

LAR

Snap-in Terminal Type, 105°C Permissible Overvoltage

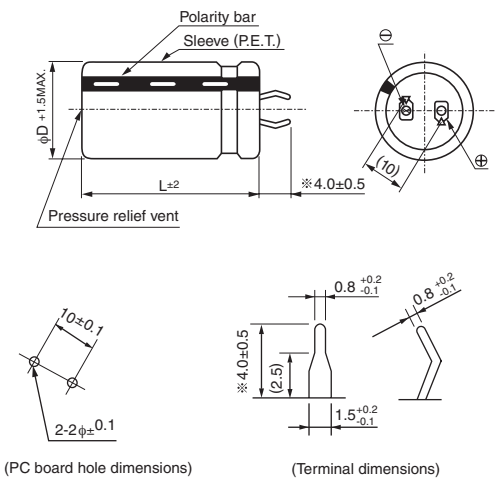
- Withstanding 2000 hours application of rated ripple current at 105°C.
- Reduction of short incidence when overvoltage (rated voltage x 1.5) is applied to a capacitor.
- Compliant to the RoHS directive (2011/65/EU, (EU)2015/863).



Specifications

| Item | Performance Characteristics | | | | | | | | | | | | |
|-------------------------------|---|--|--------------------|--|-----------|---|-----------------|---|---|---|--------------|----|---|
| Category Temperature Range | -40 to +105°C (200·250V), -25 to +105°C (400·450V) | | | | | | | | | | | | |
| Rated Voltage Range | 200 to 450V | | | | | | | | | | | | |
| Rated Capacitance Range | 82 to 2200μF | | | | | | | | | | | | |
| Capacitance Tolerance | ±20% at 120Hz, 20°C | | | | | | | | | | | | |
| Leakage Current | $I \leq 3\sqrt{CV}$ (μA) (After 5 minutes' application of rated voltage [C: Rated Capacitance(μF), V: Voltage(V)]) | | | | | | | | | | | | |
| Tangent of loss angle (tan δ) | <table border="1"> <tr> <td>Rated voltage (V)</td> <td>200 to 400</td> <td>450</td> </tr> <tr> <td>tan δ (MAX.)</td> <td>0.15</td> <td>0.20</td> </tr> </table> Measurement frequency : 120Hz at 20°C | | Rated voltage (V) | 200 to 400 | 450 | tan δ (MAX.) | 0.15 | 0.20 | | | | | |
| Rated voltage (V) | 200 to 400 | 450 | | | | | | | | | | | |
| tan δ (MAX.) | 0.15 | 0.20 | | | | | | | | | | | |
| Stability at Low Temperature | <table border="1"> <tr> <td colspan="2">Rated voltage(V)</td> <td>200 · 250</td> <td>400 · 450</td> </tr> <tr> <td rowspan="2">Impedance ratio</td> <td>Z - 25°C / Z+20°C</td> <td>3</td> <td>8</td> </tr> <tr> <td>ZT/Z20(MAX.)</td> <td>12</td> <td>—</td> </tr> </table> Measurement frequency : 120Hz | | Rated voltage(V) | | 200 · 250 | 400 · 450 | Impedance ratio | Z - 25°C / Z+20°C | 3 | 8 | ZT/Z20(MAX.) | 12 | — |
| Rated voltage(V) | | 200 · 250 | 400 · 450 | | | | | | | | | | |
| Impedance ratio | Z - 25°C / Z+20°C | 3 | 8 | | | | | | | | | | |
| | ZT/Z20(MAX.) | 12 | — | | | | | | | | | | |
| Endurance | The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 2000 hours at 105°C, the peak voltage shall not exceed the rated voltage. | <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±20% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td>200% or less than the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Less than or equal to the initial specified value</td> </tr> </table> | Capacitance change | Within ±20% of the initial capacitance value | tan δ | 200% or less than the initial specified value | Leakage current | Less than or equal to the initial specified value | | | | | |
| Capacitance change | Within ±20% of the initial capacitance value | | | | | | | | | | | | |
| tan δ | 200% or less than the initial specified value | | | | | | | | | | | | |
| Leakage current | Less than or equal to the initial specified value | | | | | | | | | | | | |
| Shelf Life | After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the requirements listed at right. | <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±15% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td>150% or less than the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Less than or equal to the initial specified value</td> </tr> </table> | Capacitance change | Within ±15% of the initial capacitance value | tan δ | 150% or less than the initial specified value | Leakage current | Less than or equal to the initial specified value | | | | | |
| Capacitance change | Within ±15% of the initial capacitance value | | | | | | | | | | | | |
| tan δ | 150% or less than the initial specified value | | | | | | | | | | | | |
| Leakage current | Less than or equal to the initial specified value | | | | | | | | | | | | |
| Safety Performance | When overvoltage (rated voltage x 1.5, limited current = 1A) is applied to a capacitor, the pressure relief vent will operate normally more than 60% of the time without short and flame. | | | | | | | | | | | | |
| Marking | Printed with white color letter on black sleeve. | | | | | | | | | | | | |

Drawing

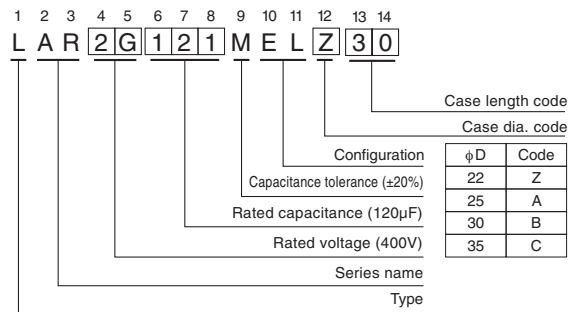


(PC board hole dimensions)

(Terminal dimensions)

※ The other terminal is also available upon request.
Please refer page 346 for schematic of dimensions.

Type numbering system (Example : 400V 120μF)



Frequency coefficient of rated ripple current

| Frequency(Hz) | 50 | 60 | 120 | 300 | 1k | 10k | 50k or more |
|---------------|------|------|------|------|------|------|-------------|
| coeff. | 0.81 | 0.85 | 1.00 | 1.17 | 1.32 | 1.45 | 1.50 |
| | 0.77 | 0.82 | 1.00 | 1.16 | 1.30 | 1.41 | 1.43 |

Minimum order quantity : 50pcs.

● Dimension table in next page.

LAR

■ Dimensions

| 200V (2D) | | | | |
|-----------|------------------|----------------------|----------------------|----------------|
| Cap. (μF) | Size φD × L (mm) | Rated ripple (mArms) | Leakage Current (mA) | Code |
| 390 | 22 × 25 | 1310 | 0.83 | LAR2D391MELZ25 |
| 470 | 22 × 30 | 1480 | 0.91 | LAR2D471MELZ30 |
| | 25 × 25 | 1480 | 0.91 | LAR2D471MELA25 |
| 560 | 22 × 35 | 1600 | 1.00 | LAR2D561MELZ35 |
| 680 | 22 × 40 | 1750 | 1.10 | LAR2D681MELZ40 |
| | 25 × 30 | 1750 | 1.10 | LAR2D681MELA30 |
| | 30 × 25 | 1750 | 1.10 | LAR2D681MELB25 |
| 820 | 22 × 45 | 2040 | 1.21 | LAR2D821MELZ45 |
| | 25 × 35 | 2040 | 1.21 | LAR2D821MELA35 |
| 1000 | 22 × 50 | 2300 | 1.34 | LAR2D102MELZ50 |
| | 25 × 45 | 2300 | 1.34 | LAR2D102MELA45 |
| | 30 × 30 | 2300 | 1.34 | LAR2D102MELB30 |
| | 35 × 25 | 2300 | 1.34 | LAR2D102MELC25 |
| 1200 | 25 × 50 | 2650 | 1.46 | LAR2D122MELA50 |
| | 30 × 35 | 2650 | 1.46 | LAR2D122MELB35 |
| | 35 × 30 | 2650 | 1.46 | LAR2D122MELC30 |
| 1500 | 30 × 40 | 2800 | 1.64 | LAR2D152MELB40 |
| | 35 × 35 | 2800 | 1.64 | LAR2D152MELC35 |
| 1800 | 30 × 50 | 3080 | 1.80 | LAR2D182MELB50 |
| | 35 × 40 | 3080 | 1.80 | LAR2D182MELC40 |
| 2200 | 35 × 45 | 3480 | 1.98 | LAR2D222MELC45 |

| 250V (2E) | | | | |
|-----------|------------------|----------------------|----------------------|----------------|
| Cap. (μF) | Size φD × L (mm) | Rated ripple (mArms) | Leakage Current (mA) | Code |
| 270 | 22 × 25 | 1100 | 0.77 | LAR2E271MELZ25 |
| 330 | 22 × 30 | 1200 | 0.86 | LAR2E331MELZ30 |
| | 25 × 25 | 1200 | 0.86 | LAR2E331MELA25 |
| 390 | 22 × 35 | 1300 | 0.93 | LAR2E391MELZ35 |
| | 25 × 30 | 1300 | 0.93 | LAR2E391MELA30 |
| 470 | 22 × 40 | 1400 | 1.02 | LAR2E471MELZ40 |
| | 25 × 35 | 1400 | 1.02 | LAR2E471MELA35 |
| | 30 × 25 | 1400 | 1.02 | LAR2E471MELB25 |
| 560 | 22 × 45 | 1500 | 1.12 | LAR2E561MELZ45 |
| | 25 × 35 | 1500 | 1.12 | LAR2E561MELA35 |
| | 30 × 30 | 1500 | 1.12 | LAR2E561MELB30 |
| 680 | 22 × 50 | 1700 | 1.23 | LAR2E681MELZ50 |
| | 25 × 40 | 1700 | 1.23 | LAR2E681MELA40 |
| | 30 × 30 | 1700 | 1.23 | LAR2E681MELB30 |
| 820 | 35 × 25 | 1700 | 1.23 | LAR2E681MELC25 |
| | 25 × 45 | 2000 | 1.35 | LAR2E821MELA45 |
| | 30 × 35 | 2000 | 1.35 | LAR2E821MELB35 |
| 1000 | 35 × 30 | 2000 | 1.35 | LAR2E821MELC30 |
| | 30 × 40 | 2200 | 1.50 | LAR2E102MELB40 |
| | 35 × 35 | 2200 | 1.50 | LAR2E102MELC35 |
| 1200 | 30 × 45 | 2300 | 1.64 | LAR2E122MELB45 |
| | 35 × 40 | 2300 | 1.64 | LAR2E122MELC40 |
| 1500 | 35 × 45 | 2500 | 1.83 | LAR2E152MELC45 |
| 1800 | 35 × 50 | 2700 | 2.01 | LAR2E182MELC50 |

| 400V (2G) | | | | |
|-----------|------------------|----------------------|----------------------|----------------|
| Cap. (μF) | Size φD × L (mm) | Rated ripple (mArms) | Leakage Current (mA) | Code |
| 100 | 22 × 25 | 680 | 0.60 | LAR2G101MELZ25 |
| 120 | 22 × 30 | 730 | 0.65 | LAR2G121MELZ30 |
| 180 | 22 × 35 | 950 | 0.80 | LAR2G181MELZ35 |
| | 25 × 30 | 950 | 0.80 | LAR2G181MELA30 |
| 220 | 30 × 25 | 950 | 0.80 | LAR2G181MELB25 |
| | 22 × 45 | 1100 | 0.88 | LAR2G221MELZ45 |
| 270 | 25 × 35 | 1100 | 0.88 | LAR2G221MELA35 |
| | 30 × 25 | 1100 | 0.88 | LAR2G221MELB25 |
| | 22 × 50 | 1220 | 0.98 | LAR2G271MELZ50 |
| 330 | 25 × 40 | 1220 | 0.98 | LAR2G271MELA40 |
| | 30 × 30 | 1220 | 0.98 | LAR2G271MELB30 |
| | 35 × 25 | 1220 | 0.98 | LAR2G271MELC25 |
| 390 | 25 × 45 | 1440 | 1.08 | LAR2G331MELA45 |
| | 30 × 35 | 1440 | 1.08 | LAR2G331MELB35 |
| 470 | 25 × 50 | 1550 | 1.18 | LAR2G391MELA50 |
| | 30 × 40 | 1550 | 1.18 | LAR2G391MELB40 |
| 560 | 35 × 30 | 1550 | 1.18 | LAR2G391MELC30 |
| | 30 × 45 | 1680 | 1.30 | LAR2G471MELB45 |
| 680 | 35 × 35 | 1680 | 1.30 | LAR2G471MELC35 |
| | 30 × 50 | 1900 | 1.41 | LAR2G561MELB50 |
| | 35 × 40 | 1900 | 1.41 | LAR2G561MELC40 |
| | 35 × 45 | 2120 | 1.56 | LAR2G681MELC45 |

| 450V (2W) | | | | |
|-----------|------------------|----------------------|----------------------|----------------|
| Cap. (μF) | Size φD × L (mm) | Rated ripple (mArms) | Leakage Current (mA) | Code |
| 82 | 22 × 25 | 340 | 0.57 | LAR2W820MELZ25 |
| 100 | 22 × 30 | 690 | 0.63 | LAR2W101MELZ30 |
| | 25 × 25 | 690 | 0.63 | LAR2W101MELA25 |
| 120 | 22 × 35 | 720 | 0.69 | LAR2W121MELZ35 |
| | 25 × 30 | 720 | 0.69 | LAR2W121MELA30 |
| 150 | 22 × 40 | 790 | 0.77 | LAR2W151MELZ40 |
| | 25 × 30 | 790 | 0.77 | LAR2W151MELA30 |
| | 30 × 25 | 790 | 0.77 | LAR2W151MELB25 |
| 180 | 22 × 45 | 870 | 0.85 | LAR2W181MELZ45 |
| | 25 × 35 | 870 | 0.85 | LAR2W181MELA35 |
| | 30 × 30 | 870 | 0.85 | LAR2W181MELB30 |
| 220 | 25 × 40 | 1050 | 0.94 | LAR2W221MELA40 |
| | 30 × 30 | 1050 | 0.94 | LAR2W221MELB30 |
| | 35 × 25 | 1050 | 0.94 | LAR2W221MELC25 |
| 270 | 25 × 50 | 1230 | 1.04 | LAR2W271MELA50 |
| | 30 × 35 | 1230 | 1.04 | LAR2W271MELB35 |
| | 35 × 30 | 1230 | 1.04 | LAR2W271MELC30 |
| 330 | 30 × 40 | 1380 | 1.15 | LAR2W331MELB40 |
| | 35 × 35 | 1380 | 1.15 | LAR2W331MELC35 |
| 390 | 30 × 50 | 1610 | 1.25 | LAR2W391MELB50 |
| | 35 × 40 | 1610 | 1.25 | LAR2W391MELC40 |
| 470 | 35 × 45 | 1780 | 1.37 | LAR2W471MELC45 |
| 560 | 35 × 50 | 1990 | 1.50 | LAR2W561MELC50 |

Rated ripple current (mArms) at 105°C 120Hz

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JONHON

«JONHON» (основан в 1970 г.)

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