

## GYB

 Chip Type, 105°C High Reliability

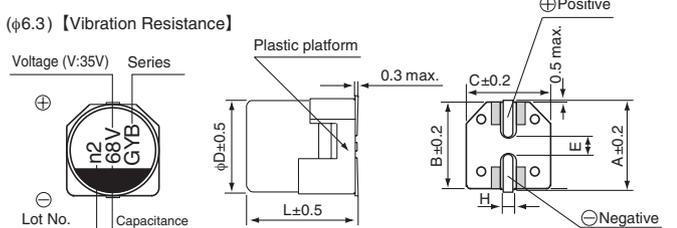
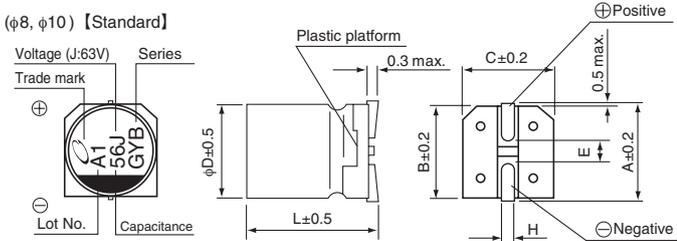
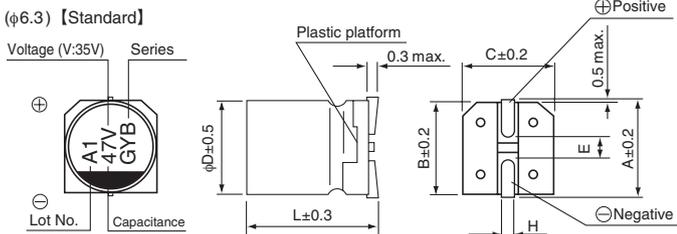

- High Reliability, Low ESR, High ripple current.
- Long life of 10000 hours at 105°C.
- Compliant to the RoHS directive (2011/65/EU, (EU)2015/863).
- AEC-Q200 Qualified. Please contact us for details.



### ■ Specifications

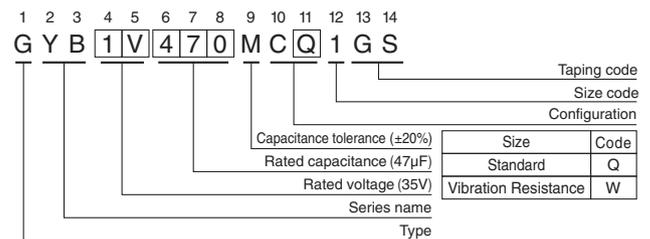
| Item   | Performance Characteristics   |   |
|--|---|---|
| Category Temperature Range                         | -55 to +105°C   |   |
| Rated Voltage Range                                | 16 to 80V   |   |
| Rated Capacitance Range                            | 10 to 560μF   |   |
| Capacitance Tolerance                              | ±20% at 120Hz, 20°C   |   |
| Tangent of loss angle (tan δ)                      | Rated voltage (V)   | 16    25    35    50    63    80                  |
|  | tan δ (max.)  | 0.16    0.14    0.12    0.10    0.08    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).<br>80V: After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.05CV(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.            |   |
|  | 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       |
| 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. |   |
|  | 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 |
| 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 2000 hours at 85°C, 85% RH.   |   |
|  | 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                       | The capacitors are kept on a hot plate for 30 seconds, which is maintained at 250°C. The capacitors shall meet the characteristic requirements listed at right when they are removed from the plate and restored to 20°C.               |   |
|  | 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



※ I : Leakage Current (μA), C : Rated Capacitance (μF), V : Rated Voltage (V)

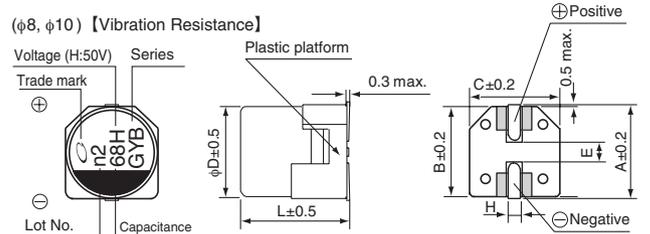
### Type numbering system (Example : 35V 47μF)



| Standard |            |            |            |            | (mm)       |    |            |            |            | Vibration Resistance |    |            |            |            | (mm)       |    |            |            |            |            |            |
|----------|------------|------------|------------|------------|------------|----|------------|------------|------------|----------------------|----|------------|------------|------------|------------|----|------------|------------|------------|------------|------------|
| φD       | 6.3×5.8    | 6.3×7.7    | 8×10       | 10×10      | 10×12.5    | φD | 6.3×7.7    | 8×10       | 10×10      | 10×12.5              | φD | 6.3×7.7    | 8×10       | 10×10      | 10×12.5    | φD | 6.3×7.7    | 8×10       | 10×10      | 10×12.5    |            |
| A        | 7.3        | 7.3        | 9.0        | 11.0       | 11.0       | A  | 7.3        | 9.0        | 11.0       | 11.0                 | A  | 7.3        | 9.0        | 11.0       | 11.0       | A  | 7.3        | 9.0        | 11.0       | 11.0       | 11.0       |
| B        | 6.6        | 6.6        | 8.3        | 10.3       | 10.3       | B  | 6.6        | 8.3        | 10.3       | 10.3                 | B  | 6.6        | 8.3        | 10.3       | 10.3       | B  | 6.6        | 8.3        | 10.3       | 10.3       | 10.3       |
| C        | 6.6        | 6.6        | 8.3        | 10.3       | 10.3       | C  | 6.6        | 8.3        | 10.3       | 10.3                 | C  | 6.6        | 8.3        | 10.3       | 10.3       | C  | 6.6        | 8.3        | 10.3       | 10.3       | 10.3       |
| E        | 2.2        | 2.2        | 3.1        | 4.5        | 4.5        | E  | 2.2        | 3.1        | 4.5        | 4.5                  | E  | 2.2        | 3.1        | 4.5        | 4.5        | E  | 2.2        | 3.1        | 4.5        | 4.5        | 4.5        |
| L        | 5.8        | 7.7        | 10.3       | 10.3       | 12.5       | L  | 7.7        | 10.5       | 10.5       | 12.8                 | L  | 7.7        | 10.5       | 10.5       | 12.8       | L  | 7.7        | 10.5       | 10.5       | 12.8       | 12.8       |
| H        | 0.5 to 0.8 | 0.5 to 0.8 | 0.8 to 1.1 | 0.8 to 1.1 | 0.8 to 1.1 | H  | 0.5 to 0.8 | 1.1 to 1.5 | 1.1 to 1.5 | 1.1 to 1.5           | H  | 0.5 to 0.8 | 1.1 to 1.5 | 1.1 to 1.5 | 1.1 to 1.5 | H  | 0.5 to 0.8 | 1.1 to 1.5 | 1.1 to 1.5 | 1.1 to 1.5 | 1.1 to 1.5 |

● Frequency coefficient of rated ripple current

| Voltage | Frequency   | 120Hz | 1kHz | 10kHz | 100kHz or more |    |
|---------|-------------|-------|------|-------|----------------|----|
| V       | 16          | 25    | 35   | 50    | 63             | 80 |
| Code    | C           | E     | V    | H     | J              | K  |
|         | Coefficient | 0.15  | 0.40 | 0.75  | 1.00           |    |



● Dimension table in next page.



■ Dimensions

| Rated Voltage (V) (code) | Rated Capacitance (μF) | Case Size φD×L (mm) | tan δ       | Leakage Current (μA) (at 20°C after 2 minutes) | ESR (mΩ) max. (20°C/100kHz) | Rated Ripple (mA rms) (105°C/100kHz) | Part Number           |
|--------------------------|------------------------|---------------------|-------------|--|-----------------------------|--------------------------------------|-----------------------|
| 16 (1C)                  | 82                     | 6.3×5.8             | 0.16        | 13.12  | 50                          | 1400                                 | GYB1C820MC□1GS        |
|                          | 150                    | 6.3×7.7             | 0.16        | 24.0   | 30                          | 2100                                 | GYB1C151MC□1GS        |
|                          | 270                    | 8×10                | 0.16        | 43.2   | 25                          | 2400                                 | GYB1C271MC□1GS        |
|                          | 470                    | 10×10               | 0.16        | 75.2   | 20                          | 2600                                 | GYB1C471MC□1GS        |
|                          | <b>560</b>             | <b>10×12.5</b>      | <b>0.16</b> | <b>89.6</b>                                    | <b>15</b>                   | <b>3500</b>                          | <b>GYB1C561MC□1GS</b> |
| 25 (1E)                  | 47                     | 6.3×5.8             | 0.14        | 11.75  | 50                          | 1300                                 | GYB1E470MC□1GS        |
|                          | 56                     | 6.3×5.8             | 0.14        | 14.00  | 50                          | 1300                                 | GYB1E560MC□1GS        |
|                          | 68                     | 6.3×7.7             | 0.14        | 17.00  | 30                          | 2000                                 | GYB1E680MC□1GS        |
|                          | 100                    | 6.3×7.7             | 0.14        | 25.00  | 30                          | 2000                                 | GYB1E101MC□1GS        |
|                          | 150                    | 8×10                | 0.14        | 37.50  | 27                          | 2300                                 | GYB1E151MC□1GS        |
|                          | 220                    | 8×10                | 0.14        | 55.00  | 27                          | 2300                                 | GYB1E221MC□1GS        |
|                          | 270                    | 10×10               | 0.14        | 67.50  | 20                          | 2500                                 | GYB1E271MC□1GS        |
|                          | 330                    | 10×10               | 0.14        | 82.50  | 20                          | 2500                                 | GYB1E331MC□1GS        |
|                          | 470                    | 10×12.5             | 0.14        | 117.50   | 16                          | 3500                                 | GYB1E471MC□1GS        |
| 35 (1V)                  | 33                     | 6.3×5.8             | 0.12        | 11.55  | 60                          | 1300                                 | GYB1V330MC□1GS        |
|                          | 47                     | 6.3×5.8             | 0.12        | 16.45  | 60                          | 1300                                 | GYB1V470MC□1GS        |
|                          | 68                     | 6.3×7.7             | 0.12        | 23.80  | 35                          | 2000                                 | GYB1V680MC□1GS        |
|                          | 100                    | 8×10                | 0.12        | 35.00  | 27                          | 2300                                 | GYB1V101MC□1GS        |
|                          | 150                    | 8×10                | 0.12        | 52.50  | 27                          | 2300                                 | GYB1V151MC□1GS        |
|                          | 220                    | 10×10               | 0.12        | 77.00  | 20                          | 2500                                 | GYB1V221MC□1GS        |
|                          | 270                    | 10×10               | 0.12        | 94.50  | 20                          | 2500                                 | GYB1V271MC□1GS        |
|                          | 330                    | 10×12.5             | 0.12        | 115.50   | 16                          | 3500                                 | GYB1V331MC□1GS        |
| 50 (1H)                  | 22                     | 6.3×5.8             | 0.10        | 11.00  | 80                          | 1100                                 | GYB1H220MC□1GS        |
|                          | 33                     | 6.3×7.7             | 0.10        | 16.50  | 40                          | 1600                                 | GYB1H330MC□1GS        |
|                          | 47                     | 8×10                | 0.10        | 23.50  | 30                          | 1800                                 | GYB1H470MC□1GS        |
|                          | 68                     | 8×10                | 0.10        | 34.00  | 30                          | 1800                                 | GYB1H680MC□1GS        |
|                          | 100                    | 10×10               | 0.10        | 50.00  | 28                          | 2000                                 | GYB1H101MC□1GS        |
|                          | 120                    | 10×10               | 0.10        | 60.00  | 28                          | 2000                                 | GYB1H121MC□1GS        |
|                          | 150                    | 10×12.5             | 0.10        | 75.00  | 18                          | 3200                                 | GYB1H151MC□1GS        |
| 63 (1J)                  | 10                     | 6.3×5.8             | 0.08        | 6.30   | 120                         | 1000                                 | GYB1J100MC□1GS        |
|                          | 22                     | 6.3×7.7             | 0.08        | 13.86  | 80                          | 1500                                 | GYB1J220MC□1GS        |
|                          | 33                     | 8×10                | 0.08        | 20.79  | 40                          | 1600                                 | GYB1J330MC□1GS        |
|                          | 47                     | 8×10                | 0.08        | 29.61  | 40                          | 1600                                 | GYB1J470MC□1GS        |
|                          | 56                     | 10×10               | 0.08        | 35.28  | 30                          | 1800                                 | GYB1J560MC□1GS        |
|                          | 68                     | 10×10               | 0.08        | 42.84  | 30                          | 1800                                 | GYB1J680MC□1GS        |
|                          | 82                     | 10×10               | 0.08        | 51.66  | 30                          | 1800                                 | GYB1J820MC□1GS        |
|                          | 100                    | 10×12.5             | 0.08        | 63.00  | 20                          | 3000                                 | GYB1J101MC□1GS        |
| 80 (1K)                  | <b>22</b>              | <b>8×10</b>         | <b>0.08</b> | <b>88.0</b>                                    | <b>45</b>                   | <b>1300</b>                          | <b>GYB1K220MC□1GS</b> |
|                          | <b>33</b>              | <b>10×10</b>        | <b>0.08</b> | <b>132.0</b>                                   | <b>36</b>                   | <b>1600</b>                          | <b>GYB1K330MC□1GS</b> |
|                          | <b>47</b>              | <b>10×10</b>        | <b>0.08</b> | <b>188.0</b>                                   | <b>36</b>                   | <b>1600</b>                          | <b>GYB1K470MC□1GS</b> |
|                          | <b>56</b>              | <b>10×12.5</b>      | <b>0.08</b> | <b>224.0</b>                                   | <b>26</b>                   | <b>2800</b>                          | <b>GYB1K560MC□1GS</b> |

□ : Enter the appropriate configuration code.

Blue : New product (as of October 2024)

• For taping specifications, recommended land size/soldering by reflow and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.