

CONDUCTIVE POLYMER HYBRID ALUMINUM ELECTROLYTIC CAPACITORS

GYB

Chip Type, 105°C High Reliability



NEW

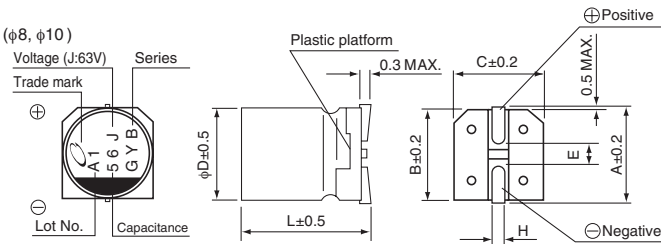
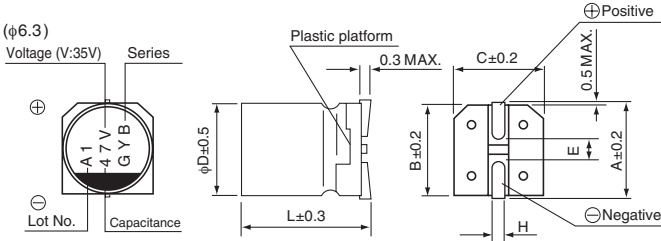
- High Reliability, Low ESR,High ripple current.
- Long life of 10000 hours at 105°C.
- Compliant to the RoHS directive (2011/65/EU).



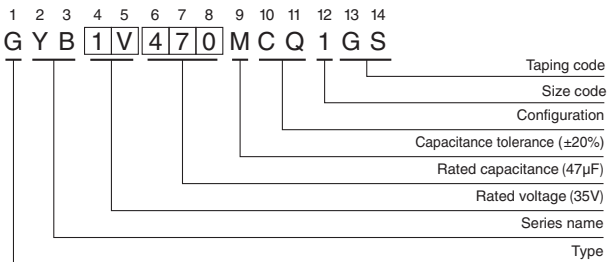
Specifications

| Item                                              | Performance Characteristics                                                                                                                                                                                                             |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------|-------|---------------------------------------------------|-----------------|---------------------------------------------------|-----------------|---------------------------------------------------|
| Category Temperature Range                        | -55 to +105°C                                                                                                                                                                                                                           |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |
| Rated Voltage Range                               | 25 to 63V                                                                                                                                                                                                                               |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |
| Rated Capacitance Range                           | 10 to 330μF                                                                                                                                                                                                                             |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |
| Capacitance Tolerance                             | ±20% at 120Hz, 20°C                                                                                                                                                                                                                     |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |
| Tangent of loss angle (tan δ)                     | 120Hz 20°C                                                                                                                                                                                                                              |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |
|                                                   | Rated voltage (V)                                                                                                                                                                                                                       | 25   | 35   | 50   | 63                                                                                                                                                                                                                                                                                                                                                   |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |
|                                                   | tan δ (MAX.)                                                                                                                                                                                                                            | 0.14 | 0.12 | 0.10 | 0.08                                                                                                                                                                                                                                                                                                                                                 |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |
| ESR                                               | Less than or equal to the specified value at 100kHz, 20°C                                                                                                                                                                               |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |
| Leakage Current                                   | After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV(μA).                                                                                                                                     |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |
| Temperature Characteristics (Max.Impedance Ratio) | Z-25°C / Z+20°C ≤ 2<br>Z-55°C / Z+20°C ≤ 2.5 (100kHz)                                                                                                                                                                                   |      |      |      |                                                                                                                                                                                                                                                                                                                                                      |                    |                                             |       |                                                   |                 |                                                   |                 |                                                   |
| 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 10000 hours at 105°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 105°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)



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

Design, Specifications are subject to change without notice.

# CONDUCTIVE POLYMER HYBRID ALUMINUM ELECTROLYTIC CAPACITORS

# GYB

## Specifications

| V (Code)<br>Cap.(μF)<br>Code |     | 25        |    |      | 35        |    |      | 50        |    |      | 63        |           |                  |
|------------------------------|-----|-----------|----|------|-----------|----|------|-----------|----|------|-----------|-----------|------------------|
|                              |     | 1E        |    |      | 1V        |    |      | 1H        |    |      | 1J        |           |                  |
| 10                           | 100 |           |    |      |           |    |      |           |    |      | 6.3 × 5.8 | 120       | 1000             |
| 22                           | 220 |           |    |      |           |    |      | 6.3 × 5.8 | 80 | 1100 | 6.3 × 7.7 | 80        | 1500             |
| 33                           | 330 |           |    |      |           |    |      | 6.3 × 7.7 | 40 | 1600 | 8 × 10    | 40        | 1600             |
| 47                           | 470 |           |    |      | 6.3 × 5.8 | 60 | 1300 |           |    |      |           |           |                  |
| 56                           | 560 | 6.3 × 5.8 | 50 | 1300 |           |    |      |           |    |      | 10 × 10   | 30        | 1800             |
| 68                           | 680 |           |    |      | 6.3 × 7.7 | 35 | 2000 | 8 × 10    | 30 | 1800 |           |           |                  |
| 100                          | 101 | 6.3 × 7.7 | 30 | 2000 |           |    |      | 10 × 10   | 28 | 2000 |           |           |                  |
| 150                          | 151 |           |    |      | 8 × 10    | 27 | 2300 |           |    |      |           |           |                  |
| 220                          | 221 | 8 × 10    | 27 | 2300 |           |    |      |           |    |      |           |           |                  |
| 270                          | 271 |           |    |      | 10 × 10   | 20 | 2500 |           |    |      | φD×L      | ESR<br>mΩ | Ripple<br>mA rms |
| 330                          | 331 | 10 × 10   | 20 | 2500 |           |    |      |           |    |      |           |           |                  |

ESR at 20°C 100kHz  
Rated ripple Current at 105°C 100kHz

## Frequency coefficient of rated ripple current

| Frequency   | 120Hz | 1kHz | 10kHz | 100kHz or more |
|-------------|-------|------|-------|----------------|
| Coefficient | 0.15  | 0.40 | 0.75  | 1.00           |

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