Less than or equal to the initial specified value |
| Capacitance change                                | Within ± 20% of the initial capacitance value (※ 3)  |  |                    |   |       |   |           |   |                       |   |
| tan δ   | 150% or less than the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| ESR (※ 1)   | 150% or less than the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| Leakage current (※ 2)                             | Less than or equal to the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| Damp Heat (Steady State)                          | The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 60°C, 90% RH.  | <table border="1"> <tr><td>Capacitance change</td><td>Within ± 20% of the initial capacitance value (※ 3)</td></tr> <tr><td>tan δ</td><td>150% or less than the initial specified value</td></tr> <tr><td>ESR (※ 1)</td><td>150% or less than the initial specified value</td></tr> <tr><td>Leakage current (※ 2)</td><td>Less than or equal to the initial specified value</td></tr> </table> | Capacitance change | Within ± 20% of the initial capacitance value (※ 3) | tan δ | 150% or less than the initial specified value | ESR (※ 1) | 150% or less than the initial specified value | Leakage current (※ 2) | Less than or equal to the initial specified value |
| Capacitance change                                | Within ± 20% of the initial capacitance value (※ 3)  |  |                    |   |       |   |           |   |                       |   |
| tan δ   | 150% or less than the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| ESR (※ 1)   | 150% or less than the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| Leakage current (※ 2)                             | Less than or equal to the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| Resistance to Soldering Heat                      | After soldering the capacitor under the soldering conditions prescribed here as preheat at 150 to 200°C for 60 to 180 seconds and peak temperature at 265°C for 10 seconds or less, the capacitor shall meet the specifications listed at right, provided that its temperature profile is measured at both of terminal ends facing the soldering side. | <table border="1"> <tr><td>Capacitance change</td><td>Within ± 10% of the initial capacitance value (※ 3)</td></tr> <tr><td>tan δ</td><td>130% or less than the initial specified value</td></tr> <tr><td>ESR (※ 1)</td><td>130% or less than the initial specified value</td></tr> <tr><td>Leakage current (※ 2)</td><td>Less than or equal to the initial specified value</td></tr> </table> | Capacitance change | Within ± 10% of the initial capacitance value (※ 3) | tan δ | 130% or less than the initial specified value | ESR (※ 1) | 130% or less than the initial specified value | Leakage current (※ 2) | Less than or equal to the initial specified value |
| Capacitance change                                | Within ± 10% of the initial capacitance value (※ 3)  |  |                    |   |       |   |           |   |                       |   |
| tan δ   | 130% or less than the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| ESR (※ 1)   | 130% or less than the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| Leakage current (※ 2)                             | Less than or equal to the initial specified value  |  |                    |   |       |   |           |   |                       |   |
| Marking   | Navy blue print on the case top  |  |                    |   |       |   |           |   |                       |   |

- ※ 1 ESR should be measured at both of the terminal ends closest to the capacitor body.
- ※ 2 Conditioning : If any doubt arises, measure the leakage current after the voltage treatment of applying DC rated voltage continuously to the capacitor for 120 minutes at 105°C.
- ※ 3 Initial value : The value before test of examination of resistance to soldering.

## Dimensions



## Type numbering system (Example : 35V 82μF)



(mm)

| Size | φ8 × 9L | φ8 × 12L | φ10 × 13L |
|------|---------|----------|-----------|
| φD   | 8.0     | 8.0      | 10.0      |
| L    | 8.5     | 11.5     | 12.5      |
| P    | 3.5     | 3.5      | 5.0       |
| φd   | 0.6     | 0.6      | 0.6       |

| Voltage | 16 | 20 | 25 | 35 | 50 | 63 | 80 | 100 |
|---------|----|----|----|----|----|----|----|-----|
| Code    | C  | D  | E  | V  | H  | J  | K  | 2A  |

Please refer to page 20 about the end seal configuration.

● Dimension table in next page.



■Standard Ratings

| Rated Voltage (V) code | Surge Voltage (V) | Rated Capacitance (μF) | Case Size φD × L (mm) | tan δ | Leakage Current (μA) | ESR (mΩ) (at 100kHz 20°C) | Rated Ripple (mArms) | Part Number  |
|------------------------|-------------------|------------------------|-----------------------|-------|----------------------|---------------------------|----------------------|--------------|
| 16 (1C)                | 18.4              | 220                    | 8 × 9                 | 0.12  | 704                  | 26                        | 2100                 | PLV1C221MCL1 |
|                        |                   | 270                    | 8 × 12                | 0.12  | 864                  | 24                        | 2500                 | PLV1C271MDL1 |
|                        |                   | 470                    | 10 × 13               | 0.12  | 1504                 | 23                        | 2900                 | PLV1C471MDL1 |
| 20 (1D)                | 23.0              | 150                    | 8 × 9                 | 0.12  | 600                  | 27                        | 2000                 | PLV1D151MCL1 |
|                        |                   | 220                    | 8 × 12                | 0.12  | 880                  | 25                        | 2400                 | PLV1D221MDL1 |
|                        |                   | 330                    | 10 × 13               | 0.12  | 1320                 | 24                        | 2800                 | PLV1D331MDL1 |
| 25 (1E)                | 28.7              | 120                    | 8 × 9                 | 0.12  | 600                  | 28                        | 2000                 | PLV1E121MCL1 |
|                        |                   | 150                    | 8 × 12                | 0.12  | 750                  | 26                        | 2400                 | PLV1E151MDL1 |
|                        |                   | 270                    | 10 × 13               | 0.12  | 1350                 | 25                        | 2800                 | PLV1E271MDL1 |
| 35 (1V)                | 40.2              | 56                     | 8 × 9                 | 0.12  | 392                  | 29                        | 1900                 | PLV1V560MCL1 |
|                        |                   | 82                     | 8 × 12                | 0.12  | 574                  | 27                        | 2300                 | PLV1V820MDL1 |
|                        |                   | 150                    | 10 × 13               | 0.12  | 1050                 | 26                        | 2700                 | PLV1V151MDL1 |
| 50 (1H)                | 57.5              | 33                     | 8 × 9                 | 0.12  | 330                  | 32                        | 1900                 | PLV1H330MCL1 |
|                        |                   | 39                     | 8 × 12                | 0.12  | 390                  | 29                        | 2200                 | PLV1H390MDL1 |
|                        |                   | 68                     | 10 × 13               | 0.12  | 680                  | 28                        | 2600                 | PLV1H680MDL1 |
| 63 (1J)                | 72.4              | 22                     | 8 × 9                 | 0.12  | 277                  | 35                        | 1800                 | PLV1J220MCL1 |
|                        |                   | 27                     | 8 × 12                | 0.12  | 340                  | 33                        | 2100                 | PLV1J270MDL1 |
|                        |                   | 47                     | 10 × 13               | 0.12  | 592                  | 29                        | 2600                 | PLV1J470MDL1 |
| 80 (1K)                | 92                | 10                     | 8 × 9                 | 0.12  | 160                  | 40                        | 1700                 | PLV1K100MCL1 |
|                        |                   | 12                     | 8 × 12                | 0.12  | 192                  | 38                        | 1900                 | PLV1K120MDL1 |
|                        |                   | 22                     | 10 × 13               | 0.12  | 352                  | 35                        | 2300                 | PLV1K220MDL1 |
| 100 (2A)               | 115               | 6.8                    | 8 × 9                 | 0.12  | 136                  | 45                        | 1600                 | PLV2A6R8MCL1 |
|                        |                   | 10                     | 8 × 12                | 0.12  | 200                  | 42                        | 1800                 | PLV2A100MDL1 |
|                        |                   | 18                     | 10 × 13               | 0.12  | 360                  | 38                        | 2200                 | PLV2A180MDL1 |

Rated ripple current (mArms) at 105°C 100kHz

- Taping specifications are given in page 20, 21, 22.
- Please refer to page 3 for the minimum order quantity.

## Данный компонент на территории Российской Федерации

### Вы можете приобрести в компании MosChip.

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Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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