

# EFPLA

## Automotive double metalized polypropylene film pulse capacitor



Photo is representative

### Product features

- AEC-Q200
- High capacitance density
- Self-healing property
- High ripple current, low loss
- High reliability
- Suitable for high frequency applications
- Suitable for harsh environmental conditions
- THB Grade IIIB (+85 °C /85% RH, 1000 hours,  $U_R$ )

### Applications

- On board charger (OBC)
- xEV traction inverter
- DC-DC converters
- xEV chargers
- Industrial power supply

### Environmental compliance and general specifications

- Operating temperature range: -55 °C to +105 °C



### Part number system

| EF                   | PL                 | A                    | 1A   | J                   | 104   | C04                      | 2L                           | H                               |
|----------------------|--------------------|----------------------|--|---------------------|---|--------------------------|------------------------------|---------------------------------|
| Capacitor type       | Series             | Grade                | Voltage (Vdc)  | Tolerance           | Capacitance (pF)  | Size code                | Terminal code                | Lead length code                |
| EF = film capacitors | Radial leads pulse | A = automotive grade | 63=630<br>1A=1000<br>1B=1100<br>1C=1200<br>1D=1300<br>1G=1600<br>2A=2000 | J = ±5%<br>K = ±10% | First two digits= significant figures, third digit = number of zeros<br><br>example:<br>104 = 100000 pF | Refer to size code table | Refer to terminal code table | Refer to lead length code table |

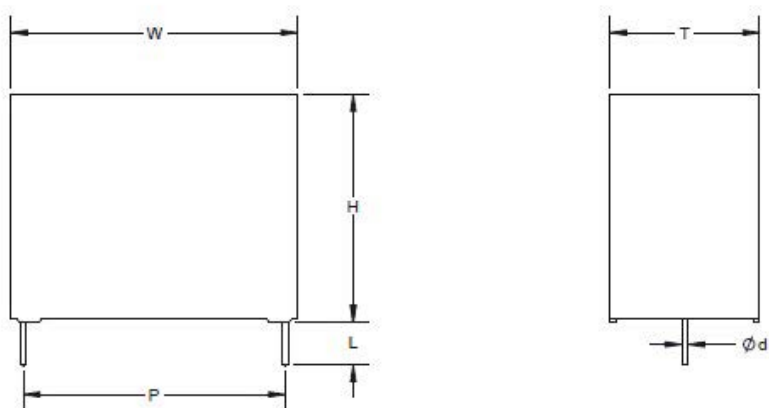
### Terminal code table

| Digit one (Lead/terminal type) | Digit two (Lead Ipsilateral) |
|--------------------------------|------------------------------|
| Straight cut 2                 | N/A L                        |
| Taping straight V              |                              |

### Lead length code table

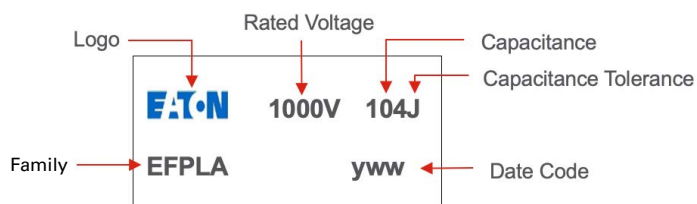
| Lead length       |   |
|-------------------|---|
| 3.0±0.5 mm (Bulk) | D |
| 3.5±0.5 mm (Bulk) | E |
| 4.0±0.5 mm (Bulk) | F |
| 4.5±0.5 mm (Bulk) | G |
| 5.0±0.5 mm (Bulk) | H |
| 25±2 mm (Ammo)    | T |

### Dimensions-mm



2 pins

### Part marking



Size code table

| Size | Dimension-mm |               |      |               |      |               | Pitch-mm |               | Lead wire-mm |               | Lead length   |
|------|--------------|---------------|------|---------------|------|---------------|----------|---------------|--------------|---------------|---|
| Code | W            | Tolerance (±) | H    | Tolerance (±) | T    | Tolerance (±) | P        | Tolerance (±) | Ød           | Tolerance (±) | L   |
| B01  | 18           | 0.5           | 11   | 0.5           | 5    | 0.5           | 15       | 0.5           | 0.8          | 0.05          | Refer to lead length code table, pitch 27.5 and 37.5 without ammo package |
| B02  | 18           | 0.5           | 12   | 0.5           | 6    | 0.5           | 15       | 0.5           | 0.8          | 0.05          |   |
| B05  | 18           | 0.5           | 13   | 0.5           | 7    | 0.5           | 15       | 0.5           | 0.8          | 0.05          |   |
| B07  | 18           | 0.5           | 13.5 | 0.5           | 7.5  | 0.5           | 15       | 0.5           | 0.8          | 0.05          |   |
| B09  | 18           | 0.5           | 14.5 | 0.5           | 8.5  | 0.5           | 15       | 0.5           | 0.8          | 0.05          |   |
| B11  | 18           | 0.5           | 16   | 0.5           | 10   | 0.5           | 15       | 0.5           | 0.8          | 0.05          |   |
| B16  | 18           | 0.5           | 19   | 0.5           | 11   | 0.5           | 15       | 0.5           | 0.8          | 0.05          |   |
| C01  | 26           | 0.5           | 15.5 | 0.5           | 6    | 0.5           | 22.5     | 0.5           | 0.8          | 0.05          |   |
| C02  | 26           | 0.5           | 16.5 | 0.5           | 7    | 0.5           | 22.5     | 0.5           | 0.8          | 0.05          |   |
| C03  | 26           | 0.5           | 17   | 0.5           | 8.5  | 0.5           | 22.5     | 0.5           | 0.8          | 0.05          |   |
| C04  | 26           | 0.5           | 19   | 0.5           | 10   | 0.5           | 22.5     | 0.5           | 0.8          | 0.05          |   |
| C05  | 26           | 0.5           | 20   | 0.5           | 11   | 0.5           | 22.5     | 0.5           | 0.8          | 0.05          |   |
| C06  | 26           | 0.5           | 22   | 0.5           | 12   | 0.5           | 22.5     | 0.5           | 0.8          | 0.05          |   |
| C08  | 26           | 0.5           | 24.5 | 0.5           | 13   | 0.5           | 22.5     | 0.5           | 0.8          | 0.05          |   |
| C10  | 26           | 0.5           | 29.5 | 0.5           | 14.5 | 0.5           | 22.5     | 0.5           | 0.8          | 0.05          |   |
| D01  | 32           | 0.8           | 17   | 0.8           | 8    | 0.8           | 27.5     | 0.5           | 0.8          | 0.05          |   |
| D02  | 32           | 0.8           | 18   | 0.8           | 9    | 0.8           | 27.5     | 0.5           | 0.8          | 0.05          |   |
| D03  | 32           | 0.8           | 20   | 0.8           | 11   | 0.8           | 27.5     | 0.5           | 0.8          | 0.05          |   |
| D04  | 32           | 0.8           | 22   | 0.8           | 13   | 0.8           | 27.5     | 0.5           | 0.8          | 0.05          |   |
| D05  | 32           | 0.8           | 24   | 0.8           | 14   | 0.8           | 27.5     | 0.5           | 0.8          | 0.05          |   |
| D06  | 32           | 0.8           | 24.5 | 0.8           | 13   | 0.8           | 27.5     | 0.5           | 0.8          | 0.05          |   |
| D08  | 32           | 0.8           | 28   | 0.8           | 14   | 0.8           | 27.5     | 0.5           | 0.8          | 0.05          |   |
| D10  | 32           | 0.8           | 30   | 0.8           | 16   | 0.8           | 27.5     | 0.5           | 0.8          | 0.05          |   |
| D12  | 32           | 0.8           | 33   | 0.8           | 18   | 1.0           | 27.5     | 0.5           | 0.8          | 0.05          |   |
| D13  | 32           | 0.8           | 37   | 0.8           | 22   | 1.0           | 27.5     | 0.5           | 1.0          | 0.05          |   |
| E01  | 42           | 1.0           | 22   | 1.0           | 11   | 1.0           | 37.5     | 0.5           | 1.0          | 0.05          |   |
| E02  | 42           | 1.0           | 24   | 1.0           | 13   | 1.0           | 37.5     | 0.5           | 1.0          | 0.05          |   |
| E04  | 42           | 1.0           | 28   | 1.0           | 17   | 1.0           | 37.5     | 0.5           | 1.0          | 0.05          |   |
| E05  | 42           | 1.0           | 28.5 | 1.0           | 16   | 1.0           | 37.5     | 0.5           | 1.0          | 0.05          |   |
| E10  | 42           | 1.0           | 32   | 1.0           | 19   | 1.0           | 37.5     | 0.5           | 1.0          | 0.05          |   |
| E13  | 42           | 1.0           | 40   | 1.0           | 20   | 1.0           | 37.5     | 0.5           | 1.0          | 0.05          |   |
| E14  | 42           | 1.0           | 43   | 1.0           | 28   | 1.0           | 37.5     | 0.5           | 1.0          | 0.05          |   |
| E15  | 42           | 1.0           | 44   | 1.0           | 24   | 1.0           | 37.5     | 0.5           | 1.0          | 0.05          |   |
| E16  | 42           | 1.0           | 45   | 1.0           | 30   | 1.0           | 37.5     | 0.5           | 1.0          | 0.05          |   |
| E17  | 42           | 1.0           | 50   | 1.0           | 35   | 1.0           | 37.5     | 0.5           | 1.0          | 0.05          |   |

Remark: case color is black.

Rating and part number

Rated voltage 630 Vdc

| Capacitance value (μF) | Dimensions |        |        |        | I <sub>rms</sub> +70 °C, 100 kHz (A) | Peak current (A) | ESR 100 kHz (mΩ) | ESL (nH) | dv/dt (V/μs) | Part number <sup>1</sup> |
|------------------------|------------|--------|--------|--------|--------------------------------------|------------------|------------------|----------|--------------|--------------------------|
|                        | W (mm)     | H (mm) | T (mm) | P (mm) |                                      |                  |                  |          |              |                          |
| 0.01                   | 18         | 11     | 5      | 15     | 1.8                                  | 30               | 62               | 12       | 3000         | EFPLA63J103B012LH        |
| 0.012                  | 18         | 11     | 5      | 15     | 2.2                                  | 36               | 52               | 12       | 3000         | EFPLA63J123B012LH        |
| 0.015                  | 18         | 11     | 5      | 15     | 2.5                                  | 45               | 42               | 12       | 3000         | EFPLA63J153B012LH        |
| 0.018                  | 18         | 11     | 5      | 15     | 2.7                                  | 54               | 35               | 12       | 3000         | EFPLA63J183B012LH        |
| 0.02                   | 18         | 11     | 5      | 15     | 2.8                                  | 60               | 32               | 12       | 3000         | EFPLA63J203B012LH        |
| 0.022                  | 18         | 11     | 5      | 15     | 2.9                                  | 66               | 30               | 12       | 3000         | EFPLA63J223B012LH        |
| 0.027                  | 18         | 12     | 6      | 15     | 3.2                                  | 81               | 25               | 12       | 3000         | EFPLA63J273B022LH        |
| 0.033                  | 18         | 12     | 6      | 15     | 3.7                                  | 99               | 20               | 12       | 3000         | EFPLA63J333B022LH        |
| 0.039                  | 18         | 12     | 6      | 15     | 3.9                                  | 117              | 16               | 12       | 3000         | EFPLA63J393B022LH        |
| 0.047                  | 18         | 13.5   | 7.5    | 15     | 4.5                                  | 141              | 15               | 12       | 3000         | EFPLA63J473B072LH        |
| 0.056                  | 18         | 13.5   | 7.5    | 15     | 4.6                                  | 168              | 14               | 12       | 3000         | EFPLA63J563B072LH        |
| 0.068                  | 18         | 14.5   | 8.5    | 15     | 4.7                                  | 204              | 13.5             | 12       | 3000         | EFPLA63J683B092LH        |
| 0.082                  | 18         | 16     | 10     | 15     | 4.8                                  | 246              | 13.2             | 12       | 3000         | EFPLA63J823B112LH        |
| 0.1                    | 18         | 16     | 10     | 15     | 5                                    | 300              | 13               | 12       | 3000         | EFPLA63J104B112LH        |
| 0.12                   | 18         | 19     | 11     | 15     | 5.4                                  | 360              | 12.5             | 12       | 3000         | EFPLA63J124B162LH        |
| 0.047                  | 26         | 15.5   | 6      | 22.5   | 3.8                                  | 70.5             | 20               | 15       | 1500         | EFPLA63J473C012LH        |
| 0.056                  | 26         | 15.5   | 6      | 22.5   | 4                                    | 84               | 19.5             | 15       | 1500         | EFPLA63J563C012LH        |
| 0.068                  | 26         | 15.5   | 6      | 22.5   | 4.2                                  | 102              | 19               | 15       | 1500         | EFPLA63J683C012LH        |
| 0.082                  | 26         | 15.5   | 6      | 22.5   | 4.5                                  | 123              | 18               | 15       | 1500         | EFPLA63J823C012LH        |
| 0.1                    | 26         | 15.5   | 6      | 22.5   | 5                                    | 150              | 16               | 15       | 1500         | EFPLA63J104C012LH        |
| 0.12                   | 26         | 16.5   | 7      | 22.5   | 5.3                                  | 180              | 14               | 15       | 1500         | EFPLA63J124C022LH        |
| 0.15                   | 26         | 17     | 8.5    | 22.5   | 6                                    | 225              | 11               | 15       | 1500         | EFPLA63J154C032LH        |
| 0.18                   | 26         | 17     | 8.5    | 22.5   | 6.5                                  | 270              | 10               | 15       | 1500         | EFPLA63J184C032LH        |
| 0.22                   | 26         | 19     | 10     | 22.5   | 7.5                                  | 330              | 8.5              | 15       | 1500         | EFPLA63J224C042LH        |
| 0.27                   | 26         | 20     | 11     | 22.5   | 8.5                                  | 405              | 6.5              | 15       | 1500         | EFPLA63J274C052LH        |
| 0.33                   | 26         | 20     | 11     | 22.5   | 9                                    | 495              | 6                | 15       | 1500         | EFPLA63J334C052LH        |
| 0.39                   | 26         | 22     | 12     | 22.5   | 10                                   | 585              | 5                | 15       | 1500         | EFPLA63J394C062LH        |
| 0.15                   | 32         | 17     | 8      | 27.5   | 4.6                                  | 135              | 25               | 20       | 900          | EFPLA63J154D012LH        |
| 0.18                   | 32         | 17     | 8      | 27.5   | 4.8                                  | 162              | 22               | 20       | 900          | EFPLA63J184D012LH        |
| 0.22                   | 32         | 18     | 9      | 27.5   | 5                                    | 198              | 20               | 20       | 900          | EFPLA63J224D022LH        |
| 0.27                   | 32         | 20     | 11     | 27.5   | 5.5                                  | 243              | 17.5             | 20       | 900          | EFPLA63J274D032LH        |
| 0.33                   | 32         | 20     | 11     | 27.5   | 5.8                                  | 297              | 16.5             | 20       | 900          | EFPLA63J334D032LH        |
| 0.39                   | 32         | 20     | 11     | 27.5   | 6                                    | 351              | 16               | 20       | 900          | EFPLA63J394D032LH        |
| 0.47                   | 32         | 22     | 13     | 27.5   | 6.5                                  | 423              | 14               | 20       | 900          | EFPLA63J474D042LH        |
| 0.56                   | 32         | 22     | 13     | 27.5   | 7                                    | 504              | 12               | 20       | 900          | EFPLA63J564D042LH        |
| 0.68                   | 32         | 24.5   | 13     | 27.5   | 7.5                                  | 612              | 10.5             | 20       | 900          | EFPLA63J684D062LH        |
| 0.82                   | 32         | 28     | 14     | 27.5   | 8.5                                  | 738              | 9                | 20       | 900          | EFPLA63J824D082LH        |
| 1.0                    | 32         | 33     | 18     | 27.5   | 10                                   | 900              | 7                | 20       | 900          | EFPLA63J105D122LH        |
| 1.2                    | 32         | 33     | 18     | 27.5   | 13                                   | 1080             | 6                | 20       | 900          | EFPLA63J125D122LH        |

1. Standard part numbers listed--additional configurations available for tolerance, terminal and lead length. See part number system for available tolerances and terminal and lead length tables for available options.

Rating and part number

Rated voltage 630 Vdc

| Capacitance value (μF) | Dimensions |        |        |        | I <sub>rms</sub> +70 °C, 100 kHz (A) | Peak current (A) | ESR 100 kHz (mΩ) | ESL (nH) | dv/dt (V/μs) | Part number <sup>1</sup> |
|------------------------|------------|--------|--------|--------|--------------------------------------|------------------|------------------|----------|--------------|--------------------------|
|                        | W (mm)     | H (mm) | T (mm) | P (mm) |                                      |                  |                  |          |              |                          |
| 1.5                    | 32         | 37     | 22     | 27.5   | 15                                   | 1350             | 5                | 20       | 900          | EFPLA63J155D132LH        |
| 1.8                    | 32         | 37     | 22     | 27.5   | 16                                   | 1620             | 4                | 20       | 900          | EFPLA63J185D132LH        |
| 0.33                   | 42         | 22     | 11     | 37.5   | 6.8                                  | 165              | 13               | 25       | 500          | EFPLA63J334E012LH        |
| 0.47                   | 42         | 22     | 11     | 37.5   | 7                                    | 235              | 12.5             | 25       | 500          | EFPLA63J474E012LH        |
| 0.56                   | 42         | 22     | 11     | 37.5   | 7.5                                  | 280              | 11               | 25       | 500          | EFPLA63J564E012LH        |
| 0.68                   | 42         | 22     | 11     | 37.5   | 8                                    | 340              | 10.5             | 25       | 500          | EFPLA63J684E012LH        |
| 0.82                   | 42         | 28.5   | 16     | 37.5   | 8                                    | 410              | 10.5             | 25       | 500          | EFPLA63J824E052LH        |
| 1.0                    | 42         | 28.5   | 16     | 37.5   | 8.5                                  | 500              | 10               | 25       | 500          | EFPLA63J105E052LH        |
| 1.5                    | 42         | 28.5   | 16     | 37.5   | 9.5                                  | 750              | 9                | 25       | 500          | EFPLA63J155E052LH        |
| 1.8                    | 42         | 32     | 19     | 37.5   | 10.5                                 | 900              | 8.5              | 25       | 500          | EFPLA63J185E102LH        |
| 2.2                    | 42         | 40     | 20     | 37.5   | 11.5                                 | 1100             | 8                | 25       | 500          | EFPLA63J225E132LH        |
| 2.7                    | 42         | 40     | 20     | 37.5   | 13                                   | 1350             | 7                | 25       | 500          | EFPLA63J275E132LH        |
| 3.3                    | 42         | 44     | 24     | 37.5   | 14                                   | 1650             | 6                | 25       | 500          | EFPLA63J335E152LH        |
| 3.9                    | 42         | 45     | 30     | 37.5   | 15                                   | 1950             | 5                | 25       | 500          | EFPLA63J395E162LH        |
| 4.7                    | 42         | 50     | 35     | 37.5   | 16                                   | 2350             | 4                | 25       | 500          | EFPLA63J475E172LH        |

1. Standard part numbers listed---additional configurations available for tolerance, terminal and lead length. See part number system for available tolerances and terminal and lead length tables for available options.

Rating and part number

Rated voltage 1000 Vdc

| Capacitance value (µF) | Dimensions |        |        |        | I <sub>rms</sub> +70 °C, 100 kHz (A) | Peak current (A) | ESR 100 kHz (mΩ) | ESL (nH) | dv/dt (V/µs) | Part number <sup>1</sup> |
|------------------------|------------|--------|--------|--------|--------------------------------------|------------------|------------------|----------|--------------|--------------------------|
|                        | W (mm)     | H (mm) | T (mm) | P (mm) |                                      |                  |                  |          |              |                          |
| 0.0082                 | 18         | 11     | 5      | 15     | 1.5                                  | 28.7             | 80               | 12       | 3500         | EFPLA1AJ822B012LH        |
| 0.01                   | 18         | 11     | 5      | 15     | 1.8                                  | 35               | 62               | 12       | 3500         | EFPLA1AJ103B012LH        |
| 0.012                  | 18         | 11     | 5      | 15     | 2.2                                  | 42               | 52               | 12       | 3500         | EFPLA1AJ123B012LH        |
| 0.015                  | 18         | 11     | 5      | 15     | 2.5                                  | 52.5             | 42               | 12       | 3500         | EFPLA1AJ153B012LH        |
| 0.018                  | 18         | 11     | 5      | 15     | 2.7                                  | 63               | 35               | 12       | 3500         | EFPLA1AJ183B012LH        |
| 0.02                   | 18         | 12     | 6      | 15     | 2.8                                  | 70               | 32               | 12       | 3500         | EFPLA1AJ203B022LH        |
| 0.022                  | 18         | 12     | 6      | 15     | 3                                    | 77               | 29               | 12       | 3500         | EFPLA1AJ223B022LH        |
| 0.027                  | 18         | 13.5   | 7.5    | 15     | 3.5                                  | 94.5             | 24               | 12       | 3500         | EFPLA1AJ273B072LH        |
| 0.033                  | 18         | 13.5   | 7.5    | 15     | 4                                    | 115.5            | 19               | 12       | 3500         | EFPLA1AJ333B072LH        |
| 0.039                  | 18         | 14.5   | 8.5    | 15     | 4.5                                  | 136.5            | 16               | 12       | 3500         | EFPLA1AJ393B092LH        |
| 0.047                  | 18         | 14.5   | 8.5    | 15     | 4.9                                  | 164.5            | 14               | 12       | 3500         | EFPLA1AJ473B092LH        |
| 0.027                  | 26         | 15.5   | 6      | 22.5   | 3.8                                  | 56.7             | 24               | 15       | 2100         | EFPLA1AJ273C012LH        |
| 0.033                  | 26         | 15.5   | 6      | 22.5   | 4.3                                  | 69.3             | 19               | 15       | 2100         | EFPLA1AJ333C012LH        |
| 0.039                  | 26         | 15.5   | 6      | 22.5   | 4.8                                  | 81.9             | 16               | 15       | 2100         | EFPLA1AJ393C012LH        |
| 0.047                  | 26         | 16.5   | 7      | 22.5   | 5                                    | 98.7             | 15               | 15       | 2100         | EFPLA1AJ473C022LH        |
| 0.056                  | 26         | 16.5   | 7      | 22.5   | 5.4                                  | 117.6            | 14.5             | 15       | 2100         | EFPLA1AJ563C022LH        |
| 0.068                  | 26         | 17     | 8.5    | 22.5   | 5.6                                  | 142.8            | 14               | 15       | 2100         | EFPLA1AJ683C032LH        |
| 0.082                  | 26         | 19     | 10     | 22.5   | 5.8                                  | 172.2            | 13.5             | 15       | 2100         | EFPLA1AJ823C042LH        |
| 0.1                    | 26         | 19     | 10     | 22.5   | 6                                    | 210              | 13               | 15       | 2100         | EFPLA1AJ104C042LH        |
| 0.12                   | 26         | 20     | 11     | 22.5   | 6.5                                  | 180              | 12.5             | 15       | 1500         | EFPLA1AJ124C052LH        |
| 0.15                   | 26         | 22     | 12     | 22.5   | 7                                    | 225              | 11               | 15       | 1500         | EFPLA1AJ154C062LH        |
| 0.1                    | 32         | 17     | 8      | 27.5   | 4.5                                  | 90               | 25               | 20       | 900          | EFPLA1AJ104D012LH        |
| 0.12                   | 32         | 18     | 9      | 27.5   | 4.8                                  | 108              | 22               | 20       | 900          | EFPLA1AJ124D022LH        |
| 0.15                   | 32         | 20     | 11     | 27.5   | 5                                    | 135              | 21               | 20       | 900          | EFPLA1AJ154D032LH        |
| 0.18                   | 32         | 22     | 13     | 27.5   | 5.5                                  | 162              | 18               | 20       | 900          | EFPLA1AJ184D042LH        |
| 0.22                   | 32         | 22     | 13     | 27.5   | 6                                    | 198              | 14               | 20       | 900          | EFPLA1AJ224D042LH        |
| 0.27                   | 32         | 24.5   | 13     | 27.5   | 6.5                                  | 243              | 13.5             | 20       | 900          | EFPLA1AJ274D062LH        |
| 0.33                   | 32         | 28     | 14     | 27.5   | 7                                    | 297              | 12               | 20       | 900          | EFPLA1AJ334D082LH        |
| 0.39                   | 32         | 33     | 18     | 27.5   | 7.5                                  | 351              | 11               | 20       | 900          | EFPLA1AJ394D122LH        |
| 0.47                   | 32         | 33     | 18     | 27.5   | 8                                    | 423              | 10               | 20       | 900          | EFPLA1AJ474D122LH        |
| 0.56                   | 32         | 37     | 22     | 27.5   | 8.5                                  | 504              | 9                | 20       | 900          | EFPLA1AJ564D132LH        |
| 0.68                   | 32         | 37     | 22     | 27.5   | 9.5                                  | 612              | 8                | 20       | 900          | EFPLA1AJ684D132LH        |
| 0.18                   | 42         | 22     | 11     | 37.5   | 6                                    | 90               | 18               | 25       | 500          | EFPLA1AJ184E012LH        |
| 0.22                   | 42         | 22     | 11     | 37.5   | 6.5                                  | 110              | 14               | 25       | 500          | EFPLA1AJ224E012LH        |
| 0.27                   | 42         | 24     | 13     | 37.5   | 6.8                                  | 135              | 13               | 25       | 500          | EFPLA1AJ274E022LH        |
| 0.33                   | 42         | 24     | 13     | 37.5   | 7.2                                  | 165              | 12               | 25       | 500          | EFPLA1AJ334E022LH        |
| 0.39                   | 42         | 28     | 17     | 37.5   | 7.4                                  | 195              | 11.5             | 25       | 500          | EFPLA1AJ394E042LH        |
| 0.47                   | 42         | 28     | 17     | 37.5   | 7.6                                  | 235              | 11               | 25       | 500          | EFPLA1AJ474E042LH        |
| 0.56                   | 42         | 28     | 17     | 37.5   | 8                                    | 280              | 10.5             | 25       | 500          | EFPLA1AJ564E042LH        |
| 0.68                   | 42         | 32     | 19     | 37.5   | 8.5                                  | 340              | 10               | 25       | 500          | EFPLA1AJ684E102LH        |

1. Standard part numbers listed--additional configurations available for tolerance, terminal and lead length. See part number system for available tolerances and terminal and lead length tables for available options.

**Rating and part number**

**Rated voltage 1000 Vdc**

| Capacitance value (μF) | Dimensions |        |        |        | I <sub>rms</sub> +70 °C, 100 kHz (A) | Peak current (A) | ESR 100 kHz (mΩ) | ESL (nH) | dv/dt (V/μs) | Part number <sup>1</sup> |
|------------------------|------------|--------|--------|--------|--------------------------------------|------------------|------------------|----------|--------------|--------------------------|
|                        | W (mm)     | H (mm) | T (mm) | P (mm) |                                      |                  |                  |          |              |                          |
| 0.82                   | 42         | 40     | 20     | 37.5   | 10                                   | 410              | 9                | 25       | 500          | EFPLA1AJ824E132LH        |
| 1.0                    | 42         | 40     | 20     | 37.5   | 11                                   | 500              | 7                | 25       | 500          | EFPLA1AJ105E132LH        |
| 1.2                    | 42         | 44     | 24     | 37.5   | 12                                   | 600              | 6.5              | 25       | 500          | EFPLA1AJ125E152LH        |
| 1.5                    | 42         | 44     | 24     | 37.5   | 13                                   | 750              | 6                | 25       | 500          | EFPLA1AJ155E152LH        |
| 1.8                    | 42         | 45     | 30     | 37.5   | 15                                   | 900              | 5                | 25       | 500          | EFPLA1AJ185E162LH        |
| 2.2                    | 42         | 45     | 30     | 37.5   | 16                                   | 1100             | 4                | 25       | 500          | EFPLA1AJ225E162LH        |

1. Standard part numbers listed--additional configurations available for tolerance, terminal and lead length. See part number system for available tolerances and terminal and lead length tables for available options.

Rating and part number

Rated voltage 1300 Vdc

| Capacitance value (μF) | Dimensions |        |        |        | I <sub>rms</sub> +70 °C, 100 kHz (A) | Peak current (A) | ESR 100 kHz (mΩ) | ESL (nH) | dv/dt (V/μs) | Part number <sup>1</sup> |
|------------------------|------------|--------|--------|--------|--------------------------------------|------------------|------------------|----------|--------------|--------------------------|
|                        | W (mm)     | H (mm) | T (mm) | P (mm) |                                      |                  |                  |          |              |                          |
| 0.0082                 | 18         | 11     | 5      | 15     | 1.7                                  | 28.7             | 95               | 12       | 3500         | EFPLA1DJ822B012LH        |
| 0.01                   | 18         | 11     | 5      | 15     | 2                                    | 35               | 65               | 12       | 3500         | EFPLA1DJ103B012LH        |
| 0.012                  | 18         | 11     | 5      | 15     | 2.2                                  | 42               | 52               | 12       | 3500         | EFPLA1DJ123B012LH        |
| 0.015                  | 18         | 11     | 5      | 15     | 2.5                                  | 52.5             | 42               | 12       | 3500         | EFPLA1DJ153B012LH        |
| 0.018                  | 18         | 12     | 6      | 15     | 2.8                                  | 63               | 38               | 12       | 3500         | EFPLA1DJ183B022LH        |
| 0.02                   | 18         | 12     | 6      | 15     | 2.9                                  | 70               | 36               | 12       | 3500         | EFPLA1DJ203B022LH        |
| 0.022                  | 18         | 13     | 7      | 15     | 3.1                                  | 77               | 32               | 12       | 3500         | EFPLA1DJ223B052LH        |
| 0.027                  | 18         | 13.5   | 7.5    | 15     | 3.7                                  | 94.5             | 26               | 12       | 3500         | EFPLA1DJ273B072LH        |
| 0.033                  | 18         | 14.5   | 8.5    | 15     | 4                                    | 115.5            | 19               | 12       | 3500         | EFPLA1DJ333B092LH        |
| 0.039                  | 18         | 16     | 10     | 15     | 4.5                                  | 136.5            | 16               | 12       | 3500         | EFPLA1DJ393B112LH        |
| 0.047                  | 18         | 16     | 10     | 15     | 4.8                                  | 164.5            | 15               | 12       | 3500         | EFPLA1DJ473B112LH        |
| 0.056                  | 18         | 19     | 11     | 15     | 5                                    | 196              | 14               | 12       | 3500         | EFPLA1DJ563B162LH        |
| 0.027                  | 26         | 15.5   | 6      | 22.5   | 3.5                                  | 56.7             | 24               | 15       | 2100         | EFPLA1DJ273C012LH        |
| 0.033                  | 26         | 15.5   | 6      | 22.5   | 4                                    | 69.3             | 19               | 15       | 2100         | EFPLA1DJ333C012LH        |
| 0.039                  | 26         | 15.5   | 6      | 22.5   | 4.8                                  | 81.9             | 16               | 15       | 2100         | EFPLA1DJ393C012LH        |
| 0.047                  | 26         | 16.5   | 7      | 22.5   | 5                                    | 98.7             | 15               | 15       | 2100         | EFPLA1DJ473C022LH        |
| 0.056                  | 26         | 16.5   | 7      | 22.5   | 5.4                                  | 117.6            | 14.5             | 15       | 2100         | EFPLA1DJ563C022LH        |
| 0.068                  | 26         | 17     | 8.5    | 22.5   | 6                                    | 142.8            | 14               | 15       | 2100         | EFPLA1DJ683C032LH        |
| 0.082                  | 26         | 19     | 10     | 22.5   | 6.5                                  | 172.2            | 13.5             | 15       | 2100         | EFPLA1DJ823C042LH        |
| 0.1                    | 26         | 19     | 10     | 22.5   | 7                                    | 210              | 13               | 15       | 2100         | EFPLA1DJ104C042LH        |
| 0.12                   | 26         | 20     | 11     | 22.5   | 6.5                                  | 180              | 12.5             | 15       | 1500         | EFPLA1DJ124C052LH        |
| 0.15                   | 26         | 22     | 12     | 22.5   | 7                                    | 225              | 12               | 15       | 1500         | EFPLA1DJ154C062LH        |
| 0.18                   | 26         | 24.5   | 13     | 22.5   | 7.5                                  | 270              | 11               | 15       | 1500         | EFPLA1DJ184C082LH        |
| 0.22                   | 26         | 29.5   | 14.5   | 22.5   | 8.5                                  | 330              | 9.5              | 15       | 1500         | EFPLA1DJ224C102LH        |
| 0.1                    | 32         | 17     | 8      | 27.5   | 5.8                                  | 90               | 19               | 20       | 900          | EFPLA1DJ104D012LH        |
| 0.12                   | 32         | 18     | 9      | 27.5   | 6.2                                  | 108              | 18               | 20       | 900          | EFPLA1DJ124D022LH        |
| 0.15                   | 32         | 20     | 11     | 27.5   | 6.8                                  | 135              | 15               | 20       | 900          | EFPLA1DJ154D032LH        |
| 0.18                   | 32         | 22     | 13     | 27.5   | 7                                    | 162              | 14               | 20       | 900          | EFPLA1DJ184D042LH        |
| 0.22                   | 32         | 22     | 13     | 27.5   | 7.5                                  | 198              | 12               | 20       | 900          | EFPLA1DJ224D042LH        |
| 0.27                   | 32         | 24     | 14     | 27.5   | 8                                    | 243              | 11               | 20       | 900          | EFPLA1DJ274D052LH        |
| 0.33                   | 32         | 28     | 14     | 27.5   | 8.5                                  | 297              | 10               | 20       | 900          | EFPLA1DJ334D082LH        |
| 0.39                   | 32         | 30     | 16     | 27.5   | 9                                    | 351              | 9.5              | 20       | 900          | EFPLA1DJ394D102LH        |
| 0.47                   | 32         | 33     | 18     | 27.5   | 9.5                                  | 423              | 9                | 20       | 900          | EFPLA1DJ474D122LH        |
| 0.56                   | 32         | 37     | 22     | 27.5   | 10                                   | 504              | 8.5              | 20       | 900          | EFPLA1DJ564D132LH        |
| 0.68                   | 32         | 37     | 22     | 27.5   | 11                                   | 612              | 8                | 20       | 900          | EFPLA1DJ684D132LH        |
| 0.18                   | 42         | 22     | 11     | 37.5   | 5.8                                  | 90               | 19               | 25       | 500          | EFPLA1DJ184E012LH        |
| 0.22                   | 42         | 22     | 11     | 37.5   | 6                                    | 110              | 18               | 25       | 500          | EFPLA1DJ224E012LH        |
| 0.27                   | 42         | 24     | 13     | 37.5   | 6.2                                  | 135              | 16.5             | 25       | 500          | EFPLA1DJ274E022LH        |
| 0.33                   | 42         | 24     | 13     | 37.5   | 6.5                                  | 165              | 15               | 25       | 500          | EFPLA1DJ334E022LH        |
| 0.39                   | 42         | 28     | 17     | 37.5   | 7.4                                  | 195              | 13               | 25       | 500          | EFPLA1DJ394E042LH        |

1. Standard part numbers listed--additional configurations available for tolerance, terminal and lead length. See part number system for available tolerances and terminal and lead length tables for available options.



**Rating and part number**

**Rated voltage 1300 Vdc**

| Capacitance value (μF) | Dimensions |        |        |        | I <sub>rms</sub> +70 °C, 100 kHz (A) | Peak current (A) | ESR 100 kHz (mΩ) | ESL (nH) | dv/dt (V/μs) | Part number <sup>1</sup> |
|------------------------|------------|--------|--------|--------|--------------------------------------|------------------|------------------|----------|--------------|--------------------------|
|                        | W (mm)     | H (mm) | T (mm) | P (mm) |                                      |                  |                  |          |              |                          |
| 0.47                   | 42         | 28     | 17     | 37.5   | 7.6                                  | 235              | 12.5             | 25       | 500          | EFPLA1DJ474E042LH        |
| 0.56                   | 42         | 28     | 17     | 37.5   | 8.5                                  | 280              | 11.5             | 25       | 500          | EFPLA1DJ564E042LH        |
| 0.68                   | 42         | 32     | 19     | 37.5   | 9                                    | 340              | 11               | 25       | 500          | EFPLA1DJ684E102LH        |
| 0.82                   | 42         | 40     | 20     | 37.5   | 10                                   | 410              | 9                | 25       | 500          | EFPLA1DJ824E132LH        |
| 1.0                    | 42         | 40     | 20     | 37.5   | 11.5                                 | 500              | 8                | 25       | 500          | EFPLA1DJ105E132LH        |
| 1.2                    | 42         | 44     | 24     | 37.5   | 12.5                                 | 600              | 7                | 25       | 500          | EFPLA1DJ125E152LH        |
| 1.5                    | 42         | 43     | 28     | 37.5   | 14                                   | 750              | 5.8              | 25       | 500          | EFPLA1DJ155E142LH        |
| 1.8                    | 42         | 45     | 30     | 37.5   | 16                                   | 900              | 5                | 25       | 500          | EFPLA1DJ185E162LH        |

1. Standard part numbers listed---additional configurations available for tolerance, terminal and lead length. See part number system for available tolerances and terminal and lead length tables for available options.

Rating and part number

Rated voltage 1600 Vdc

| Capacitance value (µF) | Dimensions |        |        |        | I <sub>rms</sub> +70 °C, 100 kHz (A) | Peak current (A) | ESR 100 kHz (mΩ) | ESL (nH) | dv/dt (V/µs) | Part number <sup>1</sup> |
|------------------------|------------|--------|--------|--------|--------------------------------------|------------------|------------------|----------|--------------|--------------------------|
|                        | W (mm)     | H (mm) | T (mm) | P (mm) |                                      |                  |                  |          |              |                          |
| 0.0033                 | 18         | 11     | 5      | 15     | 1.1                                  | 19.8             | 190              | 12       | 6000         | EFPLA1GJ332B012LH        |
| 0.0047                 | 18         | 11     | 5      | 15     | 1.3                                  | 28.2             | 165              | 12       | 6000         | EFPLA1GJ472B012LH        |
| 0.0056                 | 18         | 11     | 5      | 15     | 1.4                                  | 33.6             | 120              | 12       | 6000         | EFPLA1GJ562B012LH        |
| 0.0068                 | 18         | 11     | 5      | 15     | 1.6                                  | 40.8             | 100              | 12       | 6000         | EFPLA1GJ682B012LH        |
| 0.0082                 | 18         | 11     | 5      | 15     | 1.8                                  | 49.2             | 95               | 12       | 6000         | EFPLA1GJ822B012LH        |
| 0.01                   | 18         | 11     | 5      | 15     | 2                                    | 60               | 65               | 12       | 6000         | EFPLA1GJ103B012LH        |
| 0.012                  | 18         | 12     | 6      | 15     | 2.3                                  | 72               | 50               | 12       | 6000         | EFPLA1GJ123B022LH        |
| 0.015                  | 18         | 12     | 6      | 15     | 2.5                                  | 90               | 45               | 12       | 6000         | EFPLA1GJ153B022LH        |
| 0.018                  | 18         | 13.5   | 7.5    | 15     | 3                                    | 108              | 35               | 12       | 6000         | EFPLA1GJ183B072LH        |
| 0.022                  | 18         | 13.5   | 7.5    | 15     | 3.2                                  | 132              | 30               | 12       | 6000         | EFPLA1GJ223B072LH        |
| 0.027                  | 18         | 14.5   | 8.5    | 15     | 3.8                                  | 162              | 25               | 12       | 6000         | EFPLA1GJ273B092LH        |
| 0.033                  | 18         | 14.5   | 8.5    | 15     | 4                                    | 198              | 20               | 12       | 6000         | EFPLA1GJ333B092LH        |
| 0.015                  | 26         | 15.5   | 6      | 22.5   | 2.8                                  | 45               | 40               | 15       | 3000         | EFPLA1GJ153C012LH        |
| 0.022                  | 26         | 15.5   | 6      | 22.5   | 3.5                                  | 66               | 30               | 15       | 3000         | EFPLA1GJ223C012LH        |
| 0.033                  | 26         | 15.5   | 6      | 22.5   | 4                                    | 99               | 20               | 15       | 3000         | EFPLA1GJ333C012LH        |
| 0.039                  | 26         | 16.5   | 7      | 22.5   | 4.8                                  | 117              | 16               | 15       | 3000         | EFPLA1GJ393C022LH        |
| 0.047                  | 26         | 16.5   | 7      | 22.5   | 5.2                                  | 141              | 15               | 15       | 3000         | EFPLA1GJ473C022LH        |
| 0.056                  | 26         | 17     | 8.5    | 22.5   | 5.4                                  | 168              | 14               | 15       | 3000         | EFPLA1GJ563C032LH        |
| 0.068                  | 26         | 19     | 10     | 22.5   | 5.8                                  | 204              | 13               | 15       | 3000         | EFPLA1GJ683C042LH        |
| 0.082                  | 26         | 19     | 10     | 22.5   | 6                                    | 246              | 12               | 15       | 3000         | EFPLA1GJ823C042LH        |
| 0.1                    | 26         | 20     | 11     | 22.5   | 6.5                                  | 300              | 11               | 15       | 3000         | EFPLA1GJ104C052LH        |
| 0.039                  | 32         | 17     | 8      | 27.5   | 3.8                                  | 78               | 30               | 20       | 2000         | EFPLA1GJ393D012LH        |
| 0.047                  | 32         | 17     | 8      | 27.5   | 4                                    | 94               | 29               | 20       | 2000         | EFPLA1GJ473D012LH        |
| 0.056                  | 32         | 17     | 8      | 27.5   | 4.5                                  | 112              | 28               | 20       | 2000         | EFPLA1GJ563D012LH        |
| 0.068                  | 32         | 18     | 9      | 27.5   | 5                                    | 136              | 24               | 20       | 2000         | EFPLA1GJ683D022LH        |
| 0.082                  | 32         | 20     | 11     | 27.5   | 5.5                                  | 164              | 20               | 20       | 2000         | EFPLA1GJ823D032LH        |
| 0.1                    | 32         | 22     | 13     | 27.5   | 6                                    | 200              | 18               | 20       | 2000         | EFPLA1GJ104D042LH        |
| 0.12                   | 32         | 22     | 13     | 27.5   | 6.5                                  | 240              | 16               | 20       | 2000         | EFPLA1GJ124D042LH        |
| 0.15                   | 32         | 24.5   | 13     | 27.5   | 7                                    | 300              | 14               | 20       | 2000         | EFPLA1GJ154D062LH        |
| 0.18                   | 32         | 28     | 14     | 27.5   | 7.5                                  | 360              | 12               | 20       | 2000         | EFPLA1GJ184D082LH        |
| 0.22                   | 32         | 33     | 18     | 27.5   | 8.5                                  | 440              | 10               | 20       | 2000         | EFPLA1GJ224D122LH        |
| 0.27                   | 32         | 33     | 18     | 27.5   | 9                                    | 540              | 9.5              | 20       | 2000         | EFPLA1GJ274D122LH        |
| 0.33                   | 32         | 33     | 18     | 27.5   | 10                                   | 660              | 8                | 20       | 2000         | EFPLA1GJ334D122LH        |
| 0.39                   | 32         | 37     | 22     | 27.5   | 11                                   | 780              | 7                | 20       | 2000         | EFPLA1GJ394D132LH        |
| 0.47                   | 32         | 37     | 22     | 27.5   | 12                                   | 940              | 6                | 20       | 2000         | EFPLA1GJ474D132LH        |
| 0.082                  | 42         | 22     | 11     | 37.5   | 4.8                                  | 98.4             | 28               | 25       | 1200         | EFPLA1GJ823E012LH        |
| 0.1                    | 42         | 22     | 11     | 37.5   | 5                                    | 120              | 24               | 25       | 1200         | EFPLA1GJ104E012LH        |
| 0.12                   | 42         | 22     | 11     | 37.5   | 5.5                                  | 144              | 22               | 25       | 1200         | EFPLA1GJ124E012LH        |
| 0.15                   | 42         | 22     | 11     | 37.5   | 5.8                                  | 180              | 20               | 25       | 1200         | EFPLA1GJ154E012LH        |

1. Standard part numbers listed---additional configurations available for tolerance, terminal and lead length. See part number system for available tolerances and terminal and lead length tables for available options.

**Rating and part number**

**Rated voltage 1600 Vdc**

| Capacitance value (μF) | Dimensions |        |        |        | I <sub>rms</sub> +70 °C, 100 kHz (A) | Peak current (A) | ESR 100 kHz (mΩ) | ESL (nH) | dv/dt (V/μs) | Part number <sup>1</sup> |
|------------------------|------------|--------|--------|--------|--------------------------------------|------------------|------------------|----------|--------------|--------------------------|
|                        | W (mm)     | H (mm) | T (mm) | P (mm) |                                      |                  |                  |          |              |                          |
| 0.18                   | 42         | 24     | 13     | 37.5   | 6                                    | 216              | 18               | 25       | 1200         | EFPLA1GJ184E022LH        |
| 0.22                   | 42         | 24     | 13     | 37.5   | 6.2                                  | 264              | 17               | 25       | 1200         | EFPLA1GJ224E022LH        |
| 0.27                   | 42         | 24     | 13     | 37.5   | 6.5                                  | 324              | 15               | 25       | 1200         | EFPLA1GJ274E022LH        |
| 0.33                   | 42         | 28.5   | 16     | 37.5   | 6.8                                  | 396              | 14               | 25       | 1200         | EFPLA1GJ334E052LH        |
| 0.39                   | 42         | 28.5   | 16     | 37.5   | 7.5                                  | 468              | 12.5             | 25       | 1200         | EFPLA1GJ394E052LH        |
| 0.47                   | 42         | 32     | 19     | 37.5   | 8                                    | 564              | 12               | 25       | 1200         | EFPLA1GJ474E102LH        |
| 0.56                   | 42         | 40     | 20     | 37.5   | 9                                    | 672              | 11               | 25       | 1200         | EFPLA1GJ564E132LH        |
| 0.68                   | 42         | 40     | 20     | 37.5   | 9.5                                  | 816              | 10.5             | 25       | 1200         | EFPLA1GJ684E132LH        |
| 0.82                   | 42         | 44     | 24     | 37.5   | 10.5                                 | 984              | 9                | 25       | 1200         | EFPLA1GJ824E152LH        |
| 1.0                    | 42         | 44     | 24     | 37.5   | 12                                   | 1200             | 7.5              | 25       | 1200         | EFPLA1GJ105E152LH        |
| 1.2                    | 42         | 45     | 30     | 37.5   | 14                                   | 1440             | 6                | 25       | 1200         | EFPLA1GJ125E162LH        |

1. Standard part numbers listed--additional configurations available for tolerance, terminal and lead length. See part number system for available tolerances and terminal and lead length tables for available options.

Rating and part number

Rated voltage 2000 Vdc

| Capacitance value (μF) | Dimensions |        |        |        | I <sub>rms</sub> +70 °C, 100 kHz (A) | Peak current (A) | ESR 100 kHz (mΩ) | ESL (nH) | dv/dt (V/μs) | Part number <sup>1</sup> |
|------------------------|------------|--------|--------|--------|--------------------------------------|------------------|------------------|----------|--------------|--------------------------|
|                        | W (mm)     | H (mm) | T (mm) | P (mm) |                                      |                  |                  |          |              |                          |
| 0.001                  | 18         | 11     | 5      | 15     | 0.5                                  | 9.5              | 630              | 12       | 9500         | EFPLA2AJ102B012LH        |
| 0.0012                 | 18         | 11     | 5      | 15     | 0.6                                  | 11.4             | 500              | 12       | 9500         | EFPLA2AJ122B012LH        |
| 0.0015                 | 18         | 11     | 5      | 15     | 0.7                                  | 14.25            | 420              | 12       | 9500         | EFPLA2AJ152B012LH        |
| 0.0018                 | 18         | 11     | 5      | 15     | 0.8                                  | 17.1             | 350              | 12       | 9500         | EFPLA2AJ182B012LH        |
| 0.0022                 | 18         | 11     | 5      | 15     | 0.9                                  | 20.9             | 300              | 12       | 9500         | EFPLA2AJ222B012LH        |
| 0.0027                 | 18         | 11     | 5      | 15     | 1                                    | 25.65            | 240              | 12       | 9500         | EFPLA2AJ272B012LH        |
| 0.0033                 | 18         | 11     | 5      | 15     | 1.2                                  | 31.35            | 190              | 12       | 9500         | EFPLA2AJ332B012LH        |
| 0.0039                 | 18         | 11     | 5      | 15     | 1.3                                  | 37.05            | 165              | 12       | 9500         | EFPLA2AJ392B012LH        |
| 0.0047                 | 18         | 11     | 5      | 15     | 1.4                                  | 44.65            | 135              | 12       | 9500         | EFPLA2AJ472B012LH        |
| 0.0056                 | 18         | 12     | 6      | 15     | 1.6                                  | 53.2             | 110              | 12       | 9500         | EFPLA2AJ562B022LH        |
| 0.0068                 | 18         | 12     | 6      | 15     | 1.8                                  | 64.6             | 95               | 12       | 9500         | EFPLA2AJ682B022LH        |
| 0.0082                 | 18         | 12     | 6      | 15     | 2                                    | 77.9             | 80               | 12       | 9500         | EFPLA2AJ822B022LH        |
| 0.01                   | 18         | 13.5   | 7.5    | 15     | 2.5                                  | 95               | 65               | 12       | 9500         | EFPLA2AJ103B072LH        |
| 0.012                  | 18         | 14.5   | 8.5    | 15     | 2.8                                  | 114              | 50               | 12       | 9500         | EFPLA2AJ123B092LH        |
| 0.015                  | 18         | 14.5   | 8.5    | 15     | 3                                    | 142.5            | 45               | 12       | 9500         | EFPLA2AJ153B092LH        |
| 0.018                  | 18         | 16     | 10     | 15     | 3.8                                  | 171              | 35               | 12       | 9500         | EFPLA2AJ183B112LH        |
| 0.001                  | 26         | 15.5   | 6      | 22.5   | 0.6                                  | 4.5              | 550              | 15       | 4500         | EFPLA2AJ102C012LH        |
| 0.0012                 | 26         | 15.5   | 6      | 22.5   | 0.7                                  | 5.4              | 450              | 15       | 4500         | EFPLA2AJ122C012LH        |
| 0.0015                 | 26         | 15.5   | 6      | 22.5   | 0.8                                  | 6.75             | 360              | 15       | 4500         | EFPLA2AJ152C012LH        |
| 0.0018                 | 26         | 15.5   | 6      | 22.5   | 0.9                                  | 8.1              | 300              | 15       | 4500         | EFPLA2AJ182C012LH        |
| 0.0022                 | 26         | 15.5   | 6      | 22.5   | 1                                    | 9.9              | 250              | 15       | 4500         | EFPLA2AJ222C012LH        |
| 0.0027                 | 26         | 15.5   | 6      | 22.5   | 1.2                                  | 12.15            | 230              | 15       | 4500         | EFPLA2AJ272C012LH        |
| 0.0033                 | 26         | 15.5   | 6      | 22.5   | 1.2                                  | 14.85            | 200              | 15       | 4500         | EFPLA2AJ332C012LH        |
| 0.0039                 | 26         | 15.5   | 6      | 22.5   | 1.4                                  | 17.55            | 180              | 15       | 4500         | EFPLA2AJ392C012LH        |
| 0.0047                 | 26         | 15.5   | 6      | 22.5   | 1.6                                  | 21.15            | 140              | 15       | 4500         | EFPLA2AJ472C012LH        |
| 0.0056                 | 26         | 15.5   | 6      | 22.5   | 1.8                                  | 25.2             | 120              | 15       | 4500         | EFPLA2AJ562C012LH        |
| 0.0068                 | 26         | 15.5   | 6      | 22.5   | 2                                    | 30.6             | 95               | 15       | 4500         | EFPLA2AJ682C012LH        |
| 0.0082                 | 26         | 15.5   | 6      | 22.5   | 2.2                                  | 36.9             | 75               | 15       | 4500         | EFPLA2AJ822C012LH        |
| 0.01                   | 26         | 15.5   | 6      | 22.5   | 2.3                                  | 45               | 65               | 15       | 4500         | EFPLA2AJ103C012LH        |
| 0.012                  | 26         | 15.5   | 6      | 22.5   | 2.5                                  | 54               | 60               | 15       | 4500         | EFPLA2AJ123C012LH        |
| 0.015                  | 26         | 15.5   | 6      | 22.5   | 2.8                                  | 67.5             | 45               | 15       | 4500         | EFPLA2AJ153C012LH        |
| 0.018                  | 26         | 15.5   | 6      | 22.5   | 3.2                                  | 81               | 35               | 15       | 4500         | EFPLA2AJ183C012LH        |
| 0.022                  | 26         | 16.5   | 7      | 22.5   | 4                                    | 99               | 26               | 15       | 4500         | EFPLA2AJ223C022LH        |
| 0.027                  | 26         | 16.5   | 7      | 22.5   | 4.5                                  | 121.5            | 20               | 15       | 4500         | EFPLA2AJ273C022LH        |
| 0.033                  | 26         | 17     | 8.5    | 22.5   | 5.2                                  | 148.5            | 18               | 15       | 4500         | EFPLA2AJ333C032LH        |
| 0.039                  | 26         | 19     | 10     | 22.5   | 5.8                                  | 175.5            | 15               | 15       | 4500         | EFPLA2AJ393C042LH        |
| 0.047                  | 26         | 19     | 10     | 22.5   | 6                                    | 211.5            | 13               | 15       | 4500         | EFPLA2AJ473C042LH        |
| 0.056                  | 26         | 20     | 11     | 22.5   | 6.5                                  | 252              | 12               | 15       | 4500         | EFPLA2AJ563C052LH        |
| 0.022                  | 32         | 17     | 8      | 27.5   | 3                                    | 55               | 45               | 20       | 2500         | EFPLA2AJ223D012LH        |
| 0.027                  | 32         | 17     | 8      | 27.5   | 3.5                                  | 67.5             | 40               | 20       | 2500         | EFPLA2AJ273D012LH        |
| 0.033                  | 32         | 18     | 9      | 27.5   | 4                                    | 82.5             | 35               | 20       | 2500         | EFPLA2AJ333D022LH        |

1. Standard part numbers listed--additional configurations available for tolerance, terminal and lead length. See part number system for available tolerances and terminal and lead length tables for available options.

Rating and part number

Rated voltage 2000 Vdc

| Capacitance value (μF) | Dimensions |        |        |        | I <sub>rms</sub> +70 °C 100 kHz (A) | Peak current (A) | ESR 100 kHz (mΩ) | ESL (nH) | dv/dt (V/μs) | Part number <sup>1</sup> |
|------------------------|------------|--------|--------|--------|-------------------------------------|------------------|------------------|----------|--------------|--------------------------|
|                        | W (mm)     | H (mm) | T (mm) | P (mm) |                                     |                  |                  |          |              |                          |
| 0.039                  | 32         | 20     | 11     | 27.5   | 4.5                                 | 97.5             | 28               | 20       | 2500         | EFPLA2AJ393D032LH        |
| 0.047                  | 32         | 20     | 11     | 27.5   | 4.8                                 | 117.5            | 25               | 20       | 2500         | EFPLA2AJ473D032LH        |
| 0.056                  | 32         | 22     | 13     | 27.5   | 5                                   | 140              | 24               | 20       | 2500         | EFPLA2AJ563D042LH        |
| 0.068                  | 32         | 22     | 13     | 27.5   | 5.5                                 | 170              | 22               | 20       | 2500         | EFPLA2AJ683D042LH        |
| 0.082                  | 32         | 24.5   | 13     | 27.5   | 6                                   | 205              | 20               | 20       | 2500         | EFPLA2AJ823D062LH        |
| 0.1                    | 32         | 28     | 14     | 27.5   | 6.5                                 | 250              | 18               | 20       | 2500         | EFPLA2AJ104D082LH        |
| 0.12                   | 32         | 33     | 18     | 27.5   | 7                                   | 300              | 16               | 20       | 2500         | EFPLA2AJ124D122LH        |
| 0.15                   | 32         | 33     | 18     | 27.5   | 7.5                                 | 375              | 14               | 20       | 2500         | EFPLA2AJ154D122LH        |
| 0.18                   | 32         | 37     | 22     | 27.5   | 8                                   | 450              | 12               | 20       | 2500         | EFPLA2AJ184D132LH        |
| 0.22                   | 32         | 37     | 22     | 27.5   | 8.5                                 | 550              | 10               | 20       | 2500         | EFPLA2AJ224D132LH        |
| 0.033                  | 42         | 22     | 11     | 37.5   | 4                                   | 49.5             | 35               | 25       | 1500         | EFPLA2AJ333E012LH        |
| 0.039                  | 42         | 22     | 11     | 37.5   | 4.5                                 | 58.5             | 28               | 25       | 1500         | EFPLA2AJ393E012LH        |
| 0.047                  | 42         | 22     | 11     | 37.5   | 4.8                                 | 70.5             | 26               | 25       | 1500         | EFPLA2AJ473E012LH        |
| 0.056                  | 42         | 22     | 11     | 37.5   | 5                                   | 84               | 24               | 25       | 1500         | EFPLA2AJ563E012LH        |
| 0.068                  | 42         | 22     | 11     | 37.5   | 5.4                                 | 102              | 23               | 25       | 1500         | EFPLA2AJ683E012LH        |
| 0.082                  | 42         | 22     | 11     | 37.5   | 5.8                                 | 123              | 22               | 25       | 1500         | EFPLA2AJ823E012LH        |
| 0.1                    | 42         | 24     | 13     | 37.5   | 6.5                                 | 150              | 18               | 25       | 1500         | EFPLA2AJ104E022LH        |
| 0.12                   | 42         | 24     | 13     | 37.5   | 7                                   | 180              | 16               | 25       | 1500         | EFPLA2AJ124E022LH        |
| 0.15                   | 42         | 28.5   | 16     | 37.5   | 7.5                                 | 225              | 15               | 25       | 1500         | EFPLA2AJ154E052LH        |
| 0.18                   | 42         | 28.5   | 16     | 37.5   | 8                                   | 270              | 14               | 25       | 1500         | EFPLA2AJ184E052LH        |
| 0.22                   | 42         | 32     | 19     | 37.5   | 8.5                                 | 330              | 12               | 25       | 1500         | EFPLA2AJ224E102LH        |
| 0.27                   | 42         | 40     | 20     | 37.5   | 9                                   | 405              | 11               | 25       | 1500         | EFPLA2AJ274E132LH        |
| 0.33                   | 42         | 40     | 20     | 37.5   | 9.5                                 | 495              | 10.5             | 25       | 1500         | EFPLA2AJ334E132LH        |
| 0.39                   | 42         | 44     | 24     | 37.5   | 10                                  | 585              | 9.5              | 25       | 1500         | EFPLA2AJ394E152LH        |
| 0.47                   | 42         | 44     | 24     | 37.5   | 10.5                                | 705              | 9                | 25       | 1500         | EFPLA2AJ474E152LH        |
| 0.56                   | 42         | 45     | 30     | 37.5   | 12                                  | 840              | 7.5              | 25       | 1500         | EFPLA2AJ564E162LH        |
| 0.68                   | 42         | 45     | 30     | 37.5   | 14                                  | 1020             | 6                | 25       | 1500         | EFPLA2AJ684E162LH        |

1. Standard part numbers listed---additional configurations available for tolerance, terminal and lead length. See part number system for available tolerances and terminal and lead length tables for available options.

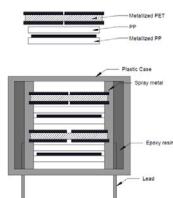
## General information

|  |   |
|--|---|
| Application                              | DC/pulse and high frequency applications  |
| Dielectric                               | Polypropylene Film  |
| Reference standard                       | IEC 61071/EN 61071/AEC-Q200D  |
| Climatic category                        | 55/105/56 IEC 60068-1   |
| Operating temperature range              | -55 °C to +105 °C, (+85°C to +105°C, decreasing factor 1.25% per °C for $U_R$ )   |
| Installation                             | Any position  |
| Storage conditions                       | Storage time: ≤24 months from the date marked on the package label, Average relative humidity per year ≤70%, RH≤85% for 30 days in one year, Dew is absent, Temperature: -40 °C to +85 °C |
| Application note and limiting conditions | The continuous peak voltage shall not exceed the rated DC voltage rating  |

## Construction

|                      |                        |
|----------------------|------------------------|
| Metallized film      | PET/PP & Al            |
| Metal sprayed        | Sn/Zn Alloy            |
| Connection electrode | Tinned copper wire     |
| Plastic case         | Plastic Case (UL94V-0) |
| Filling              | Epoxy Resin (UL94V-0)  |

Film construction

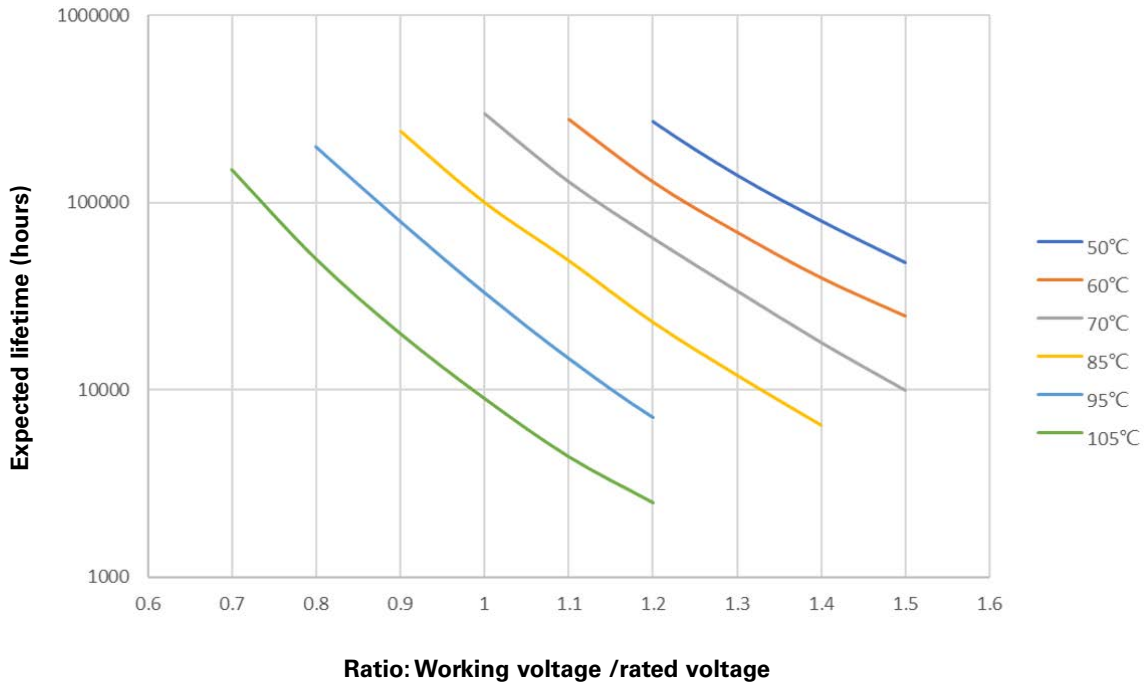


## Electrical and general characteristics

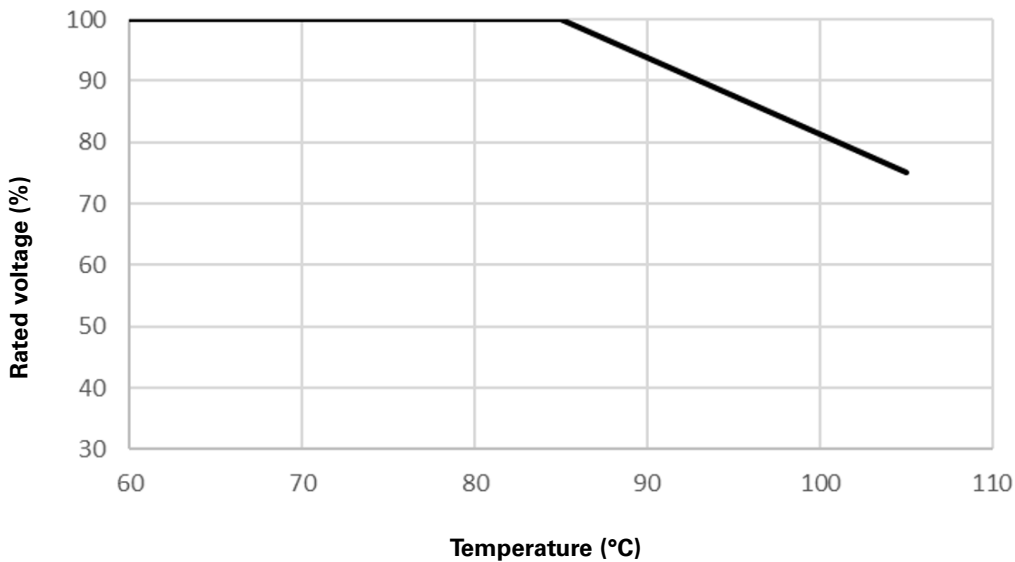
|  |  |
|--|--|
| Voltage range ( $U_R$ )                                    | 630 Vdc to 2000 Vdc  |
| Capacitance range  | 0.001 $\mu$ F to 4.7 $\mu$ F   |
| Capacitance tolerance                                      | ±5% or ±10% at +20 °C  |
| Capacitance  | Measuring frequency at 1 kHz, +20 °C<br>Measuring voltage: 1.0 ±0.2 V  |
| Standard atmospheric conditions for static test            | Ambient temperature +15 °C to +35 °C.<br>Relative humidity 45% to 75%<br>Air pressure 86 kPa to 106 kPa.   |
| Withstanding DC voltage between terminals $U_{TT}$         | $1.5 \times U_R$ for 10 seconds (between terminations) @ +20 °C ±5 °C  |
| Withstanding AC voltage between terminal and case $U_{TC}$ | $2U_R / \sqrt{2} + 1000$ Vac, 50/60 Hz 60 s (at +20 ±5 °C)   |
| Dissipation factor   | $10 \times 10^{-4}$ at 1kHz, +20 °C +/- 5 °C   |
| Insulation resistance                                      | R between leads, for $C \leq 0.33 \mu$ F at 100 V; 1 min > 100,000 M $\Omega$<br>RC between leads, for $C > 0.33 \mu$ F at 100 V; 1 min > 30,000 M $\Omega \cdot \mu$ F  |
| Self-inductance  | <1 nH per mm of lead spacing   |
| Life expectancy  | 100,000 hours ( $U_R$ $\theta$ hotspot = +85 °C) ( $\Delta C/C \leq 5\%$ )   |
| Failure rate   | 100 FITs ( $U_R$ $\theta$ hotspot = +85 °C)  |
| Maximum altitude   | 2000 m   |
| Overvoltage  | Maximum duration within one day:<br>Apply 110% of rated voltage 30% of on-load duration<br>Apply 115% of rated voltage 30 minutes<br>Apply 120% of rated voltage 5 minutes<br>Apply 130% of rated voltage 1 minute |

**Characteristics curves**

**Expected life curve**

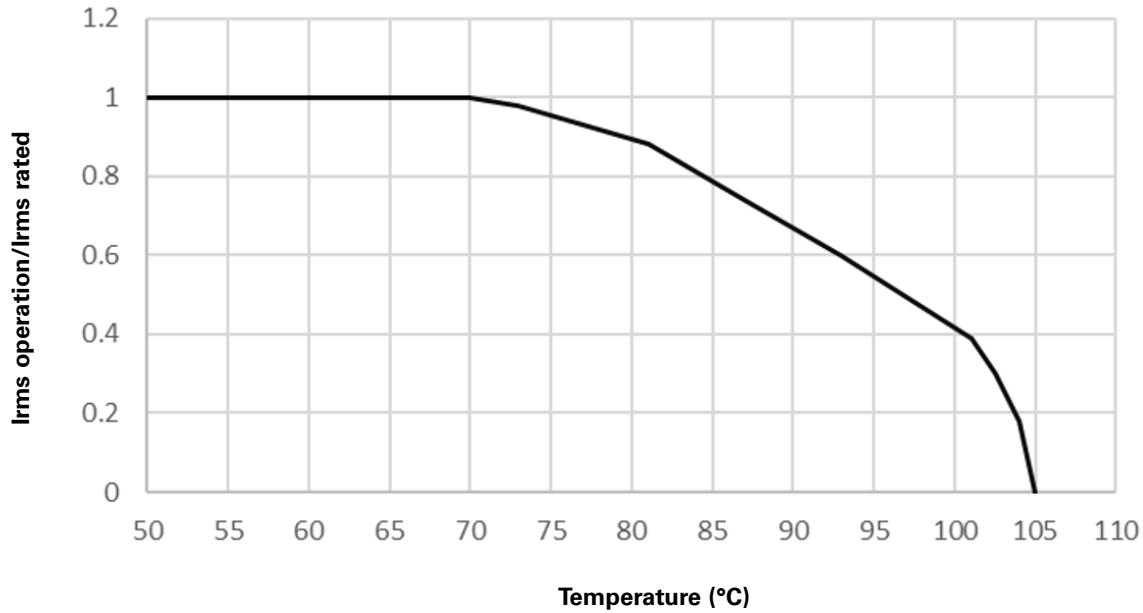


**Derating of  $U_R$  vs temperature**

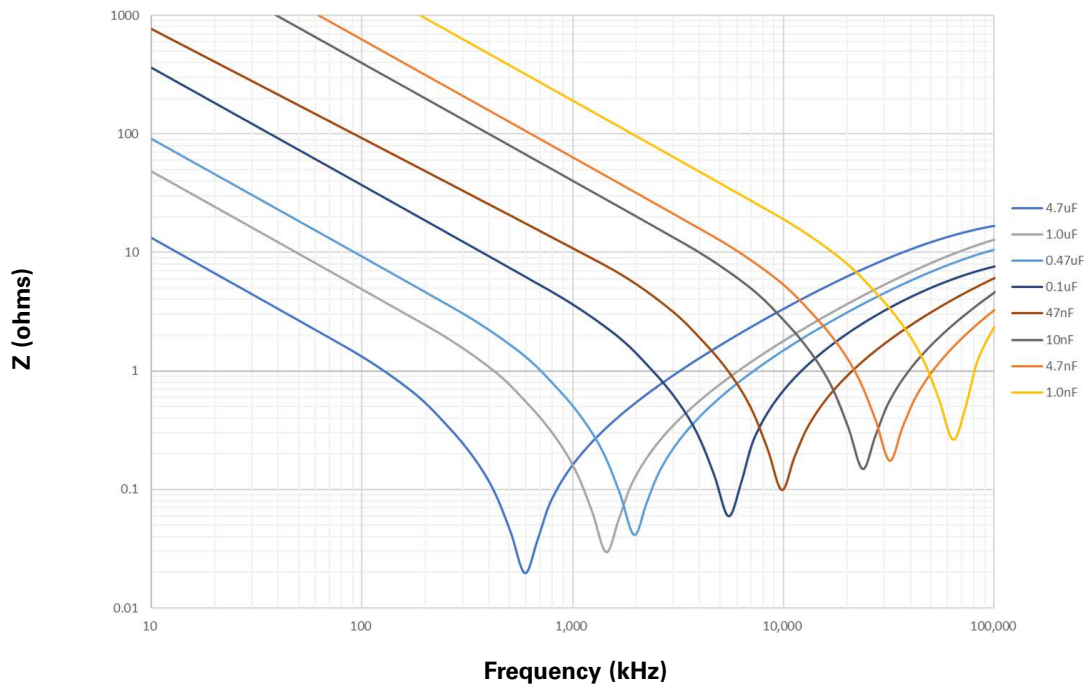


### Characteristics curves

#### Derating of $I_{rms}$ vs temperature

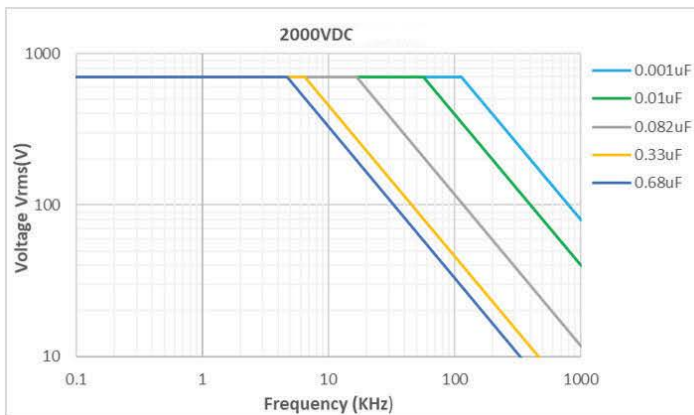
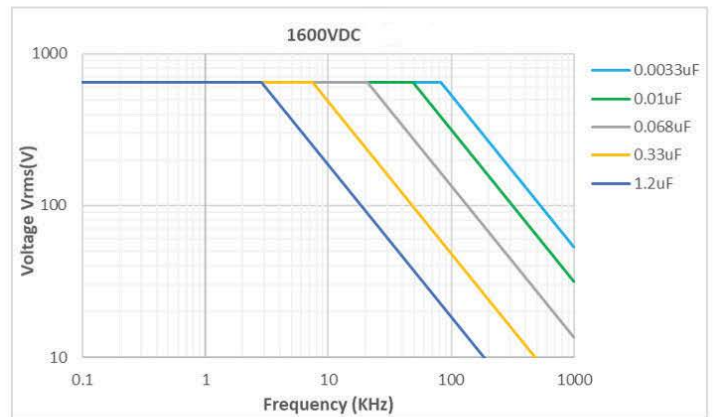
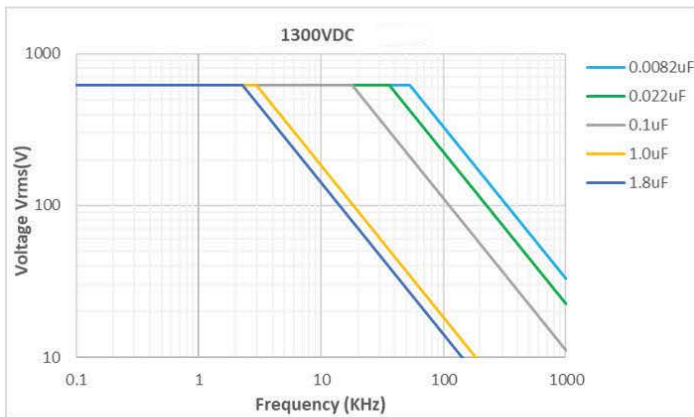
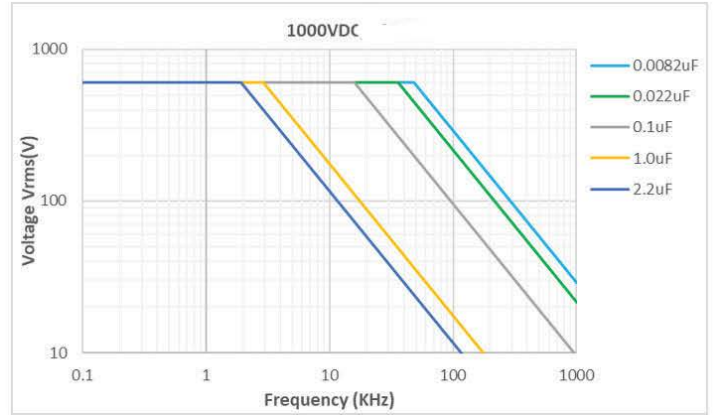
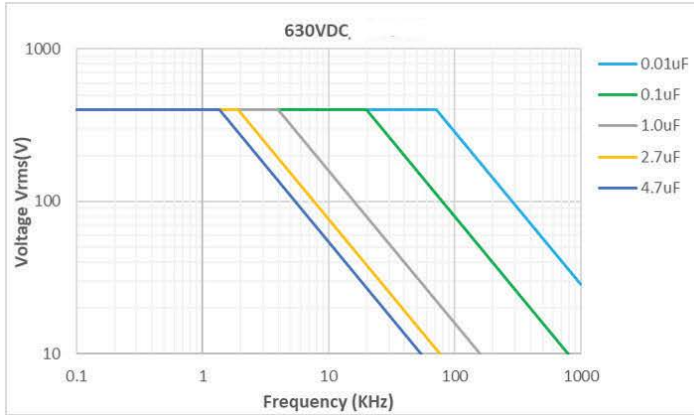


#### Impedance vs frequency

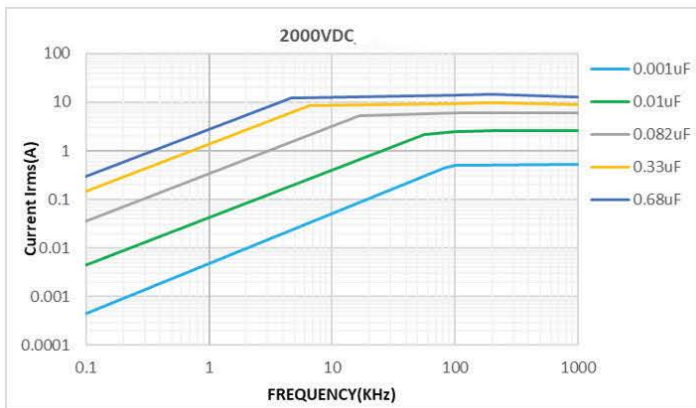
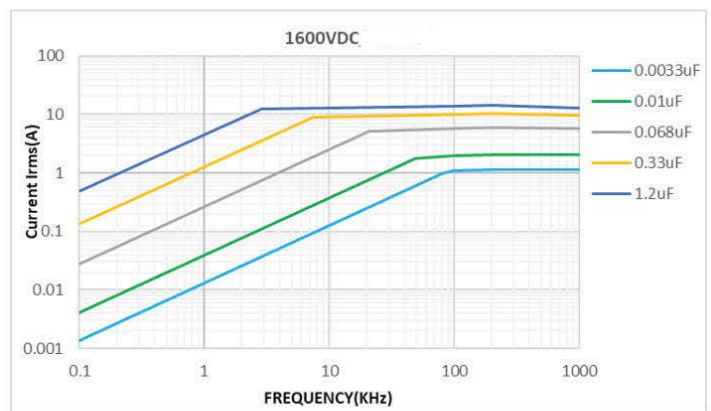
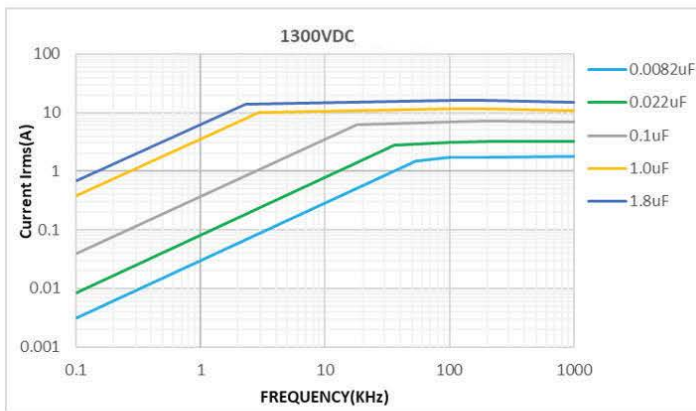
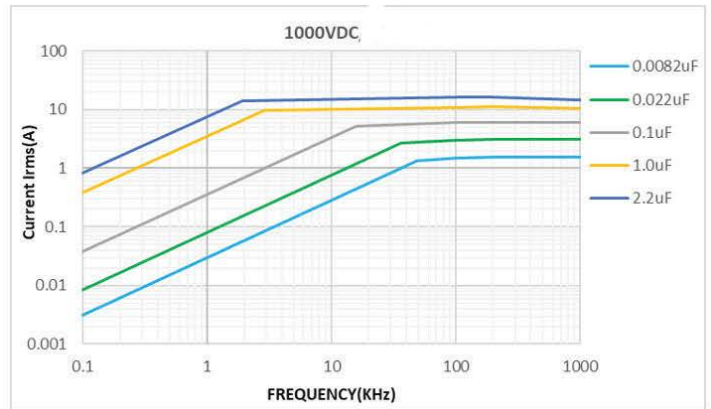
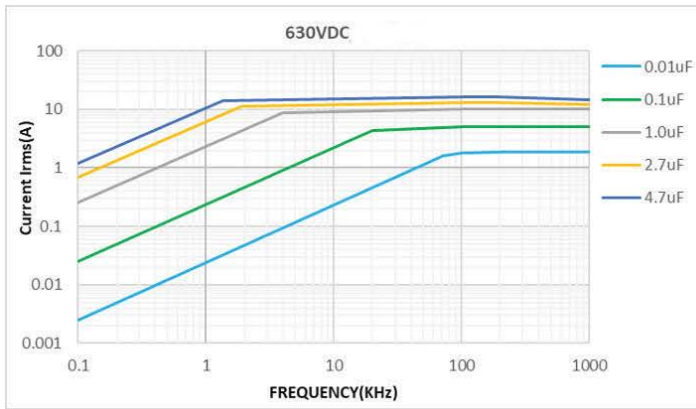




**Maximum voltage (Vrms) vs frequency**  
 (Sinusoidal waveform, at +85 °C)



**Maximum current (I<sub>rms</sub>) vs frequency**  
(Sinusoidal waveform, at +85 °C)



**Validation test**

| Test Item                 | Test condition   | Performance   |
|---------------------------|--|---|
| High temperature exposure | Reference: MIL-STD-202 method 108<br>+105 +/- 2 °C 1000 hours  | Capacitance change rate ( $\Delta C/C$ ): $\leq \pm 3\%$<br>DF change ( $\Delta tg\delta$ ): $\leq 50 \times 10^{-4}$ at 1 kHz<br>Insulation resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000$ Vac/60 s  |
| Temperature cycling       | Reference: JESD22 Method JA-104<br>High temperature: +105 +/- 5 °C<br>Low temperature: -55 +/- 5 °C<br>1000 cycles, 30 minutes for each temperature  | Capacitance Change Rate ( $\Delta C/C$ ): $\leq \pm 5\%$<br>DF change ( $\Delta tg\delta$ ): $\leq 50 \times 10^{-4}$ at 1 kHz<br>Insulation Resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000$ Vac/60 s  |
| Moisture resistance       | Reference: MIL-STD-202 Method 106<br>(+25 °C to 65 °C for 2.5 hours), (+65 °C for 3 hours),<br>(+65 °C to +25 °C for 2.5 hours),<br>(+25 °C to +65 °C for 2.5 hours),<br>(+65 °C for 3 hours), (+65 °C to +25 °C for 2.5 hours),<br>(+25 °C for 8 hours)<br>Keep humidity 90% ~ 100% for 10 cycles | Capacitance Change Rate ( $\Delta C/C$ ): $\leq \pm 5\%$<br>DF change ( $\Delta tg\delta$ ): $\leq 50 \times 10^{-4}$ at 1 kHz<br>Insulation Resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000$ Vac/60 s  |
| Biased humidity 1         | Reference: MIL-STD-202 Method 103<br>+60 °C @ 95% R.H<br>Rated voltage, 1000 hours   | Capacitance Change Rate ( $\Delta C/C$ ): $\leq \pm 5\%$<br>DF change ( $\Delta tg\delta$ ): $\leq 80 \times 10^{-4}$ at 1 kHz<br>Insulation Resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000$ Vac/60 s  |
| Biased humidity 2         | Reference: MIL-STD-202 Method 103<br>+85 °C @ 85% R.H<br>Rated voltage, 1000 hours   | Capacitance Change Rate ( $\Delta C/C$ ): $\leq \pm 10\%$<br>DF change ( $\Delta tg\delta$ ): $\leq 80 \times 10^{-4}$ at 1 kHz<br>Insulation Resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000$ Vac/60 s |
| Operational life 1        | Testing method per IEC 61071<br>Test Temperature: +85 +/- 2 °C.<br>Apply 130% rated voltage for 1,000 +24/-0 hours<br>At 500 hours, 1000 charges and discharges<br>At 1.4 x I peak (maximum respective peak current in continuous operation)   | Capacitance Change Rate ( $\Delta C/C$ ): $\leq \pm 5\%$<br>DF change ( $\Delta tg\delta$ ): $\leq 50 \times 10^{-4}$ at 1 kHz<br>Insulation Resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000$ Vac/60 s  |
| Operational life 2        | Testing method per IEC 61071<br>Test Temperature: +105 +/- 2 °C.<br>Apply 130% of (75% rated voltage) for 1,000 +24/-0 hours.<br>At 500 hours, 1000 charges and discharges<br>At 1.4 x I peak (maximum respective peak current in continuous operation)  | Capacitance Change Rate ( $\Delta C/C$ ): $\leq \pm 5\%$<br>DF change ( $\Delta tg\delta$ ): $\leq 50 \times 10^{-4}$ at 1 kHz<br>Insulation Resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000$ Vac/60 s  |
| Terminal strength (lead)  | Tension:<br>0.50 < D $\leq$ 0.80, 10 N, 0.80 < D $\leq$ 1.25, 20 N<br>Bending force:<br>0.50 < D $\leq$ 0.80, 5 N, 0.80 < D $\leq$ 1.25, 10 N<br>Make two successive bends in each direction   | No broken and no abnormal<br>Insulation Resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000$ Vac/60 s   |

## Validation test

| Test Item                    | Test condition   | Performance   |
|------------------------------|--|---|
| Resistance to solvents       | Reference: MIL-STD-202 Method 215<br>Solvent: propanol<br>Immersion time: 3 min<br>Drying time: 5 min<br>Mechanical treatment: 10 rubbing (toothbrush)<br>3 Cycles | Capacitance change rate ( $\Delta C/C$ ): $\leq \pm 1\%$<br>DF change ( $\Delta tg \delta$ ): $\leq 50 \times 10^{-4}$ at 1 kHz<br>Insulation resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000 \text{ VAC} / 60$ s   |
| Mechanical shock             | Reference: MIL-STD-202 Method 213<br>Pulse-shape: half-sine wave<br>Acceleration: 100 g<br>Duration of pulse: 6 ms, 18 times                                       | Capacitance Change Rate ( $\Delta C/C$ ): $\leq \pm 1\%$<br>DF change ( $\Delta tg \delta$ ): $\leq 50 \times 10^{-4}$ at 1 kHz<br>Insulation Resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000 \text{ Vac} / 60$ s   |
| Vibration                    | Reference: MIL-STD-202 Method 204<br>Frequency Change: 10-2000 Hz.<br>5 g force 20 minutes<br>Direction: X, Y, Z<br>12 cycles in each direction                    | Capacitance Change Rate ( $\Delta C/C$ ): $\leq \pm 1\%$<br>DF change ( $\Delta tg \delta$ ): $\leq 50 \times 10^{-4}$ at 1 kHz<br>Insulation Resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000 \text{ Vac} / 60$ s   |
| Resistance to soldering heat | Reference: MIL-STD-202 Method 210<br>$+260 \pm 5^\circ \text{C}$ 10s   | Capacitance Change Rate ( $\Delta C/C$ ): $\leq \pm 0.5\%$<br>DF change ( $\Delta tg \delta$ ): $\leq 50 \times 10^{-4}$ at 1 kHz<br>Insulation Resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000 \text{ Vac} / 60$ s |
| Solderability                | Reference: J-STD-002<br>Soldering temperature: $+245 \pm 5^\circ \text{C}$ 2 s   | More than 95% of circumferential surface of lead wire shall be covered with new solder  |
| Electrical characterization  | Parametrically test per lot at room temp, $-55^\circ \text{C}$ , $+105^\circ \text{C}$   | electrical performance within spec<br>no physical damage  |
| Passive flammability class B | Test duration for actual volume V<br>$V \leq 250$ for 10s<br>$250 < V \leq 500$ for 20s<br>$500 < V \leq 1750$ for 30s<br>$V > 1750$ for 60s                       | After removing test flame from capacitor, the capacitor must not continue to burn for more than 10 seconds.<br>No burning particle must drop from the sample.   |
| Humidity resistance          | Reference: MIL-STD-202 Method 106<br>$40 \pm 2^\circ \text{C}$ 90% to 95% R.H<br>56 days   | Capacitance Change Rate ( $\Delta C/C$ ): $\leq \pm 5\%$<br>DF change ( $\Delta tg \delta$ ): $\leq 50 \times 10^{-4}$ at 1 kHz<br>Insulation Resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000 \text{ Vac} / 60$ s   |

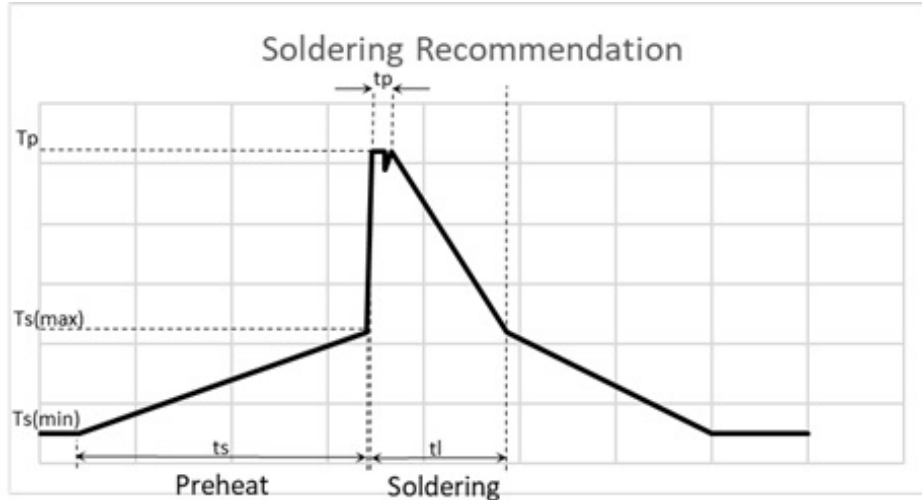
## Electrical test

| Test                 | Test condition  | Performance   |
|----------------------|---|---|
| Self-healing test    | Apply 150% of rated voltage<br>Duration: 10 seconds<br>Number of clearings $\leq 5$<br>Clearing = voltage drop of 5 %<br>increase the voltage at 100 V/s till 5 clearings occur with a maximum of $2.5 \times U_R$ for a duration of 10 seconds | Capacitance change rate ( $\Delta C/C$ ): $\leq \pm 0.5\%$<br>DF change ( $\Delta tg \delta$ ): $\leq 50 \times 10^{-4}$ at 1 kHz<br>Insulation resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000 \text{ Vac} / 60$ s |
| Surge discharge test | Five charges and discharges in ten minutes.<br>Test voltage: $1.1 U_R$ Test current: 1.1 times the maximum impulse current<br>The interelectrode withstand voltage was tested within five minutes after the test.                               | Capacitance change rate ( $\Delta C/C$ ): $\leq \pm 1.0\%$<br>DF change ( $\Delta tg \delta$ ): $\leq 50 \times 10^{-4}$ at 1 kHz<br>Insulation resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000 \text{ Vac} / 60$ s |
| Thermal stability    | Temperature: ambient temperature<br>Test current: $1.1 I_{rms}$ Test frequency: 10 kHz<br>Test time: 48 h During, the last 6h, the temperature of the case near of the top rise shall be measured per 1.5 h.                                    | Capacitance change rate ( $\Delta C/C$ ): $\leq \pm 2.0\%$<br>DF change ( $\Delta tg \delta$ ): $\leq 50 \times 10^{-4}$ at 1 kHz<br>Insulation resistance: $\geq 50\%$ of initial limit<br>(T-T) test voltage: $1.5 \times U_R / 10$ s<br>(T-C) test voltage: $2 U_R / \sqrt{2} + 1000 \text{ Vac} / 60$ s |

**Packaging information**

| Pitch<br>mm | Size<br>Code | Dimension-mm |      |      | Package quantity |               |
|-------------|--------------|--------------|------|------|------------------|---------------|
|             |              | W            | H    | T    | Bulk pack/box    | Ammo pack/box |
| 15          | B01          | 18           | 11   | 5    | 1,054            | 680           |
|             | B02          | 18           | 12   | 6    | 867              | 560           |
|             | B05          | 18           | 13   | 7    | 748              | 480           |
|             | B07          | 18           | 13.5 | 7.5  | 697              | 450           |
|             | B09          | 18           | 14.5 | 8.5  | 612              | 390           |
|             | B11          | 18           | 16   | 10   | 527              | 340           |
|             | B16          | 18           | 19   | 11   | 476              | 300           |
| 22.5        | C01          | 26           | 15.5 | 6    | 612              | 350           |
|             | C02          | 26           | 16.5 | 7    | 528              | 300           |
|             | C03          | 26           | 17   | 8.5  | 432              | 250           |
|             | C04          | 26           | 19   | 10   | 372              | 210           |
|             | C05          | 26           | 20   | 11   | 336              | 190           |
|             | C06          | 26           | 22   | 12   | 300              | 170           |
|             | C08          | 26           | 24.5 | 13   | 276              | 160           |
| 27.5        | C10          | 26           | 29.5 | 14.5 | 252              | 140           |
|             | D01          | 32           | 17   | 8    | 380              | NA            |
|             | D02          | 32           | 18   | 9    | 340              | NA            |
|             | D03          | 32           | 20   | 11   | 280              | NA            |
|             | D04          | 32           | 22   | 13   | 230              | NA            |
|             | D05          | 32           | 24   | 14   | 220              | NA            |
|             | D06          | 32           | 24.5 | 13   | 230              | NA            |
| 37.5        | D08          | 32           | 28   | 14   | 220              | NA            |
|             | D10          | 32           | 30   | 16   | 190              | NA            |
|             | D12          | 32           | 33   | 18   | 170              | NA            |
|             | D13          | 32           | 37   | 22   | 140              | NA            |
|             | E01          | 42           | 22   | 11   | 196              | NA            |
|             | E02          | 42           | 24   | 13   | 161              | NA            |
|             | E04          | 42           | 28   | 17   | 126              | NA            |
| 37.5        | E05          | 42           | 28.5 | 16   | 133              | NA            |
|             | E10          | 42           | 32   | 19   | 112              | NA            |
|             | E13          | 42           | 40   | 20   | 105              | NA            |
|             | E14          | 42           | 43   | 28   | 77               | NA            |
|             | E15          | 42           | 44   | 24   | 91               | NA            |
|             | E16          | 42           | 45   | 30   | 70               | NA            |
|             | E17          | 42           | 50   | 35   | 63               | NA            |

**Wave solder profile**



**Profile feature**

|         |                 |               |
|---------|-----------------|---------------|
| Preheat | • $T_s$ maximum | 110 °C        |
|         | • $T_s$ minimum | NA            |
|         | • $t_s$         | < 150 seconds |
| Preheat | • $T_p$         | 260 °C ±5 °C  |
|         | • $t_p$         | < 10 seconds  |
|         | • $t_l$         | ≤60 seconds   |

Capacitor body maximum temperature at wave soldering ≤120 °C

**Manual solder**

+400 °C, 3 seconds maximum by soldering iron, generally manual, hand soldering is not recommended

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