

Surface Mount Type

Series: **ZA** Type: **V**

High temperature Lead-Free reflow



■ Features

- Endurance: 10000 h at 105 °C
- Low ESR and High ripple current (70 % over, Lower ESR than Current V-FP)
- High voltage (to 80V)
- Equivalent to conductive polymer type Aluminum Electrolytic Capacitor (There are little characteristics change by temperature and frequency)
- AEC-Q200 qualified*
- RoHS directive compliant

■ Specifications

| Category Temp.Range | -55 °C to +105 °C | | | | | | | | | | | | | | | | | | | |
|------------------------------|--|--|-----|-----|--|--|-----------|--|--|--|--|---|---|----|---|---|-----|-----|-----|-----|
| Rated W.V. Range | 25 V.DC to 80 V.DC | | | | | | | | | | | | | | | | | | | |
| Nominal Cap. Range | 10 μF to 330 μF | | | | | | | | | | | | | | | | | | | |
| CapacitanceTolerance | ±20 % (120 Hz/+20 °C) | | | | | | | | | | | | | | | | | | | |
| DC Leakage Current | I ≤ 0.01 CV or 3 (μA) After 2 minutes (Whichever is greater) | | | | | | | | | | | | | | | | | | | |
| tan δ | Please see the attached Standard Products list | | | | | | | | | | | | | | | | | | | |
| Endurance | The capacitor shall be subjected to application of the D.C. voltage with full rated ripple current at +105 °C for 10000 hours. After stabilizing at room temperature(+15 to 35 °C), the capacitor shall not exceed the specified limits. (The sum of DC voltage and ripple peak voltage shall not exceed the rated voltage.) | | | | | | | | | | | | | | | | | | | |
| | Capacitance change | ±30 % of initial measured value | | | | | | | | | | | | | | | | | | |
| | tan δ | ≤ 200 % initial specified value | | | | | | | | | | | | | | | | | | |
| | E.S.R. | ≤ 200 % initial specified value | | | | | | | | | | | | | | | | | | |
| | DC leakage current | ≤ initial specified value | | | | | | | | | | | | | | | | | | |
| | ESR after Endurance (Ω/100 kHz) (-40°C) | <table border="1"> <tr> <th colspan="5">Size Code</th> </tr> <tr> <td>C</td> <td>D</td> <td>D8</td> <td>F</td> <td>G</td> </tr> <tr> <td>2.0</td> <td>1.4</td> <td>0.8</td> <td>0.4</td> <td>0.3</td> </tr> </table> | | | | | Size Code | | | | | C | D | D8 | F | G | 2.0 | 1.4 | 0.8 | 0.4 |
| Size Code | | | | | | | | | | | | | | | | | | | | |
| C | D | D8 | F | G | | | | | | | | | | | | | | | | |
| 2.0 | 1.4 | 0.8 | 0.4 | 0.3 | | | | | | | | | | | | | | | | |
| Shelf Life | After storage for 1000 hours at +105 °C±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance. (With voltage treatment) | | | | | | | | | | | | | | | | | | | |
| Resistance to Soldering Heat | After reflow soldering and then being stabilized at +20 °C, capacitors shall meet the following limits. | | | | | | | | | | | | | | | | | | | |
| | Capacitance change | ±10 % of initial measured value | | | | | | | | | | | | | | | | | | |
| | tan δ | ≤ initial specified value | | | | | | | | | | | | | | | | | | |
| | DC leakage current | ≤ initial specified value | | | | | | | | | | | | | | | | | | |

■ Frequency correction factor for ripple current

| | Frequency (Hz) | | | |
|-------------------|----------------|------|------|----------|
| | 120 | 1 k | 10 k | 100 k to |
| Correction factor | 0.10 | 0.30 | 0.60 | 1.00 |

■ Marking

Example : 25 V 33 μF Marking color : BLACK

| | | | |
|---|------|---|------|
| E | 25 V | J | 63 V |
| V | 35 V | K | 80 V |
| H | 50 V | | |

■ Dimensions in mm (not to scale)

(Unit : mm)

| Size code | D | L | A, B | H | I | W | P | K |
|-----------|------|----------|------|-----------|-----|----------|-----|--|
| C | 5.0 | 5.8±0.3 | 5.3 | 6.5 max. | 2.2 | 0.65±0.1 | 1.5 | 0.35 ^{+0.15} _{-0.20} |
| D | 6.3 | 5.8±0.3 | 6.6 | 7.8 max. | 2.6 | 0.65±0.1 | 1.8 | 0.35 ^{+0.15} _{-0.20} |
| D8 | 6.3 | 7.7±0.3 | 6.6 | 7.8 max. | 2.6 | 0.65±0.1 | 1.8 | 0.35 ^{+0.15} _{-0.20} |
| F | 8.0 | 10.2±0.3 | 8.3 | 10.0 max. | 3.4 | 0.90±0.2 | 3.1 | 0.70±0.2 |
| G | 10.0 | 10.2±0.3 | 10 | 12.0 max. | 3.5 | 0.90±0.2 | 4.6 | 0.70±0.2 |

* This product qualifi for AEC-Q200, but it has some deviations.

■ Standard Products

Endurance : 105 °C 10000 h

| W.V. (V.DC) | Cap. (±20 %) (µF) | Case size | | | Specification | | | Part No. (RoHS: compliant) | Reflow | Min. Packaging Q'ty |
|----------------|-------------------------|--------------|----------------|--------------|--|---|-------------------------------|-------------------------------|--------|------------------------|
| | | Dia. (mm) | Length (mm) | Size Code | Ripple Current (100 kHz) (+105 °C) (mA r.m.s.) | E.S.R. (100 kHz) (+20 °C) (mΩ) | tan δ (120 Hz) (+20 °C) | | | Taping (pcs) |
| 25 | 33 | 5 | 5.8 | C | 900 | 80 | 0.14 | EEHZA1E330R | (5) | 1000 |
| | 56 | 6.3 | 5.8 | D | 1300 | 50 | 0.14 | EEHZA1E560P | (5) | 1000 |
| | 100 | 6.3 | 7.7 | D8 | 2000 | 30 | 0.14 | EEHZA1E101XP | (5) | 900 |
| | 220 | 8 | 10.2 | F | 2300 | 27 | 0.14 | EEHZA1E221P | (6) | 500 |
| | 330 | 10 | 10.2 | G | 2500 | 20 | 0.14 | EEHZA1E331P | (6) | 500 |
| 35 | 22 | 5 | 5.8 | C | 900 | 100 | 0.12 | EEHZA1V220R | (5) | 1000 |
| | 27 | 6.3 | 5.8 | D | 1300 | 60 | 0.12 | EEHZA1V270P | (5) | 1000 |
| | 47 | 6.3 | 5.8 | D | 1300 | 60 | 0.12 | EEHZA1V470P | (5) | 1000 |
| | 68 | 6.3 | 7.7 | D8 | 2000 | 35 | 0.12 | EEHZA1V680XP | (5) | 900 |
| | 150 | 8 | 10.2 | F | 2300 | 27 | 0.12 | EEHZA1V151P | (6) | 500 |
| | 270 | 10 | 10.2 | G | 2500 | 20 | 0.12 | EEHZA1V271P | (6) | 500 |
| 50 | 10 | 5 | 5.8 | C | 750 | 120 | 0.10 | EEHZA1H100R | (5) | 1000 |
| | 22 | 6.3 | 5.8 | D | 1100 | 80 | 0.10 | EEHZA1H220P | (5) | 1000 |
| | 33 | 6.3 | 7.7 | D8 | 1600 | 40 | 0.10 | EEHZA1H330XP | (5) | 900 |
| | 68 | 8 | 10.2 | F | 1800 | 30 | 0.10 | EEHZA1H680P | (6) | 500 |
| | 100 | 10 | 10.2 | G | 2000 | 28 | 0.10 | EEHZA1H101P | (6) | 500 |
| 63 | 10 | 6.3 | 5.8 | D | 1000 | 120 | 0.08 | EEHZA1J100P | (5) | 1000 |
| | 22 | 6.3 | 7.7 | D8 | 1500 | 80 | 0.08 | EEHZA1J220XP | (5) | 900 |
| | 33 | 8 | 10.2 | F | 1700 | 40 | 0.08 | EEHZA1J330P | (6) | 500 |
| | 56 | 10 | 10.2 | G | 1800 | 30 | 0.08 | EEHZA1J560P | (6) | 500 |
| 80 | 22 | 8 | 10.2 | F | 1550 | 45 | 0.08 | EEHZA1K220P | (6) | 500 |
| | 33 | 10 | 10.2 | G | 1700 | 36 | 0.08 | EEHZA1K330P | (6) | 500 |

• Please refer to the page of "Reflow Profile" and "The Taping Dimensions".