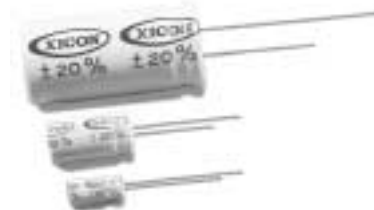


## FEATURES

- Excellent low leakage current performance
- High ripple current
- Especially useful for time constant circuits
- Satisfies characteristic W of JIS-C-5141 standard



## CHARACTERISTICS

| Item                                         | Characteristics                                                                                                                                                                                                                                                                                                                        |               |     |     |     |     |     |     |     |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|
| Operating Temperature Range                  | -40°C ~ +85°C                                                                                                                                                                                                                                                                                                                          |               |     |     |     |     |     |     |     |
| Capacitance Tolerance                        | ±20% at 20°C, 120Hz                                                                                                                                                                                                                                                                                                                    |               |     |     |     |     |     |     |     |
| Leakage Current                              | I = 0.002CWV or 0.4μA whichever is greater after 2 minutes of applied rated DC working voltage at 20°C<br>Where: C = rated capacitance in μF; WV = rated DC working voltage                                                                                                                                                            |               |     |     |     |     |     |     |     |
| Dissipation Factor<br>(Tan δ, at 20°C 120Hz) | Working voltage (WV)                                                                                                                                                                                                                                                                                                                   | 6.3           | 10  | 16  | 25  | 35  | 50  | 63  | 100 |
|                                              | Tan δ                                                                                                                                                                                                                                                                                                                                  | .24           | .21 | .16 | .14 | .12 | .10 | .09 | .08 |
|                                              | For capacitors whose capacitance exceeds 1,000μF, the specification of tan δ is increased by 0.02 for every addition of 1,000μF                                                                                                                                                                                                        |               |     |     |     |     |     |     |     |
| Surge Voltage                                | Working voltage (WV)                                                                                                                                                                                                                                                                                                                   | 6.3           | 10  | 16  | 25  | 35  | 50  | 63  | 100 |
|                                              | Surge voltage (SV)                                                                                                                                                                                                                                                                                                                     | 8             | 13  | 20  | 32  | 44  | 63  | 79  | 125 |
| Low Temperature Characteristics              | Working voltage (WV)                                                                                                                                                                                                                                                                                                                   | 6.3           | 10  | 16  | 25  | 35  | 50  | 63  | 100 |
|                                              | Imp. ratio                                                                                                                                                                                                                                                                                                                             | Z-25°C/Z+20°C | 5   | 4   | 2   | 2   | 2   | 2   | 2   |
|                                              | @ 120Hz                                                                                                                                                                                                                                                                                                                                | Z-40°C/Z+20°C | 10  | 8   | 6   | 4   | 4   | 3   | 3   |
| Life Test                                    | When returned to +20°C after 1,000 hours application of working voltage at +85°C, the capacitor will meet the following limits: Capacitance change is ≤ ±20% of initial value for 6.3WV ~ 25WV and is ≤ ±15% of initial value for 35WV ~ 100WV; tan δ is < 200% of initial specified value; leakage current is initial specified value |               |     |     |     |     |     |     |     |
| Shelf Life Test                              | When returned to +20°C after 1,000 hours at +85°C with no voltage applied, the capacitor will meet the following limits: Capacitance change is ≤ ±20% of initial value; tan δ is < 200% of initial specified value; leakage current is initial specified value                                                                         |               |     |     |     |     |     |     |     |

## PART NUMBERING SYSTEM

|        |   |   |   |                      |   |   |                               |   |   |
|--------|---|---|---|----------------------|---|---|-------------------------------|---|---|
| L      | L | R | L | 5                    | 0 | V | 1                             | 0 | 0 |
| Series |   |   |   | Voltage Actual Value |   |   | Capacitance (μF) Actual Value |   |   |

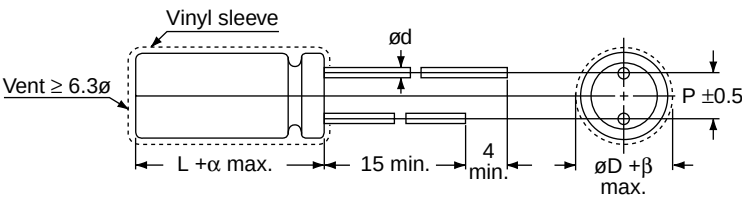
## RIPPLE CURRENT AND FREQUENCY MULTIPLIERS

| Capacitance (μF) | Frequency (Hz) |     |      |      |      |
|------------------|----------------|-----|------|------|------|
|                  | 60 (50)        | 120 | 500  | 1K   | ≥10K |
| <100             | 0.70           | 1.0 | 1.35 | 1.55 | 2.00 |
| 100 ~ 1000       | 0.83           | 1.0 | 1.23 | 1.32 | 1.50 |
| >1000            | 0.90           | 1.0 | 1.12 | 1.10 | 1.15 |

## RIPPLE CURRENT AND TEMPERATURE MULTIPLIERS

|                  |      |     |
|------------------|------|-----|
| Temperature (°C) | 70   | 85  |
| Multiplier       | 1.58 | 1.0 |

DIMENSIONS AND PERMISSIBLE RIPPLE CURRENT



Lead Spacing and Diameter (mm)

| øD | 5   | 6.3 | 8   | 10  | 13  | 16  | 18  |
|----|-----|-----|-----|-----|-----|-----|-----|
| P  | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 | 7.5 |
| ød | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.8 | 0.8 |
| β  | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| α  | 1.0 |     |     | 1.5 |     |     |     |

| Value<br>(μF) | Working Voltage; Dimensions: øD x L (mm); Ripple Current: mA/RMS @ 120Hz, 105°C |      |          |      |           |      |           |      |           |      |           |      |           |      |           |      |
|---------------|---------------------------------------------------------------------------------|------|----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|               | 6.3                                                                             |      | 10       |      | 16        |      | 25        |      | 35        |      | 50        |      | 63        |      | 100       |      |
|               | øD x L                                                                          | mA   | øD x L   | mA   | øD x L    | mA   | øD x L    | mA   | øD x L    | mA   | øD x L    | mA   | øD x L    | mA   | øD x L    | mA   |
| 0.1           |                                                                                 |      |          |      |           |      |           |      |           |      | 5 x 11    | 1.3  |           |      | 5 x 11    | 2.6  |
| 0.22          |                                                                                 |      |          |      |           |      |           |      |           |      | 5 x 11    | 2.9  |           |      | 5 x 11    | 5.8  |
| 0.33          |                                                                                 |      |          |      |           |      |           |      |           |      | 5 x 11    | 4.4  |           |      | 5 x 11    | 8.8  |
| 0.47          |                                                                                 |      |          |      |           |      |           |      |           |      | 5 x 11    | 7    |           |      | 5 x 11    | 12   |
| 1             |                                                                                 |      |          |      |           |      |           |      |           |      | 5 x 11    | 13   |           |      | 5 x 11    | 22   |
| 2.2           |                                                                                 |      |          |      |           |      |           |      |           |      | 5 x 11    | 29   |           |      | 5 x 11    | 33   |
| 3.3           |                                                                                 |      |          |      |           |      |           |      |           |      | 5 x 11    | 35   |           |      | 5 x 11    | 40   |
| 4.7           |                                                                                 |      |          |      |           |      | 5 x 11    | 31   | 5 x 11    | 40   | 5 x 11    | 42   | 5 x 11    | 45   | 5 x 11    | 48   |
| 10            |                                                                                 |      |          |      | 5 x 11    | 44   | 5 x 11    | 54   | 5 x 11    | 58   | 5 x 11    | 65   | 5 x 11    | 70   | 6.3 x 11  | 80   |
| 22            |                                                                                 |      | 5 x 11   | 59   | 5 x 11    | 75   | 5 x 11    | 80   | 5 x 11    | 87   | 5 x 11    | 95   | 6.3 x 11  | 115  | 8 x 11.5  | 135  |
| 33            | 5 x 11                                                                          | 55   | 5 x 11   | 84   | 5 x 11    | 90   | 5 x 11    | 97   | 5 x 11    | 105  | 6.3 x 11  | 125  | 6.3 x 11  | 140  | 10 x 12.5 | 195  |
| 47            | 5 x 11                                                                          | 79   | 5 x 11   | 100  | 5 x 11    | 110  | 5 x 11    | 115  | 6.3 x 11  | 145  | 6.3 x 11  | 150  | 8 x 11.5  | 190  | 10 x 16   | 255  |
| 100           | 5 x 11                                                                          | 130  | 5 x 11   | 145  | 6.3 x 11  | 180  | 6.3 x 11  | 190  | 8 x 11.5  | 240  | 8 x 11.5  | 255  | 10 x 12.5 | 320  | 13 x 20   | 450  |
| 220           | 6.3 x 11                                                                        | 230  | 6.3 x 11 | 250  | 8 x 11.5  | 300  | 8 x 11.5  | 320  | 10 x 12.5 | 420  | 10 x 16   | 490  | 10 x 20   | 565  | 16 x 25   | 810  |
| 330           | 6.3 x 11                                                                        | 280  | 8 x 11.5 | 350  | 8 x 11.5  | 370  | 10 x 12.5 | 470  | 10 x 16   | 570  | 10 x 20   | 650  | 13 x 20   | 765  | 16 x 25   | 990  |
| 470           | 8 x 11.5                                                                        | 380  | 8 x 11.5 | 415  | 10 x 12.5 | 520  | 10 x 16   | 620  | 10 x 20   | 740  | 13 x 20   | 860  | 13 x 25   | 990  | 16 x 31.5 | 1250 |
| 1000          | 10 x 12.5                                                                       | 650  | 10 x 16  | 790  | 10 x 20   | 910  | 13 x 20   | 1090 | 13 x 25   | 1300 | 16 x 25   | 1530 | 16 x 31.5 | 1700 |           |      |
| 2200          | 13 x 20                                                                         | 1150 | 13 x 20  | 1240 | 13 x 25   | 1420 | 16 x 25   | 1660 | 16 x 31.5 | 1890 | 18 x 35.5 | 2160 |           |      |           |      |
| 3300          | 13 x 20                                                                         | 1380 | 13 x 25  | 1590 | 16 x 25   | 1840 | 16 x 31.5 | 2070 | 18 x 35.5 | 2340 |           |      |           |      |           |      |
| 4700          | 16 x 25                                                                         | 1880 | 16 x 25  | 1980 | 16 x 35   | 2260 | 18 x 35.5 | 2520 | 18 x 40   | 2690 |           |      |           |      |           |      |

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Xicon:](#)

[140-LLRL25V100](#) [140-LLRL50V4.7](#) [140-LLRL25V1000](#) [140-LLRL35V1000](#) [140-LLRL16V22](#) [140-LLRL16V10](#) [140-LLRL16V470-TB](#) [140-LLRL10V470-TB](#) [140-LLRL50V.47-TB](#) [140-LLRL35V22](#) [140-LLRL25V330-TB](#) [140-LLRL35V2200](#) [140-LLRL35V470](#) [140-LLRL35V4.7](#) [140-LLRL16V33-TB](#) [140-LLRL50V33-TB](#) [140-LLRL16V100](#) [140-LLRL35V33-TB](#) [140-LLRL25V330](#) [140-LLRL16V2200](#) [140-LLRL50V470](#) [140-LLRL10V330](#) [140-LLRL16V3300](#) [140-LLRL35V10](#) [140-LLRL35V1000-TB](#) [140-LLRL10V3300-TB](#) [140-LLRL50V4.7-TB](#) [140-LLRL16V1000-TB](#) [140-LLRL10V100](#) [140-LLRL50V330-TB](#) [140-LLRL10V220](#) [140-LLRL50V10-TB](#) [140-LLRL16V10-TB](#) [140-LLRL35V10-TB](#) [140-LLRL10V2200-TB](#) [140-LLRL35V220-TB](#) [140-LLRL50V220-TB](#) [140-LLRL16V2200-TB](#) [140-LLRL50V470-TB](#) [140-LLRL50V1.0-TB](#) [140-LLRL35V330-TB](#) [140-LLRL35V470-TB](#) [140-LLRL10V47](#) [140-LLRL10V4700](#) [140-LLRL35V220](#) [140-LLRL50V330](#) [140-LLRL16V1000](#) [140-LLRL50V2.2-TB](#) [140-LLRL35V100-TB](#) [140-LLRL10V47-TB](#) [140-LLRL16V47-TB](#) [140-LLRL35V47-TB](#) [140-LLRL50V47-TB](#) [140-LLRL50V3.3-TB](#) [140-LLRL25V220-TB](#) [140-LLRL16V220-TB](#) [140-LLRL10V220-TB](#) [140-LLRL25V100-TB](#) [140-LLRL16V100-TB](#) [140-LLRL35V330](#) [140-LLRL50V100-TB](#) [140-LLRL50V0.47](#) [140-LLRL25V220](#) [140-LLRL35V22-TB](#) [140-LLRL16V22-TB](#) [140-LLRL50V22-TB](#) [140-LLRL50V33](#) [140-LLRL50V10](#) [140-LLRL50V47](#) [140-LLRL50V220](#) [140-LLRL50V22](#) [140-LLRL50V1.0](#) [140-LLRL35V4.7-TB](#) [140-LLRL25V470-TB](#) [140-LLRL16V330](#) [140-LLRL10V1000-TB](#) [140-LLRL50V2.2](#) [140-LLRL25V1000-TB](#) [140-LLRL35V100](#) [140-LLRL16V330-TB](#) [140-LLRL10V330-TB](#) [140-LLRL10V3300](#) [140-LLRL16V220](#)