

# SCREW TERMINAL TYPE ALUMINUM ELECTROLYTIC CAPACITORS

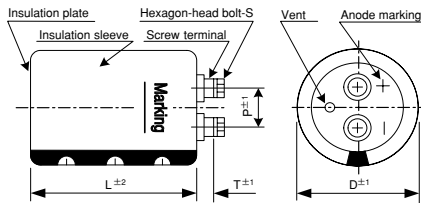
## FX2 Series

Useful of 8,000 hours at 85°C  
(Warranty of 5,000 hours at 85°C)

- Conform RoHS

### Features

- Developed specially for the demand of higher voltage with compact size.
- The size is reduced by around 14% of conventional FXA type through development of electrolyte liquid.
- 500V and 550V added in the series.



(unit : mm)

| φ D | P    | S     | T    | Cap material |
|-----|------|-------|------|--------------|
| 51  | 22.0 | M5×10 | 5.5  | Phenol       |
| 64  | 28.6 | M5×10 | 5.5  | Phenol       |
| 77  | 32.0 | M5×10 | 5.0  | Phenol       |
| 90  | 32.0 | M5×10 | 5.0  | Phenol       |
| 101 | 41.5 | M8×16 | 11.0 | Phenol       |

### Product Specifications

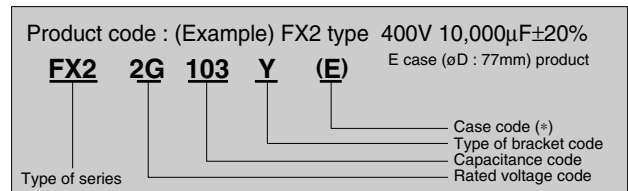
| Items                      | Specifications  |
|----------------------------|---|
| Temperature range          | -40°C ~ +85°C   |
| Rated voltage              | 400 ~ 550V.DC   |
| Capacitance tolerance      | ±20% (20°C, 120Hz)  |
| Leakage current            | 0.01CV (μA) or 5 mA, whichever is smaller or less (20°C, after 5 minutes) [C = nominal capacitance (μF), V = rated voltage (V)]   |
| Dissipation factor         | Less than the value specified in the standard products table. (20°C, 120Hz)   |
| Permissible ripple current | As specified in the standard products table. (85°C, 120Hz)  |
| High-temperature load      | After the rated voltage with specified ripple current is applied at 85°C for 5000 hours:<br>Capacitance tolerance: ±15% or less of the initial value<br>Dissipation factor: 175% or less of the specified initial value<br>Leakage current: Specified initial value or less |
| Others                     | JIS C 5101-4.   |

### Ripple current correction coefficient

| Temperature (°C)       | 40    | 60   | 85   |     |      |
|------------------------|-------|------|------|-----|------|
| Correction coefficient | 1.89  | 1.67 | 1.00 |     |      |
| Frequency (Hz)         | 50/60 | 120  | 300  | 1K  | ≥10K |
| Correction coefficient | 0.7   | 1.0  | 1.1  | 1.3 | 1.4  |

Terminal permissible currents: 60Arms for M5; 100Arms for M6; 120Arms for M8.

Please use this type of capacitor at a terminal current below the permissible.



\*( ) Case code in parentheses : If two types of shape exist for the same rating, enter the case code.

### Bracket

- See page 21, 22 for shapes and dimensions.
- Product names in the Standard Products Table correspond to the bracket for Type Y, but Type I bracket may be used (Type of bracket Code = I).
- If bracket are not necessary, enter "N" for the type of bracket code.
- Bracket will be delivered separately.

### Standard Products Table

| Rated Voltage (V. DC) | Capacitance (μF) | Case size φDXL(mm) | tanδ 20°C, 120Hz | Ripple current 85°C, 120Hz (Arms) | ESR(typ.) 20°C, 100Hz (mΩ) | Z max 20°C, 10kHz (mΩ) | ESL(typ.) (nH) | Product name |
|-----------------------|------------------|--------------------|------------------|-----------------------------------|----------------------------|------------------------|----------------|--------------|
| 400                   | 2200             | 51×115             | 0.15             | 8.8                               | 46                         | 48                     | 21             | FX22G222Y    |
|                       | 2700             | 51×130             | 0.15             | 10.2                              | 38                         | 40                     | 21             | FX22G272Y    |
|                       | 3300             | 64×96              | 0.15             | 11.0                              | 30                         | 32                     | 22             | FX22G332Y    |
|                       | 3900             | 64×115             | 0.15             | 12.8                              | 26                         | 28                     | 22             | FX22G392Y    |
|                       | 4700             | 64×130             | 0.15             | 14.8                              | 21                         | 22                     | 22             | FX22G472Y    |
|                       | 5600             | 77×115             | 0.15             | 16.2                              | 18                         | 19                     | 24             | FX22G562Y    |
|                       | 6800             | 77×130             | 0.15             | 18.7                              | 15                         | 15                     | 24             | FX22G682Y    |
|                       | 8200             | 77×155             | 0.15             | 22.0                              | 12                         | 15                     | 24             | FX22G822Y    |
|                       | 10000            | 77×195             | 0.15             | 26.7                              | 10                         | 15                     | 24             | FX22G103YE   |
|                       |                  | 90×131             | 0.15             | 24.2                              | 10                         | 15                     | 24             | FX22G103YF   |
|                       | 12000            | 90×157             | 0.15             | 28.5                              | 8                          | 13                     | 24             | FX22G123Y    |
|                       | 15000            | 90×196             | 0.15             | 34.8                              | 8                          | 10                     | 24             | FX22G153Y    |
|                       | 18000            | 90×236             | 0.15             | 41.2                              | 6                          | 9                      | 24             | FX22G183Y    |
| 22000                 | 101×237          | 0.15               | 47.0             | 6                                 | 8                          | 33                     | FX22G223Y      |              |
| 450                   | 1800             | 51×115             | 0.15             | 7.6                               | 56                         | 58                     | 21             | FX22W182Y    |
|                       | 2200             | 51×130             | 0.15             | 8.8                               | 46                         | 48                     | 21             | FX22W222Y    |
|                       | 2700             | 64×96              | 0.15             | 9.5                               | 38                         | 40                     | 22             | FX22W272Y    |
|                       | 3300             | 64×115             | 0.15             | 11.2                              | 30                         | 35                     | 22             | FX22W332Y    |
|                       | 3900             | 64×130             | 0.15             | 12.8                              | 27                         | 32                     | 22             | FX22W392Y    |
|                       | 4700             | 77×115             | 0.15             | 14.1                              | 21                         | 21                     | 24             | FX22W472Y    |
|                       | 5600             | 77×130             | 0.15             | 16.2                              | 20                         | 20                     | 24             | FX22W562Y    |
|                       | 6800             | 77×155             | 0.15             | 19.1                              | 15                         | 18                     | 24             | FX22W682Y    |
|                       | 8200             | 77×195             | 0.15             | 23.0                              | 14                         | 16                     | 24             | FX22W822YE   |
|                       |                  | 90×131             | 0.15             | 21.0                              | 14                         | 17                     | 24             | FX22W822YF   |
|                       | 10000            | 90×171             | 0.15             | 25.7                              | 10                         | 15                     | 24             | FX22W103Y    |
|                       |                  | 90×196             | 0.15             | 29.7                              | 9                          | 12                     | 24             | FX22W123YF   |
|                       | 12000            | 101×175            | 0.15             | 29.3                              | 9                          | 12                     | 33             | FX22W123YG   |
|                       |                  | 90×236             | 0.15             | 35.9                              | 7                          | 10                     | 24             | FX22W153YF   |
|                       | 15000            | 101×195            | 0.15             | 34.2                              | 7                          | 10                     | 33             | FX22W153YG   |
| 18000                 |                  | 101×237            | 0.15             | 40.5                              | 6                          | 10                     | 33             | FX22W183Y    |

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ALUMINUM ELECTROLYTIC CAPACITORS

| Rated Voltage (V. DC) | Capacitance (μF) | Case size øDXL(mm) | tanδ 20°C,120Hz | Ripple current 85°C,120Hz (Arms) | ESR(typ.) 20°C,100Hz (mΩ) | Z max 20°C,10kHz (mΩ) | ESL(typ.) (nH) | Product name |
|-----------------------|------------------|--------------------|-----------------|----------------------------------|---------------------------|-----------------------|----------------|--------------|
| 500                   | 1200             | 51×115             | 0.20            | 6.2                              | 93                        | 100                   | 21             | FX22H122YC   |
|                       |                  | 64×96              | 0.20            | 6.3                              | 93                        | 100                   | 22             | FX22H122YD   |
|                       | 1500             | 51×130             | 0.20            | 7.3                              | 74                        | 80                    | 21             | FX22H152YC   |
|                       |                  | 64×96              | 0.20            | 7.1                              | 74                        | 80                    | 22             | FX22H152YD   |
|                       | 1800             | 64×115             | 0.20            | 8.3                              | 53                        | 50                    | 22             | FX22H182Y    |
|                       | 2200             | 64×130             | 0.20            | 9.6                              | 40                        | 35                    | 22             | FX22H222Y    |
|                       | 2700             | 77×115             | 0.20            | 10.7                             | 37                        | 33                    | 24             | FX22H272Y    |
|                       | 3300             | 77×130             | 0.20            | 12.4                             | 36                        | 32                    | 24             | FX22H332Y    |
|                       | 3900             | 77×155             | 0.20            | 14.4                             | 27                        | 29                    | 24             | FX22H392Y    |
|                       | 4700             | 77×171             | 0.20            | 16.5                             | 25                        | 25                    | 24             | FX22H472YE   |
|                       |                  | 90×131             | 0.20            | 15.8                             | 25                        | 25                    | 24             | FX22H472YF   |
|                       | 5600             | 77×195             | 0.20            | 19.0                             | 23                        | 21                    | 24             | FX22H562YE   |
|                       |                  | 90×157             | 0.20            | 18.6                             | 23                        | 21                    | 24             | FX22H562YF   |
|                       | 6800             | 90×171             | 0.20            | 21.2                             | 20                        | 18                    | 24             | FX22H682Y    |
|                       | 8200             | 90×196             | 0.20            | 24.5                             | 17                        | 16                    | 24             | FX22H822YF   |
|                       |                  | 101×175            | 0.20            | 24.2                             | 17                        | 16                    | 33             | FX22H822YG   |
| 10000                 | 90×236           | 0.20               | 29.3            | 14                               | 12                        | 24                    | FX22H103YF     |              |
|                       | 101×195          | 0.20               | 27.9            | 14                               | 14                        | 33                    | FX22H103YG     |              |
| 12000                 | 101×237          | 0.20               | 33.1            | 12                               | 12                        | 33                    | FX22H123Y      |              |
| 550                   | 1000             | 51×130             | 0.20            | 5.9                              | 112                       | 120                   | 21             | FX22L102Y    |
|                       | 1200             | 64×115             | 0.20            | 6.8                              | 93                        | 100                   | 22             | FX22L122Y    |
|                       | 1500             | 64×130             | 0.20            | 8.0                              | 74                        | 80                    | 22             | FX22L152Y    |
|                       | 1800             | 77×115             | 0.20            | 8.7                              | 61                        | 50                    | 24             | FX22L182Y    |
|                       | 2200             | 77×130             | 0.20            | 10.1                             | 53                        | 50                    | 24             | FX22L222Y    |
|                       | 2700             | 77×155             | 0.20            | 12.0                             | 40                        | 35                    | 24             | FX22L272Y    |
|                       | 3300             | 77×155             | 0.20            | 13.3                             | 38                        | 32                    | 24             | FX22L332Y    |
|                       | 3900             | 90×157             | 0.20            | 15.5                             | 30                        | 27                    | 24             | FX22L392Y    |
|                       | 4700             | 90×171             | 0.20            | 17.6                             | 25                        | 20                    | 24             | FX22L472Y    |
|                       | 5600             | 90×196             | 0.20            | 20.3                             | 20                        | 17                    | 24             | FX22L562Y    |
|                       | 6800             | 90×236             | 0.20            | 24.1                             | 17                        | 17                    | 24             | FX22L682Y    |
|                       | 8200             | 101×237            | 0.20            | 27.3                             | 15                        | 15                    | 33             | FX22L822Y    |

## Life time graph

Useful life depending on ambient temperature  $T_a$  and ripple current operating conditions  $I_r$  versus rated ripple current at 85°C, 120Hz

