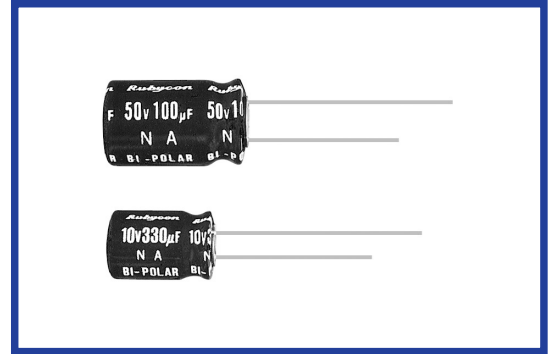


NA SERIES
85°C Bi-polar Miniaturized

 RoHS
compliance

◆ SPECIFICATIONS

| Items | Characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---------------------|-----------------------------------|--------------------|--|-----------------|------------------------------------|------|----|-----|---------------|------|------|------|------|------|------|------|------|--|------------------|---|---|---|---|---|---|---|---|------------------|----|----|---|---|---|---|---|---|
| Category Temperature Range | -40~+85°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rated Voltage Range | 6.3~100Vdc | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance | ±20% (20°C, 120Hz) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current(MAX) | I=0.03CV or 3µA whichever is greater. (After 5 minutes application of rated voltage) I=Leakage Current(µA) C=Capacitance(µF) V=Rated Voltage(Vdc) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor(MAX) (tanδ) | <table border="1"> <thead> <tr> <th>Rated Voltage (Vdc)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>(20°C, 120Hz)</td> <td>0.25</td> <td>0.25</td> <td>0.20</td> <td>0.20</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> </tr> </tbody> </table> | Rated Voltage (Vdc) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | (20°C, 120Hz) | 0.25 | 0.25 | 0.20 | 0.20 | 0.15 | 0.15 | 0.15 | 0.15 | | | | | | | | | | | | | | | | | | | |
| Rated Voltage (Vdc) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (20°C, 120Hz) | 0.25 | 0.25 | 0.20 | 0.20 | 0.15 | 0.15 | 0.15 | 0.15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Endurance | After applying rated voltage with rated ripple current for 2000 hours at 85°C, (The polarity shall be reversed every 250hrs.), the capacitors shall meet the following requirements. <table border="1"> <tbody> <tr> <td>Capacitance Change</td> <td>Within ±25% of the initial value.</td> </tr> <tr> <td>Dissipation Factor</td> <td>Not more than 200% of the specified value.</td> </tr> <tr> <td>Leakage Current</td> <td>Not more than the specified value.</td> </tr> </tbody> </table> | Capacitance Change | Within ±25% of the initial value. | Dissipation Factor | Not more than 200% of the specified value. | Leakage Current | Not more than the specified value. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Change | Within ±25% of the initial value. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor | Not more than 200% of the specified value. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current | Not more than the specified value. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low Temperature Stability Impedance Ratio(MAX) | <table border="1"> <thead> <tr> <th>Rated Voltage (Vdc)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>(120Hz)</td> <td colspan="9"></td> </tr> <tr> <td>Z(-25°C)/Z(20°C)</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z(-40°C)/Z(20°C)</td> <td>12</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>4</td> <td>3</td> </tr> </tbody> </table> | Rated Voltage (Vdc) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | (120Hz) | | | | | | | | | | Z(-25°C)/Z(20°C) | 6 | 4 | 4 | 3 | 2 | 2 | 2 | 2 | Z(-40°C)/Z(20°C) | 12 | 10 | 8 | 6 | 4 | 4 | 4 | 3 |
| Rated Voltage (Vdc) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (120Hz) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Z(-25°C)/Z(20°C) | 6 | 4 | 4 | 3 | 2 | 2 | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Z(-40°C)/Z(20°C) | 12 | 10 | 8 | 6 | 4 | 4 | 4 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

◆ MULTIPLIER FOR RIPPLE CURRENT

Frequency coefficient

| Frequency (Hz) | 60(50) | 120 | 500 | 1k | 10k≤ |
|----------------|--------|------|------|------|------|
| Coefficient | | | | | |
| 1µF | 0.50 | 1.00 | 1.20 | 1.30 | 1.50 |
| 2.2~4.7µF | 0.65 | 1.00 | 1.20 | 1.30 | 1.50 |
| 10~47µF | 0.80 | 1.00 | 1.20 | 1.30 | 1.50 |
| 100~1000µF | 0.80 | 1.00 | 1.10 | 1.15 | 1.20 |

◆ OPTION

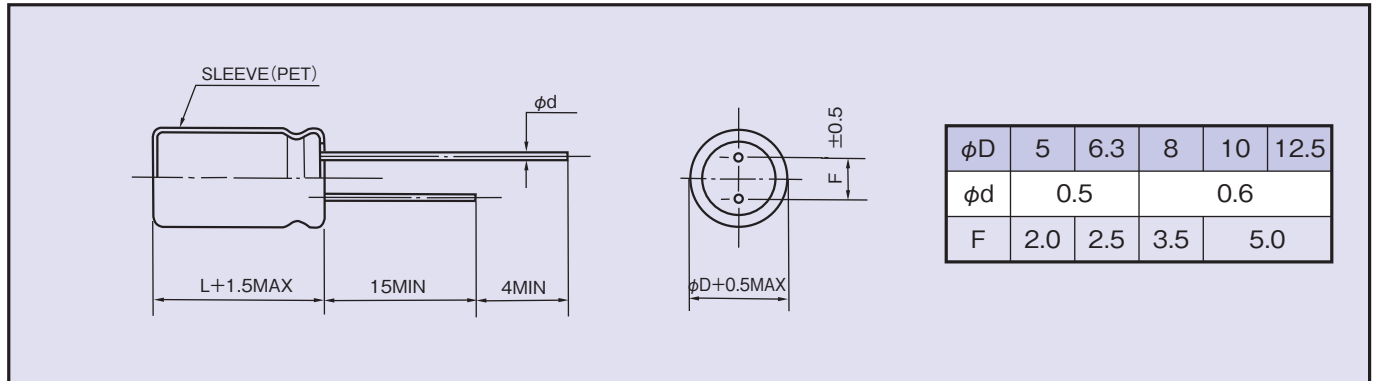
| | Code |
|------------|------|
| PET Sleeve | EFC |

◆ PART NUMBER

| | | | | | | |
|---------------|--------|-------------|-----------------------|--------|--------------|-----------|
| □□□ | NA | □□□□□ | M | □□□ | □□ | DXL |
| Rated Voltage | Series | Capacitance | Capacitance Tolerance | Option | Lead Forming | Case Size |

◆ DIMENSIONS

(mm)



◆ STANDARD SIZE

Size $\phi D \times L$ (mm), Rated Ripple Current (mA r.m.s./85°C, 120Hz)

| Cap(μF) \ Vdc | 6.3 | | 10 | | 16 | | 25 | |
|----------------------------|--------|--------|---------|--------|---------|--------|---------|--------|
| | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple |
| 33 | | | | | | | 5×11 | 77 |
| 47 | | | | | 5×11 | 80 | 6.3×11 | 100 |
| 100 | 5×11 | 100 | 6.3×11 | 115 | 6.3×11 | 130 | 8×11.5 | 175 |
| 220 | 6.3×11 | 160 | 8×11.5 | 205 | 8×11.5 | 220 | 10×12.5 | 295 |
| 330 | 8×11.5 | 225 | 8×11.5 | 240 | 10×12.5 | 325 | 10×16 | 380 |
| 470 | 8×11.5 | 250 | 10×12.5 | 345 | 10×16 | 415 | 10×20 | 510 |
| 1000 | 10×16 | 425 | 10×20 | 550 | 12.5×20 | 695 | | |

| Cap(μF) \ Vdc | 35 | | 50 | | 63 | | 100 | |
|----------------------------|---------|--------|---------|--------|---------|--------|---------|--------|
| | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple |
| 1 | | | 5×11 | 12 | | | 5×11 | 15 |
| 2.2 | | | 5×11 | 19 | | | 5×11 | 20 |
| 3.3 | | | 5×11 | 25 | | | 5×11 | 27 |
| 4.7 | | | 5×11 | 35 | 5×11 | 35 | 6.3×11 | 37 |
| 10 | | | 5×11 | 40 | 6.3×11 | 45 | 8×11.5 | 65 |
| 22 | 5×11 | 65 | 6.3×11 | 72 | 8×11.5 | 82 | 10×12.5 | 96 |
| 33 | 6.3×11 | 90 | 6.3×11 | 95 | 8×11.5 | 100 | 10×16 | 125 |
| 47 | 6.3×11 | 110 | 8×11.5 | 130 | 10×12.5 | 140 | 10×20 | 165 |
| 100 | 10×12.5 | 220 | 10×16 | 235 | 10×20 | 250 | 12.5×25 | 285 |
| 220 | 10×20 | 390 | 12.5×20 | 460 | 12.5×25 | 490 | | |
| 330 | 12.5×20 | 540 | 12.5×25 | 590 | | | | |
| 470 | 12.5×25 | 640 | | | | | | |