

# CONDUCTIVE POLYMER HYBRID ALUMINUM ELECTROLYTIC CAPACITORS

# GYA

Chip Type, 125°C High Reliability

**NEW**

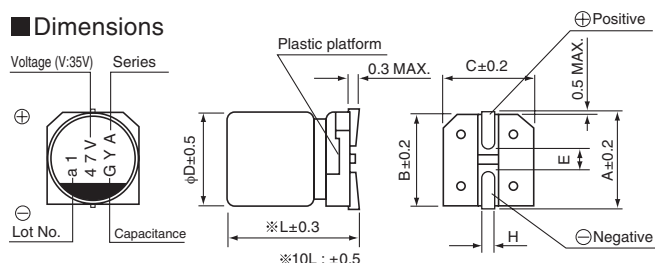
- High Reliability, Low ESR,High ripple current.
- Long life of 4000 hours at 125°C.
- Adapted to the RoHS directive (2011/65/EU).



## Specifications

| Item                          | Performance Characteristics                                                                                                                                                                                                             |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------|-------|---------------------------------------------------|-----------------|---------------------------------------------------|-----------------|---------------------------------------------------|------|------|------|
| Category Temperature Range    | -55 to +125°C                                                                                                                                                                                                                           |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| Rated Voltage Range           | 25 to 63V                                                                                                                                                                                                                               |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| Rated Capacitance Range       | 10 to 330μF                                                                                                                                                                                                                             |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| Capacitance Tolerance         | ± 20% at 120Hz, 20°C                                                                                                                                                                                                                    |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| Leakage Current               | After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV(μA).                                                                                                                                     |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| Tangent of loss angle (tan δ) | <table><tr><td>Rated voltage (V)</td><td>25</td><td>35</td><td>50</td><td>63</td><td rowspan="2">120Hz 20°C</td></tr><tr><td>tan δ (MAX.)</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.08</td></tr></table>                         |      |      |      |                                                                                                                                                                                                                                                                                                                                                      | Rated voltage (V)  | 25                                          | 35    | 50                                                | 63              | 120Hz 20°C                                        | tan δ (MAX.)    | 0.14                                              | 0.12 | 0.10 | 0.08 |
| Rated voltage (V)             | 25                                                                                                                                                                                                                                      | 35   | 50   | 63   | 120Hz 20°C                                                                                                                                                                                                                                                                                                                                           |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| tan δ (MAX.)                  | 0.14                                                                                                                                                                                                                                    | 0.12 | 0.10 | 0.08 |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| ESR                           | Less than or equal to the specified value at 100kHz, 20°C                                                                                                                                                                               |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| Endurance                     | The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 4000 hours at 125°C, the peak voltage shall not exceed the rated voltage.             |      |      |      | <table><tr><td>Capacitance change</td><td>Within ± 30% of initial capacitance value</td></tr><tr><td>tan δ</td><td>200% or less of the initial specified value</td></tr><tr><td>ESR</td><td>200% or less of the initial specified value</td></tr><tr><td>Leakage current</td><td>Less than or equal to the initial specified value</td></tr></table> | Capacitance change | Within ± 30% of initial capacitance value   | tan δ | 200% or less of the initial specified value       | ESR             | 200% or less of the initial specified value       | Leakage current | Less than or equal to the initial specified value |      |      |      |
| Capacitance change            | Within ± 30% of initial capacitance value                                                                                                                                                                                               |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| tan δ                         | 200% or less of the initial specified value                                                                                                                                                                                             |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| ESR                           | 200% or less of the initial specified value                                                                                                                                                                                             |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| Leakage current               | Less than or equal to the initial specified value                                                                                                                                                                                       |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| Shelf Life                    | After storing the capacitors under no load at 125°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above. |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| Damp Heat (Steady State)      | The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 85°C, 85% RH.                                                                             |      |      |      | <table><tr><td>Capacitance change</td><td>Within±30% of the initial capacitance value</td></tr><tr><td>tan δ</td><td>200% or less of the initial specified value</td></tr><tr><td>Leakage current</td><td>Less than or equal to the initial specified value</td></tr></table>                                                                        | Capacitance change | Within±30% of the initial capacitance value | tan δ | 200% or less of the initial specified value       | Leakage current | Less than or equal to the initial specified value |                 |                                                   |      |      |      |
| Capacitance change            | Within±30% of the initial capacitance value                                                                                                                                                                                             |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| tan δ                         | 200% or less of the initial specified value                                                                                                                                                                                             |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| Leakage current               | Less than or equal to the initial specified value                                                                                                                                                                                       |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| Resistance to Soldering Heat  | After soldering the Capacitor, After restored at room temperature, they meet the characteristics requirements listed below.                                                                                                             |      |      |      | <table><tr><td>Capacitance change</td><td>Within±10% of the initial capacitance value</td></tr><tr><td>tan δ</td><td>Less than or equal to the initial specified value</td></tr><tr><td>Leakage current</td><td>Less than or equal to the initial specified value</td></tr></table>                                                                  | Capacitance change | Within±10% of the initial capacitance value | tan δ | Less than or equal to the initial specified value | Leakage current | Less than or equal to the initial specified value |                 |                                                   |      |      |      |
| Capacitance change            | Within±10% of the initial capacitance value                                                                                                                                                                                             |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| tan δ                         | Less than or equal to the initial specified value                                                                                                                                                                                       |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| Leakage current               | Less than or equal to the initial specified value                                                                                                                                                                                       |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |
| Marking                       | Black print on the case top.                                                                                                                                                                                                            |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |      |      |      |

## Dimensions



## Type numbering system (Example : 35V 47μF)

|   |   |   |                              |   |   |   |   |   |    |    |    |    |    |
|---|---|---|------------------------------|---|---|---|---|---|----|----|----|----|----|
| 1 | 2 | 3 | 4                            | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| G | Y | A | 1                            | V | 4 | 7 | 0 | M | C  | Q  | 1  | G  | S  |
|   |   |   | Taping code                  |   |   |   |   |   |    |    |    |    |    |
|   |   |   | Size code                    |   |   |   |   |   |    |    |    |    |    |
|   |   |   | Configuration                |   |   |   |   |   |    |    |    |    |    |
|   |   |   | Capacitance tolerance (±20%) |   |   |   |   |   |    |    |    |    |    |
|   |   |   | Rated capacitance (47μF)     |   |   |   |   |   |    |    |    |    |    |
|   |   |   | Rated voltage (35V)          |   |   |   |   |   |    |    |    |    |    |
|   |   |   | Series name                  |   |   |   |   |   |    |    |    |    |    |
|   |   |   | Type                         |   |   |   |   |   |    |    |    |    |    |

|   | φ6.3×5.8   | φ6.3×7.7   | φ8×10      | φ10×10     |
|---|------------|------------|------------|------------|
| A | 7.3        | 7.3        | 9.0        | 11.0       |
| B | 6.6        | 6.6        | 8.3        | 10.3       |
| C | 6.6        | 6.6        | 8.3        | 10.3       |
| E | 2.2        | 2.2        | 3.1        | 4.5        |
| L | 5.8        | 7.7        | 10.3       | 10.3       |
| H | 0.5 to 0.8 | 0.5 to 0.8 | 0.8 to 1.1 | 0.8 to 1.1 |

## Voltage

|      |    |    |    |    |
|------|----|----|----|----|
| V    | 25 | 35 | 50 | 63 |
| Code | E  | V  | H  | J  |

## Specifications

| V         |     | 25                  | 35                  | 50                  | 63                  |
|-----------|-----|---------------------|---------------------|---------------------|---------------------|
| Cap. (μF) |     | 1E                  | 1V                  | 1H                  | 1J                  |
| 10        | 100 |                     |                     |                     | 6.3×5.8   120   700 |
| 22        | 220 |                     |                     | 6.3×5.8   80   750  | 6.3×7.7   80   900  |
| 33        | 330 |                     |                     | 6.3×7.7   40   1100 | 8×10   40   1100    |
| 47        | 470 |                     | 6.3×5.8   60   900  |                     |                     |
| 56        | 560 | 6.3×5.8   50   900  |                     |                     | 10×10   30   1400   |
| 68        | 680 |                     | 6.3×7.7   35   1400 | 8×10   30   1250    |                     |
| 100       | 101 | 6.3×7.7   30   1400 |                     | 10×10   28   1600   |                     |
| 150       | 151 |                     | 8×10   27   1600    |                     |                     |
| 220       | 221 | 8×10   27   1600    |                     |                     |                     |
| 270       | 271 |                     | 10×10   20   2000   |                     |                     |
| 330       | 331 | 10×10   20   2000   |                     |                     |                     |

ESR:100kHz,20°C  
Rated ripple Current 100kHz,125°C

Design, Specifications are subject to change without notice.

NICHICON CORPORATION