

### Metallized Polypropylene Film Capacitors

#### Type: **EZPE Series**

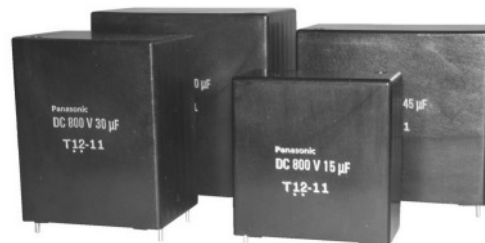
##### ■ Features

- High safety, Self-healing and Self-protecting function built-in
- Long product life, High reliability
- Low loss, Low ESR
- Flame retardant (Case and sealing resin)
- RoHS directive compliant

##### ■ Recommended Applications

For DC filtering, DC link circuit

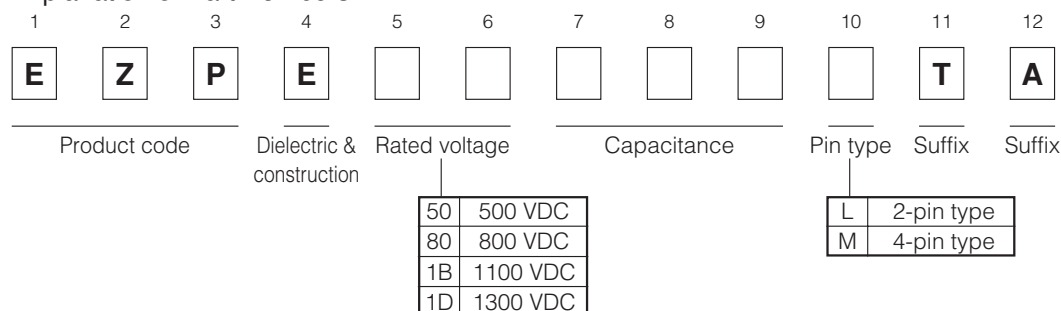
- Solar inverters
- Wind power generation
- Industrial power supplies
- Inverter circuit in appliances (Air Conditioners etc.)



##### ■ Construction

- Dielectric : Polypropylene film
- Electrodes : Metallized dielectric with segmented pattern
- Plastic case : UL94 V-0
- Sealing : UL94 V-0
- Terminals : Tinned wires, 2-pin and 4-pin versions

##### ■ Explanation of Part Numbers



##### ■ Specifications

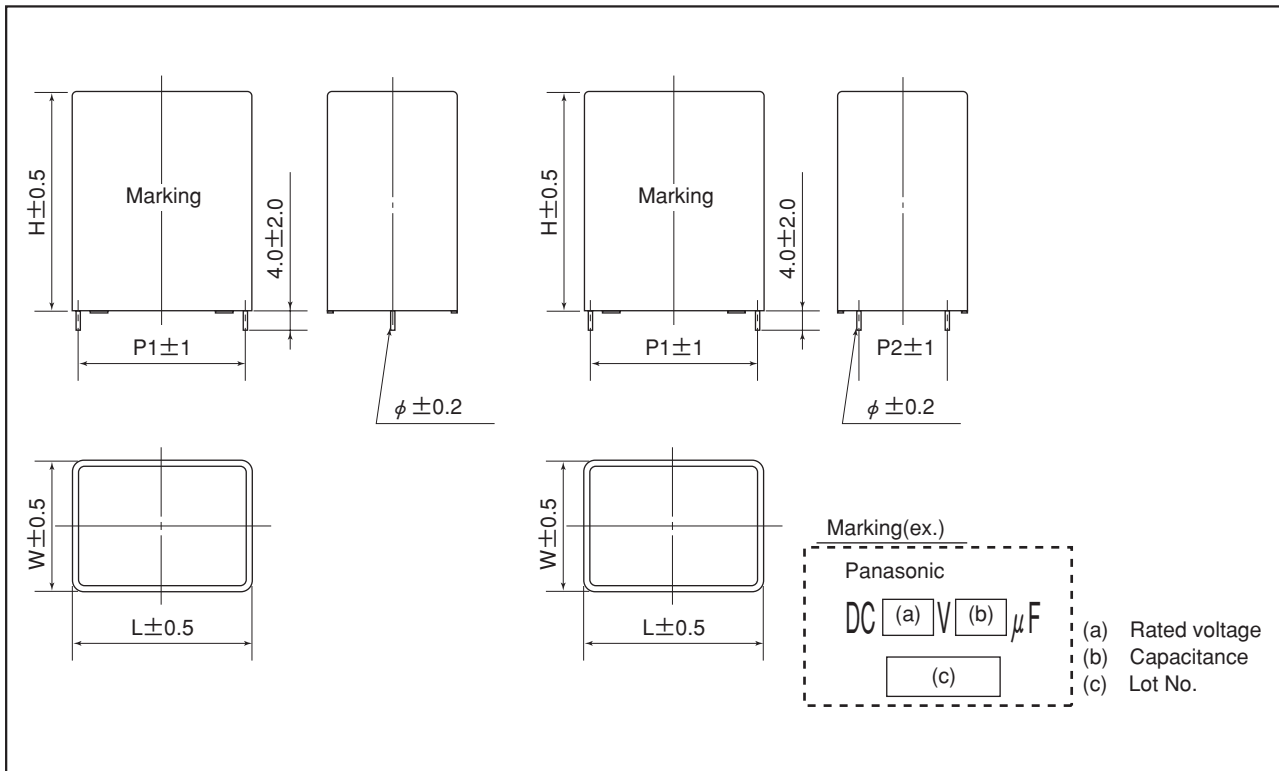
|   |   |                 |
|---|---|-----------------|
| Category temperature range (T <sub>c</sub> ) (*1) | -40 °C to +85 °C  |                 |
| Rated voltage (V <sub>R</sub> ) (*2)              | 500 VDC, 800 VDC, 1100 VDC, 1300 VDC<br>(Derating of rated voltage by more than 70 °C (*3)) |                 |
| Rated capacitance (C <sub>R</sub> )               | 500 VDC   | 10 µF to 110 µF |
|   | 800 VDC   | 10 µF to 60 µF  |
|   | 1100 VDC  | 10 µF to 40 µF  |
|   | 1300 VDC  | 10 µF to 25 µF  |
| Capacitance tolerance                             | ±10 %   |                 |
| Withstanding DC voltage                           | Between terminals: Rated voltage. (VDC) × 150 % 10 s<br>Terminal to case: 2110 VAC 10 s     |                 |
| Insulation resistance (C <sub>R</sub> )           | C <sub>R</sub> ≥ 10000 Ω · F (20 °C, 500 VDC, 60 s)   |                 |

\*1: The temperature of capacitor surface (case)

\*2: Use for DC voltage only

\*3: Refer to the page of " DC voltage derating "

■ Dimensions in mm (not to scale)



■ Rating, Dimensions & Quantity / Ammo Box

● Type EZPE Rated voltage : 500 VDC at 70 °C ( 450VDC at 85 °C )

| Part No.     | CR.<br>( $\mu$ F) | Dimensions (mm) |    |      |      |      |        | dv/dt<br>[V/ $\mu$ s] | Permissible current                            |   | ESR <sub>typ</sub><br>[m $\Omega$ ]<br>(*3) | tan $\delta$<br>[%]<br>(*4) | Mass<br>[g] | MOQ<br>[pcs]<br>(*5) |
|--------------|-------------------|-----------------|----|------|------|------|--------|-----------------------|--|---|---|-----------------------------|-------------|----------------------|
|              |                   | W               | H  | L    | P1   | P2   | $\phi$ |                       | Peak<br>Current<br>[A <sub>o-p</sub> ]<br>(*1) | RMS<br>Current<br>[A <sub>rms</sub> ]<br>(*2) |   |                             |             |                      |
| EZPE50106LTA | 10                | 20              | 42 | 41.5 | 37.5 | -    | 1.2    | 21                    | 210  | 5.0   | 22.0  | 0.28                        | 45          | 600                  |
| EZPE50156LTA | 15                | 20              | 42 | 41.5 | 37.5 | -    | 1.2    | 21                    | 315  | 7.5   | 14.8  | 0.28                        | 45          |                      |
| EZPE50206LTA | 20                | 20              | 42 | 41.5 | 37.5 | -    | 1.2    | 21                    | 420  | 9.5   | 11.0  | 0.28                        | 44          |                      |
| EZPE50256LTA | 25                | 20              | 42 | 41.5 | 37.5 | -    | 1.2    | 21                    | 525  | 11.0  | 8.8   | 0.28                        | 43          |                      |
| EZPE50306MTA | 30                | 20              | 42 | 41.5 | 37.5 | 10.2 | 1.2    | 21                    | 630  | 12.5  | 7.0   | 0.28                        | 43          |                      |
| EZPE50356MTA | 35                | 30              | 51 | 41.5 | 37.5 | 10.2 | 1.2    | 21                    | 735  | 13.5  | 6.2   | 0.28                        | 83          | 400                  |
| EZPE50406MTA | 40                | 30              | 51 | 41.5 | 37.5 | 10.2 | 1.2    | 21                    | 840  | 14.5  | 5.4   | 0.28                        | 82          |                      |
| EZPE50456MTA | 45                | 30              | 51 | 41.5 | 37.5 | 10.2 | 1.2    | 21                    | 945  | 15.2  | 4.9   | 0.28                        | 81          |                      |
| EZPE50506MTA | 50                | 30              | 51 | 41.5 | 37.5 | 20.3 | 1.2    | 21                    | 1050   | 16.0  | 4.4   | 0.28                        | 80          |                      |
| EZPE50556MTA | 55                | 30              | 51 | 41.5 | 37.5 | 20.3 | 1.2    | 21                    | 1155   | 16.3  | 4.1   | 0.28                        | 79          |                      |
| EZPE50606MTA | 60                | 30              | 51 | 41.5 | 37.5 | 20.3 | 1.2    | 21                    | 1260   | 16.5  | 3.9   | 0.28                        | 77          | 200                  |
| EZPE50656MTA | 65                | 30              | 51 | 57.5 | 52.5 | 10.2 | 1.2    | 14                    | 910  | 15.0  | 6.8   | 0.44                        | 111         |                      |
| EZPE50706MTA | 70                | 30              | 51 | 57.5 | 52.5 | 10.2 | 1.2    | 14                    | 980  | 15.5  | 6.5   | 0.44                        | 109         |                      |
| EZPE50756MTA | 75                | 30              | 51 | 57.5 | 52.5 | 20.3 | 1.2    | 14                    | 1050   | 16.0  | 6.0   | 0.44                        | 108         |                      |
| EZPE50806MTA | 80                | 30              | 51 | 57.5 | 52.5 | 20.3 | 1.2    | 14                    | 1120   | 16.5  | 5.7   | 0.44                        | 106         |                      |
| EZPE50856MTA | 85                | 35              | 56 | 57.5 | 52.5 | 20.3 | 1.2    | 14                    | 1190   | 16.7  | 5.4   | 0.44                        | 142         | 200                  |
| EZPE50906MTA | 90                | 35              | 56 | 57.5 | 52.5 | 20.3 | 1.2    | 14                    | 1260   | 17.0  | 5.1   | 0.44                        | 141         |                      |
| EZPE50956MTA | 95                | 35              | 56 | 57.5 | 52.5 | 20.3 | 1.2    | 14                    | 1330   | 17.5  | 4.9   | 0.44                        | 140         |                      |
| EZPE50107MTA | 100               | 35              | 56 | 57.5 | 52.5 | 20.3 | 1.2    | 14                    | 1400   | 18.0  | 4.7   | 0.44                        | 139         |                      |
| EZPE50117MTA | 110               | 35              | 56 | 57.5 | 52.5 | 20.3 | 1.2    | 14                    | 1540   | 18.5  | 4.4   | 0.44                        | 138         |                      |

\*1:When rising temperature of capacitor surface by continuous peak current (included pulse current), use within limit specified for temperature of capacitor surface and self heating temperature rise.

\*2:Maximum RMS current @ 70 °C, 10 kHz

Use within limit for self heating temperature rise at capacitor surface.

\*3:Typical values @ 20°C, 10 kHz ESR : less than 2.5 × ESR<sub>typ</sub>

\*4:Maximum dissipation factor @20°C, 1 kHz

\*5:Minimum order quantity consists of 4 packing units.

### ■ Rating, Dimensions & Quantity / Ammo Box

#### ● Type EZPE Rated voltage : 800 VDC at 70 °C ( 700VDC at 85 °C )

| Part No.     | CR.<br>( $\mu\text{F}$ ) | Dimensions (mm) |    |      |      |      |        | dv/dt<br>[V/ $\mu\text{s}$ ] | Permissible current                         |  | ESR <sub>typ</sub><br>[m $\Omega$ ]<br>(*3) | tan $\delta$<br>[%]<br>(*4) | Mass<br>[g] | MOQ<br>[pcs]<br>(*5) |
|--------------|--------------------------|-----------------|----|------|------|------|--------|------------------------------|---|--|---|-----------------------------|-------------|----------------------|
|              |                          | W               | H  | L    | P1   | P2   | $\phi$ |                              | Peak Current<br>[A <sub>p-p</sub> ]<br>(*1) | RMS Current<br>[A <sub>rms</sub> ]<br>(*2) |   |                             |             |                      |
| EZPE80106LTA | 10                       | 20              | 42 | 41.5 | 37.5 | -    | 1.2    | 22                           | 220   | 7.0  | 15.8  | 0.22                        | 44          | 600                  |
| EZPE80156MTA | 15                       | 20              | 42 | 41.5 | 37.5 | 10.2 | 1.2    | 22                           | 330   | 9.0  | 10.5  | 0.22                        | 43          |                      |
| EZPE80206MTA | 20                       | 30              | 51 | 41.5 | 37.5 | 10.2 | 1.2    | 22                           | 440   | 11.0                                       | 7.7   | 0.22                        | 82          | 400                  |
| EZPE80256MTA | 25                       | 30              | 51 | 41.5 | 37.5 | 10.2 | 1.2    | 22                           | 550   | 13.0                                       | 6.4   | 0.22                        | 80          |                      |
| EZPE80306MTA | 30                       | 30              | 51 | 41.5 | 37.5 | 20.3 | 1.2    | 22                           | 660   | 15.0                                       | 5.3   | 0.22                        | 78          | 200                  |
| EZPE80356MTA | 35                       | 30              | 51 | 57.5 | 52.5 | 10.2 | 1.2    | 15                           | 525   | 12.0                                       | 9.7   | 0.33                        | 110         |                      |
| EZPE80406MTA | 40                       | 30              | 51 | 57.5 | 52.5 | 20.3 | 1.2    | 15                           | 600   | 13.0                                       | 8.3   | 0.33                        | 107         |                      |
| EZPE80456MTA | 45                       | 30              | 51 | 57.5 | 52.5 | 20.3 | 1.2    | 15                           | 675   | 14.0                                       | 7.0   | 0.33                        | 104         |                      |
| EZPE80506MTA | 50                       | 35              | 56 | 57.5 | 52.5 | 20.3 | 1.2    | 15                           | 750   | 15.0                                       | 6.3   | 0.33                        | 140         |                      |
| EZPE80556MTA | 55                       | 35              | 56 | 57.5 | 52.5 | 20.3 | 1.2    | 15                           | 825   | 16.0                                       | 5.9   | 0.33                        | 138         |                      |
| EZPE80606MTA | 60                       | 35              | 56 | 57.5 | 52.5 | 20.3 | 1.2    | 15                           | 900   | 17.0                                       | 5.6   | 0.33                        | 136         |                      |

#### ● Type EZPE Rated voltage : 1100 VDC at 70 °C ( 920VDC at 85 °C )

| Part No.     | CR.<br>( $\mu\text{F}$ ) | Dimensions (mm) |    |      |      |      |        | dv/dt<br>[V/ $\mu\text{s}$ ] | Permissible current                         |  | ESR <sub>typ</sub><br>[m $\Omega$ ]<br>(*3) | tan $\delta$<br>[%]<br>(*4) | Mass<br>[g] | MOQ<br>[pcs]<br>(*5) |
|--------------|--------------------------|-----------------|----|------|------|------|--------|------------------------------|---|--|---|-----------------------------|-------------|----------------------|
|              |                          | W               | H  | L    | P1   | P2   | $\phi$ |                              | Peak Current<br>[A <sub>p-p</sub> ]<br>(*1) | RMS Current<br>[A <sub>rms</sub> ]<br>(*2) |   |                             |             |                      |
| EZPE1B106MTA | 10                       | 20              | 42 | 41.5 | 37.5 | 10.2 | 1.2    | 54                           | 540   | 7.0  | 12.3  | 0.20                        | 43          | 600                  |
| EZPE1B156MTA | 15                       | 30              | 51 | 41.5 | 37.5 | 10.2 | 1.2    | 54                           | 810   | 8.5  | 8.2   | 0.20                        | 80          | 400                  |
| EZPE1B206MTA | 20                       | 30              | 51 | 41.5 | 37.5 | 20.3 | 1.2    | 54                           | 1080  | 10.0                                       | 6.3   | 0.20                        | 76          |                      |
| EZPE1B256MTA | 25                       | 30              | 51 | 57.5 | 52.5 | 10.2 | 1.2    | 35                           | 875   | 8.0  | 10.7  | 0.28                        | 107         | 200                  |
| EZPE1B306MTA | 30                       | 30              | 51 | 57.5 | 52.5 | 20.3 | 1.2    | 35                           | 1050  | 9.0  | 8.5   | 0.28                        | 103         |                      |
| EZPE1B356MTA | 35                       | 35              | 56 | 57.5 | 52.5 | 20.3 | 1.2    | 35                           | 1225  | 10.0                                       | 7.2   | 0.28                        | 137         |                      |
| EZPE1B406MTA | 40                       | 35              | 56 | 57.5 | 52.5 | 20.3 | 1.2    | 35                           | 1400  | 11.0                                       | 6.5   | 0.28                        | 134         |                      |

#### ● Type EZPE Rated voltage : 1300 VDC at 70 °C ( 1100VDC at 85 °C )

| Part No.     | CR.<br>( $\mu\text{F}$ ) | Dimensions (mm) |    |      |      |      |        | dv/dt<br>[V/ $\mu\text{s}$ ] | Permissible current                         |  | ESR <sub>typ</sub><br>[m $\Omega$ ]<br>(*3) | tan $\delta$<br>[%]<br>(*4) | Mass<br>[g] | MOQ<br>[pcs]<br>(*5) |
|--------------|--------------------------|-----------------|----|------|------|------|--------|------------------------------|---|--|---|-----------------------------|-------------|----------------------|
|              |                          | W               | H  | L    | P1   | P2   | $\phi$ |                              | Peak Current<br>[A <sub>p-p</sub> ]<br>(*1) | RMS Current<br>[A <sub>rms</sub> ]<br>(*2) |   |                             |             |                      |
| EZPE1D106MTA | 10                       | 30              | 51 | 41.5 | 37.5 | 10.2 | 1.2    | 73                           | 730   | 12.0                                       | 10.0  | 0.17                        | 80          | 400                  |
| EZPE1D156MTA | 15                       | 30              | 51 | 57.5 | 52.5 | 10.2 | 1.2    | 50                           | 750   | 10.0                                       | 14.5  | 0.22                        | 109         | 200                  |
| EZPE1D206MTA | 20                       | 30              | 51 | 57.5 | 52.5 | 20.3 | 1.2    | 50                           | 1000  | 14.0                                       | 11.1  | 0.22                        | 103         |                      |
| EZPE1D256MTA | 25                       | 35              | 56 | 57.5 | 52.5 | 20.3 | 1.2    | 50                           | 1250  | 17.0                                       | 8.5   | 0.22                        | 136         |                      |

\*1:When rising temperature of capacitor surface by continuous peak current (included pulse current),

use within limit specified for temperature of capacitor surface and self heating temperature rise.

\*2:Maximum RMS current @ 70 °C, 10 kHz

Use within limit for self heating temperature rise at capacitor surface.

\*3:Typical values @ 20°C, 10 kHz ESR : less than 2.5 × ESR<sub>typ</sub>

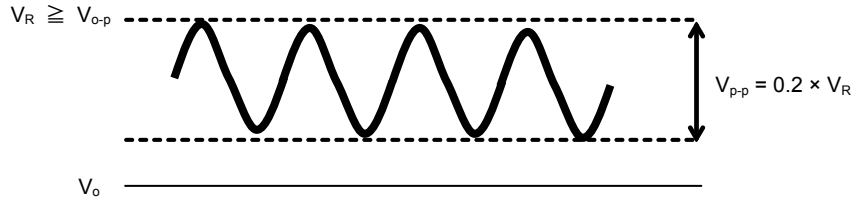
\*4:Maximum dissipation factor @20°C, 1 kHz

\*5:Minimum order quantity consists of 4 packing units.

## ■ Permissible Conditions

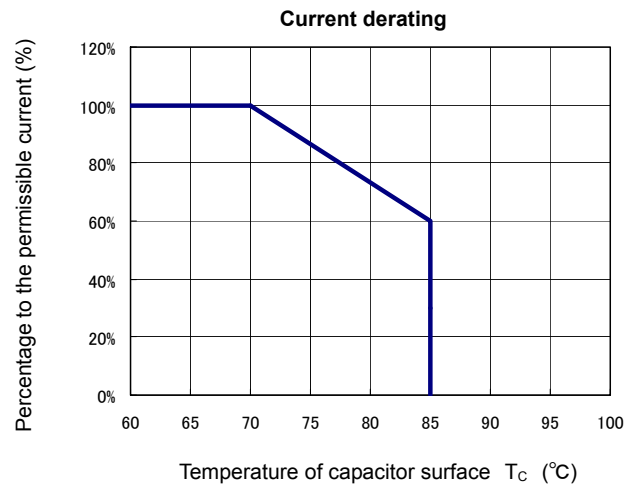
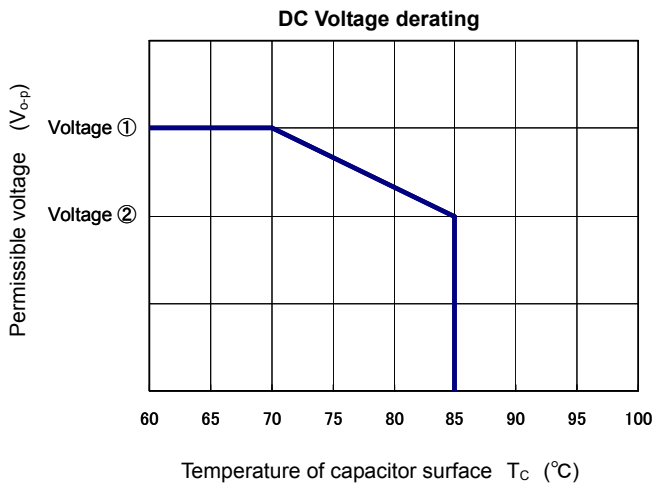
### ● Permissible Voltage

- These capacitors are designed only for DC voltage, so should not be used for AC line.
- Use the peak voltage ( $V_{o-p}$ ) within the rated voltage.
- Use the peak to peak voltage ( $V_{p-p}$ ) within  $0.2 \times V_R$ .



### ● DC Voltage, Peak current and RMS current derating

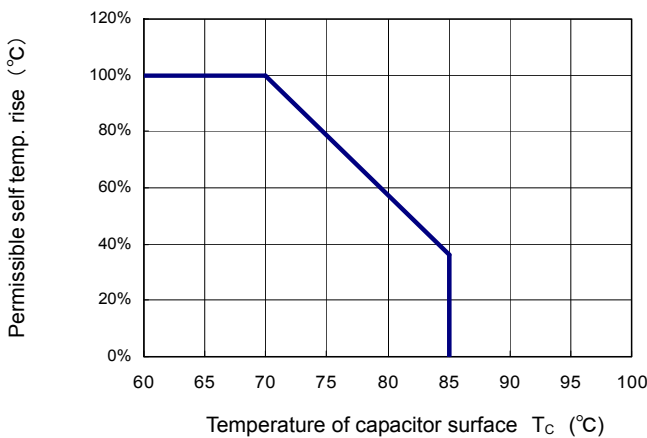
Derating of voltage ( $V_{o-p}$ ), RMS current ( $A_{rms}$ ), and peak current ( $A_{o-p}$ ) according to the following diagram when the temperature of the capacitor surface exceeds 70 °C.



| Part Number    | Voltage ① | Voltage ② |
|----------------|-----------|-----------|
| EZPE50 □□□□ TA | DC500V    | DC450V    |
| EZPE80 □□□□ TA | DC800V    | DC700V    |
| EZPE1B □□□□ TA | DC1100V   | DC920V    |
| EZPE1D □□□□ TA | DC1300V   | DC1100V   |

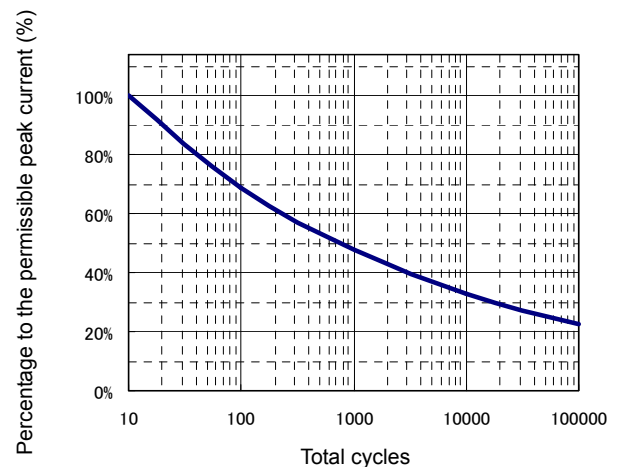
### ● Permissible self heating temperature rise

Permissible self heating temperature rise is within following diagram when the temperature of the capacitor surface exceeds 70 °C.



### ● Total cycles applied peak current

Total cycles applied peak current ( $A_{o-p}$ ) (including pulse current) are within following diagram.



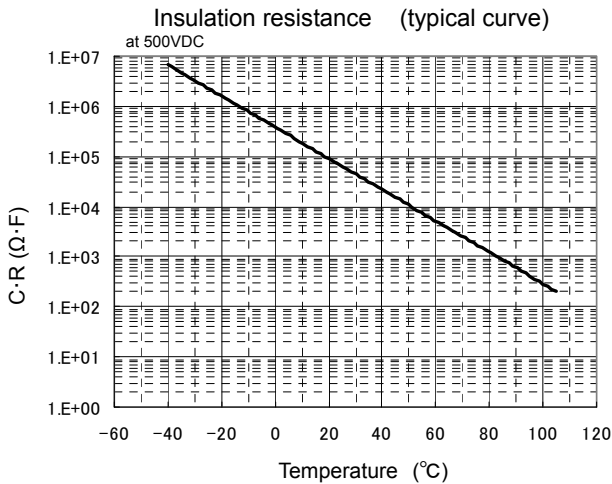
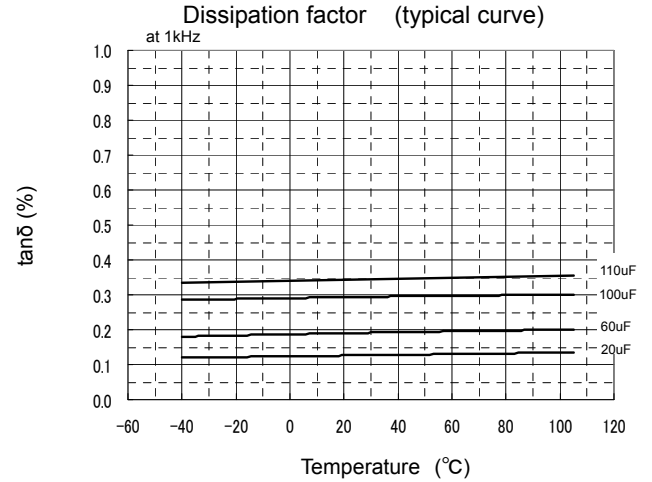
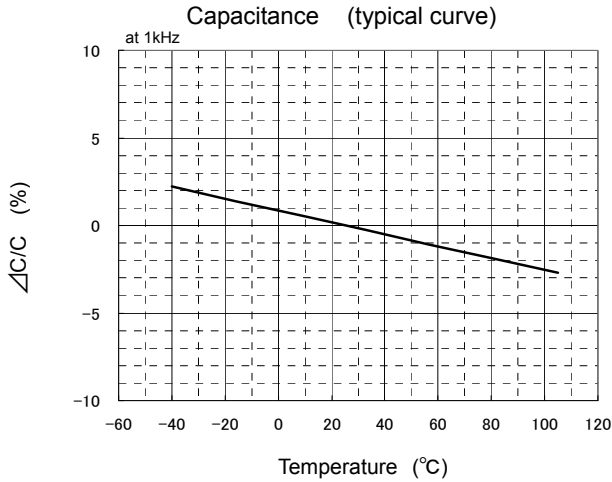
| Part Number    | 100% at 70°C | 36% at 85°C |
|----------------|--------------|-------------|
| EZPE50 □□□□ TA | 12 °C        | 4.3 °C      |
| EZPE80 □□□□ TA | 10 °C        | 3.6 °C      |
| EZPE1B □□□□ TA | 5 °C         | 1.8 °C      |
| EZPE1D □□□□ TA | 9 °C         | 3.2 °C      |

Please consult Panasonic if your condition exceeds the above spec.

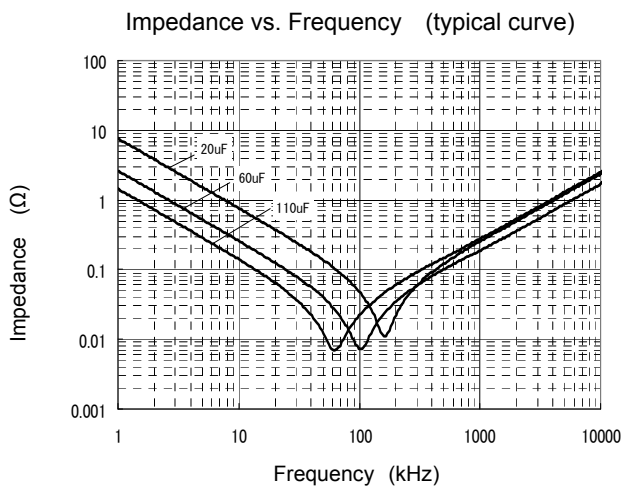
## ■ Characteristics <Reference>

● Type EZPE Rated voltage : 500 VDC at 70 °C ( 450VDC at 85 °C )

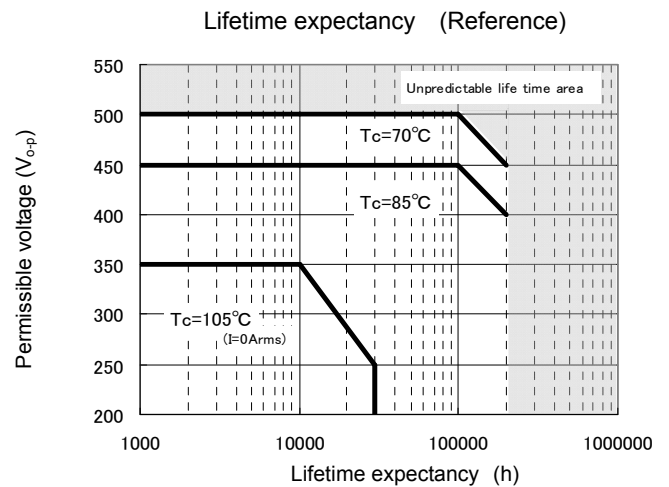
## ● Temperature Characteristics



## ● Frequency Characteristics



## ● Lifetime expectancy

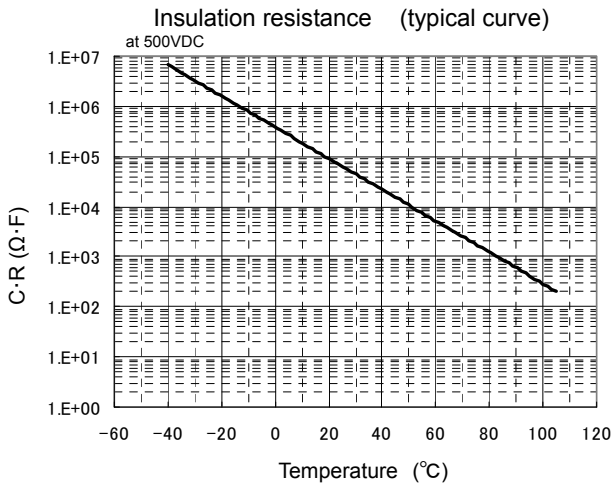
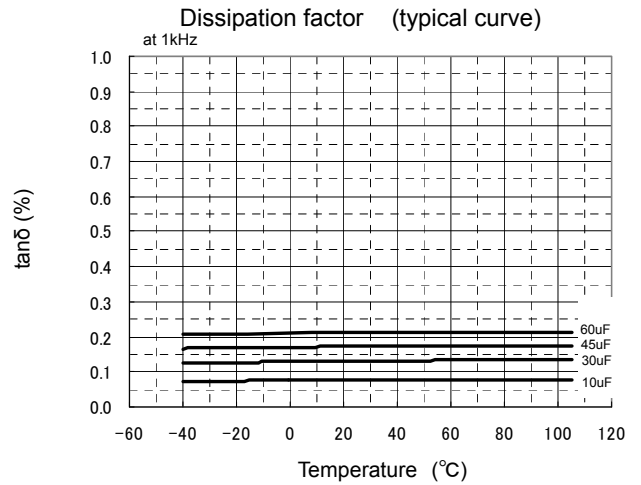
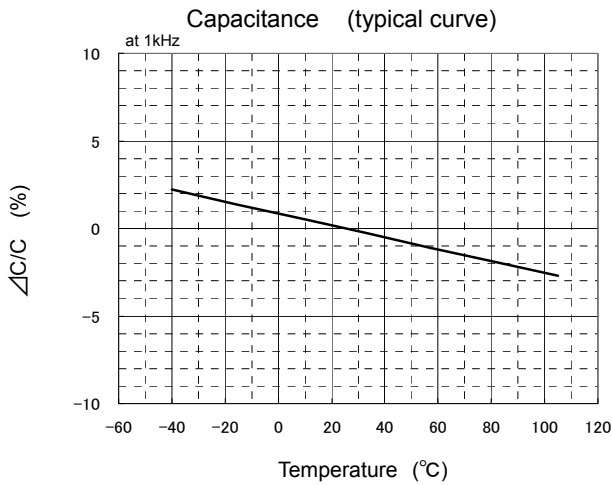


\* Life time : Reach ΔC/C = - 10 % , Judgement of Panasonic  
\* 105°C : Not guarantee voltage

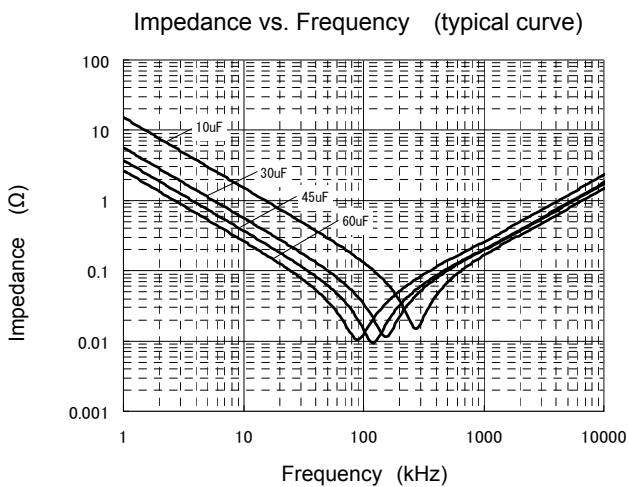
## ■ Characteristics <Reference>

● Type EZPE Rated voltage : 800 VDC at 70 °C ( 700VDC at 85 °C )

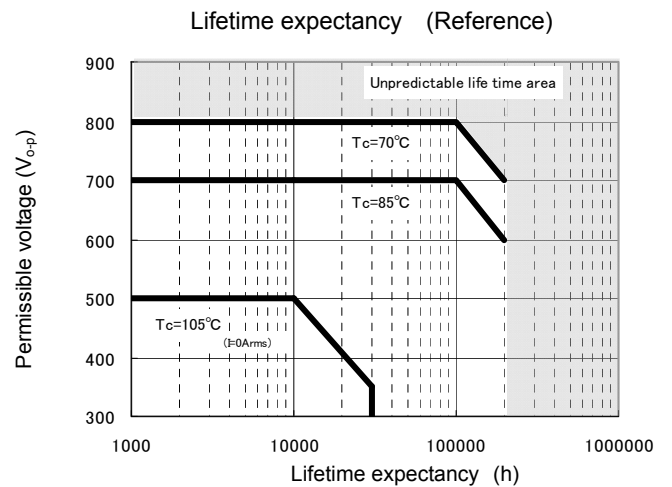
## ● Temperature Characteristics



## ● Frequency Characteristics



## ● Lifetime expectancy

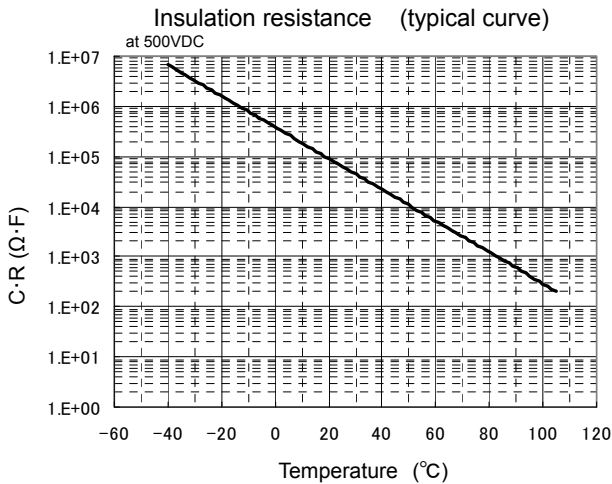
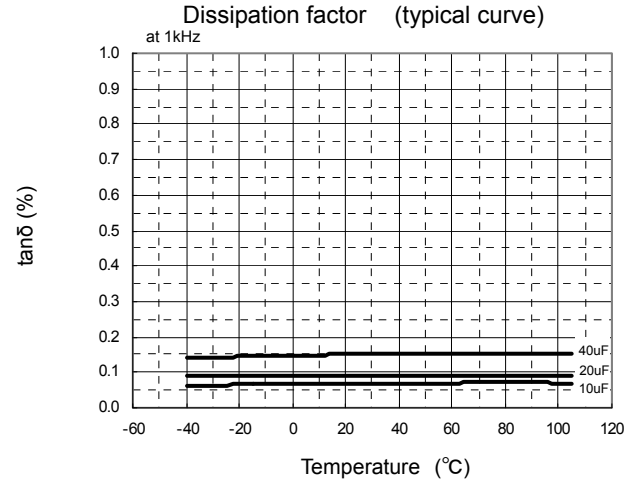
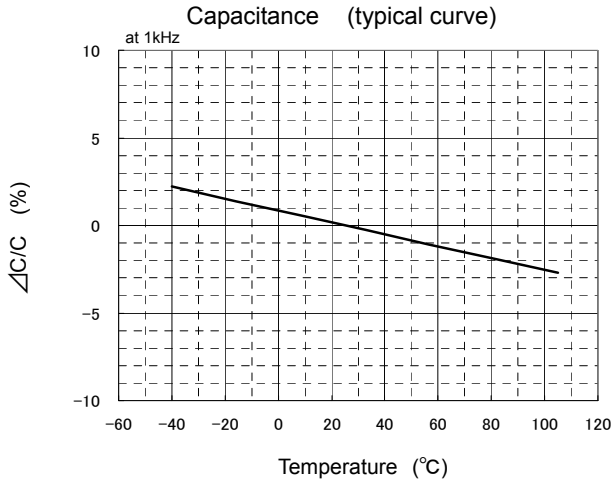


\* Life time : Reach ΔC/C = - 10 % , Judgement of Panasonic  
\* 105°C : Not guarantee voltage

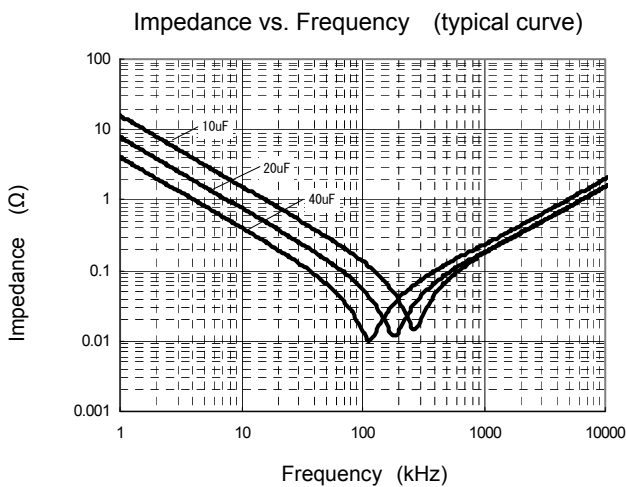
## ■ Characteristics <Reference>

● Type EZPE Rated voltage : 1100 VDC at 70 °C ( 920VDC at 85 °C )

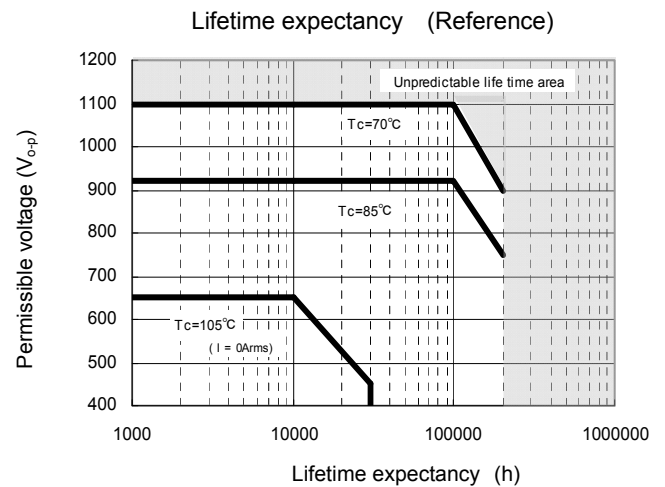
## ● Temperature Characteristics



## ● Frequency Characteristics



## ● Lifetime expectancy

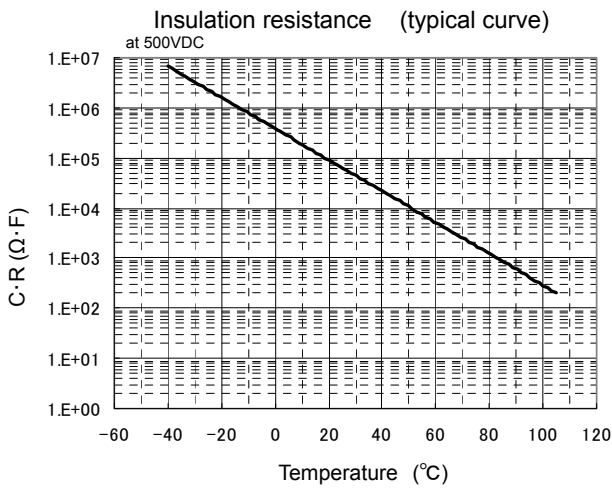
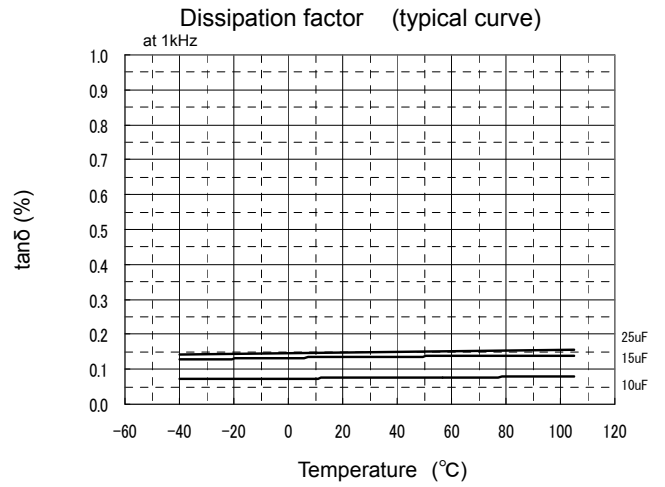
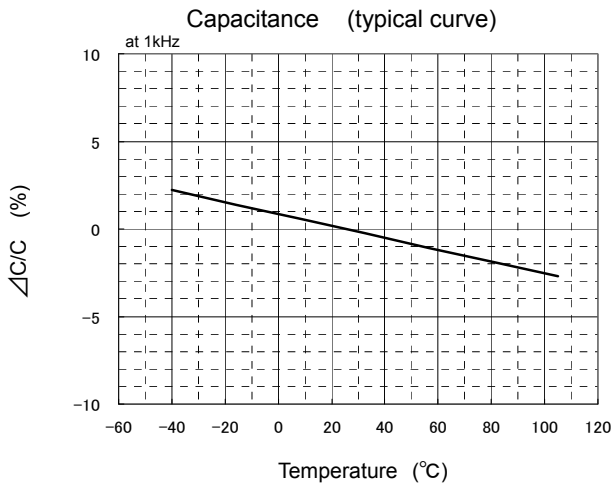


\* Life time : Reach  $\Delta C/C = -10\%$  , Judgement of Panasonic  
\*  $105^\circ C$  : Not guarantee voltage

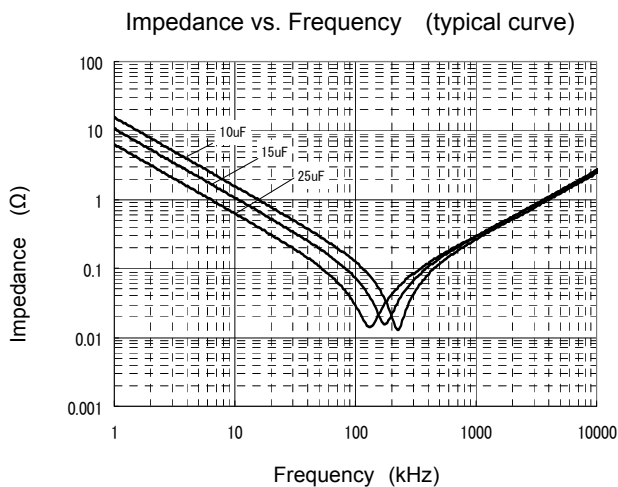
## ■ Characteristics <Reference>

● Type EZPE Rated voltage : 1300 VDC at 70 °C ( 1100VDC at 85 °C )

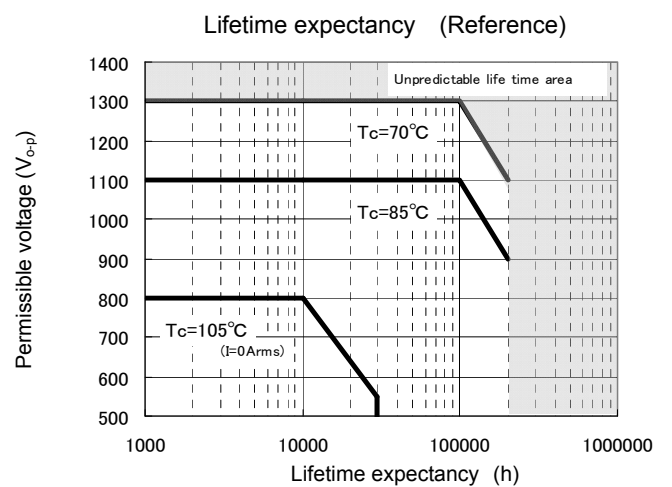
## ● Temperature Characteristics



## ● Frequency Characteristics



## ● Lifetime expectancy



\* Life time : Reach  $\Delta C/C = -10\%$  , Judgement of Panasonic  
\* 105°C : Not guarantee voltage