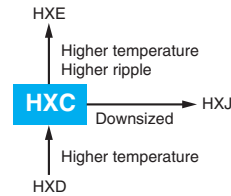


# HXC Series Upgrade!

- 80WV (φ 10×12.5L) model has been introduced to the product range.
- High reliability and high voltage are realized by hybrid electrolyte
- Endurance with ripple current : 4,000 hours at 125°C
- Rated voltage range : 16 to 80V<sub>dc</sub>, Capacitance range : 6.8 to 560μF
- For high temperature and high reliability applications. (Automotive equipment, Base station equipment, etc.)
- RoHS2 Compliant
- Halogen Free
- AEC-Q200 compliant : Please contact Chemi-Con for more details, test data, information.

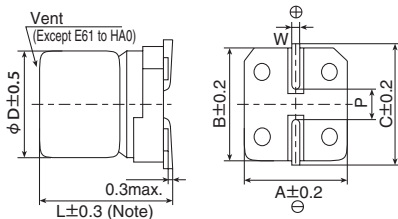


## SPECIFICATIONS

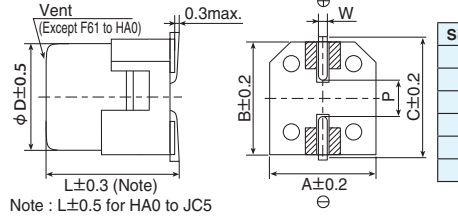
| Items  | Characteristics   |
|--|---|
| Category   | -55 to +125°C   |
| Temperature Range                                      | -55 to +125°C   |
| Rated Voltage Range                                    | 16 to 80V <sub>dc</sub>   |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)   |
| Leakage Current  | I=0.01CV or 3μA, whichever is greater<br>Where, I : Max. leakage current (μA), C: Nominal capacitance(μF), V : Rated voltage(V) (at 20°C after 2 minutes)   |
| Dissipation Factor (tan δ)                             | Rated voltage(V <sub>dc</sub> )<br>tan δ (Max.)   |
| Low Temperature Characteristics (Max. Impedance Ratio) | Z(-25°C)/Z(+20°C) ≤ 1.5<br>Z(-55°C)/Z(+20°C) ≤ 2.0 (at 100kHz)  |
| Endurance  | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 4,000 hours at 125°C.   |
|  | Capacitance change ≤ ±30% of the initial value  |
|  | D.F. (tan δ) ≤ 200% of the initial specified value  |
|  | ESR ≤ 200% of the initial specified value   |
|  | Leakage current ≤ The initial specified value   |
| Shelf Life   | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 125°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to item 4.1 of JIS C 5101-4. |
|  | Capacitance change ≤ ±30% of the initial value  |
|  | D.F. (tan δ) ≤ 200% of the initial specified value  |
|  | ESR ≤ 200% of the initial specified value   |
|  | Leakage current ≤ The initial specified value   |
| Bias Humidity Test                                     | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to the DC rated voltage at 85°C, 85% RH for 2,000 hours (80V (JC5 size): 1,000 hours).   |
|  | Appearance No significant damage  |
|  | Capacitance change ≤ ±30% of the initial value  |
|  | D.F. (tan δ) ≤ 200% of the initial specified value  |
|  | ESR ≤ 200% of the initial specified value   |
|  | Leakage current ≤ The initial specified value   |

## DIMENSIONS [mm]

- Terminal Code : A
- Size code : E61 to JC5
- Terminal Code : G (Vibration resistant structure)
- Size code : F61 to JC5



Note : L±0.5 for HA0 to JC5

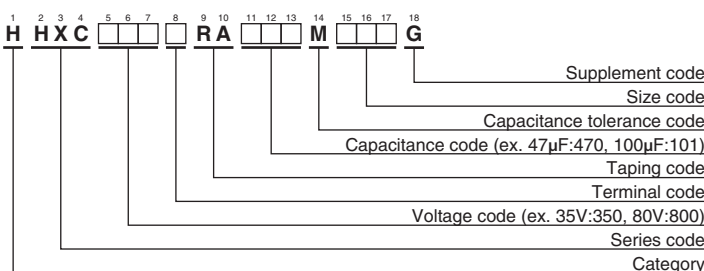


Note : L±0.5 for HA0 to JC5

▨ : Supportive terminals

| Size Code | φD  | L    | A    | B    | C    | W          | P   |
|-----------|-----|------|------|------|------|------------|-----|
| E61       | 5   | 5.8  | 5.3  | 5.3  | 5.9  | 0.5 to 0.8 | 1.4 |
| F61       | 6.3 | 5.8  | 6.6  | 6.6  | 7.2  | 0.5 to 0.8 | 1.9 |
| F80       | 6.3 | 7.7  | 6.6  | 6.6  | 7.2  | 0.5 to 0.8 | 1.9 |
| HA0       | 8   | 10.0 | 8.3  | 8.3  | 9.0  | 0.7 to 1.1 | 3.1 |
| JA0       | 10  | 10.0 | 10.3 | 10.3 | 11.0 | 0.7 to 1.1 | 4.5 |
| JC5       | 10  | 12.5 | 10.3 | 10.3 | 11.0 | 0.7 to 1.1 | 4.5 |

## PART NUMBERING SYSTEM



Please refer to "Product code guide (conductive polymer hybrid type)"

## MARKING

EX) 35V270μF



## Rated voltage symbol

| Rated voltage (V <sub>dc</sub> ) | Symbol |
|----------------------------------|--------|
| 16                               | C      |
| 25                               | E      |
| 35                               | V      |
| 50                               | H      |
| 63                               | J      |
| 80                               | K      |



◆STANDARD RATINGS

| WV (V <sub>dc</sub> ) | Cap (μF) | Size code | ESR (mΩ max./20°C, 100kHz) | Rated ripple current (mA rms/125°C, 100kHz) | Part No.           | WV (V <sub>dc</sub> ) | Cap (μF) | Size code | ESR (mΩ max./20°C, 100kHz) | Rated ripple current (mA rms/125°C, 100kHz) | Part No.           |                    |
|-----------------------|----------|-----------|----------------------------|---|--------------------|-----------------------|----------|-----------|----------------------------|---|--------------------|--------------------|
| 16                    | 47       | E61       | 80                         | 550   | HHXC160ARA470ME61G | 50                    | 10       | F61       | 80                         | 750   | HHXC500□RA100MF61G |                    |
|                       | 82       | F61       | 45                         | 950   | HHXC160□RA820MF61G |                       | 15       | F80       | 40                         | 1,100                                       | HHXC500□RA150MF80G |                    |
|                       | 150      | F80       | 27                         | 1,450                                       | HHXC160□RA151MF80G |                       | 22       | F61       | 80                         | 750   | HHXC500□RA220MF61G |                    |
|                       | 270      | HA0       | 22                         | 1,700                                       | HHXC160□RA271MHA0G |                       | 33       | F80       | 40                         | 1,100                                       | HHXC500□RA330MF80G |                    |
|                       | 470      | JA0       | 18                         | 2,100                                       | HHXC160□RA471MJA0G |                       | 33       | HA0       | 30                         | 1,250                                       | HHXC500□RA330MHA0G |                    |
|                       | 560      | JC5       | 15                         | 2,550                                       | HHXC160□RA561MJC5G |                       | 47       | HA0       | 30                         | 1,250                                       | HHXC500□RA470MHA0G |                    |
| 25                    | 33       | E61       | 80                         | 550   | HHXC250ARA330ME61G |                       | 56       | JA0       | 25                         | 1,600                                       | HHXC500□RA560MJA0G |                    |
|                       | 47       | F61       | 50                         | 900   | HHXC250□RA470MF61G |                       | 68       | HA0       | 30                         | 1,250                                       | HHXC500□RA680MHA0G |                    |
|                       | 56       | F61       | 50                         | 900   | HHXC250□RA560MF61G |                       | 100      | JA0       | 25                         | 1,600                                       | HHXC500□RA101MJA0G |                    |
|                       | 68       | F80       | 30                         | 1,400                                       | HHXC250□RA680MF80G |                       | 120      | JA0       | 25                         | 1,600                                       | HHXC500□RA121MJA0G |                    |
|                       | 100      | F80       | 30                         | 1,400                                       | HHXC250□RA101MF80G |                       | 150      | JC5       | 19                         | 2,250                                       | HHXC500□RA151MJC5G |                    |
|                       | 150      | HA0       | 27                         | 1,600                                       | HHXC250□RA151MHA0G |                       | 63       | 6.8       | F61                        | 120   | 700                | HHXC630□RA6R8MF61G |
|                       | 220      | HA0       | 27                         | 1,600                                       | HHXC250□RA221MHA0G |                       |          | 10        | F61                        | 120   | 700                | HHXC630□RA100MF61G |
|                       | 270      | JA0       | 20                         | 2,000                                       | HHXC250□RA271MJA0G |                       |          | 10        | F80                        | 80  | 900                | HHXC630□RA100MF80G |
|                       | 330      | JA0       | 20                         | 2,000                                       | HHXC250□RA331MJA0G |                       |          | 22        | F80                        | 80  | 900                | HHXC630□RA220MF80G |
| 470                   | JC5      | 16        | 2,500                      | HHXC250□RA471MJC5G                          | 22                 | HA0                   |          | 40        | 1,100                      | HHXC630□RA220MHA0G                          |                    |                    |
| 35                    | 22       | E61       | 100                        | 550   | HHXC350ARA220ME61G | 33                    |          | HA0       | 40                         | 1,100                                       | HHXC630□RA330MHA0G |                    |
|                       | 27       | F61       | 60                         | 900   | HHXC350□RA270MF61G | 33                    |          | JA0       | 30                         | 1,400                                       | HHXC630□RA330MJA0G |                    |
|                       | 47       | F61       | 60                         | 900   | HHXC350□RA470MF61G | 47                    |          | HA0       | 40                         | 1,100                                       | HHXC630□RA470MHA0G |                    |
|                       | 47       | F80       | 35                         | 1,400                                       | HHXC350□RA470MF80G | 56                    |          | JA0       | 30                         | 1,400                                       | HHXC630□RA560MJA0G |                    |
|                       | 68       | F80       | 35                         | 1,400                                       | HHXC350□RA680MF80G | 82                    |          | JA0       | 30                         | 1,400                                       | HHXC630□RA820MJA0G |                    |
|                       | 100      | HA0       | 27                         | 1,600                                       | HHXC350□RA101MHA0G | 100                   | JC5      | 22        | 2,100                      | HHXC630□RA101MJC5G                          |                    |                    |
|                       | 150      | HA0       | 27                         | 1,600                                       | HHXC350□RA151MHA0G | 80                    | 22       | HA0       | 45                         | 1,100                                       | HHXC800□RA220MHA0G |                    |
|                       | 150      | JA0       | 20                         | 2,000                                       | HHXC350□RA151MJA0G |                       | 39       | JA0       | 33                         | 1,400                                       | HHXC800□RA390MJA0G |                    |
|                       | 270      | JA0       | 20                         | 2,000                                       | HHXC350□RA271MJA0G |                       | 47       | JA0       | 33                         | 1,700                                       | HHXC800□RA470MJA0G |                    |
|                       | 330      | JC5       | 17                         | 2,400                                       | HHXC350□RA331MJC5G |                       | 47       | JC5       | 28                         | 2,100                                       | HHXC800□RA470MJC5G |                    |
|                       |          |           |                            |   | 68                 |                       | JC5      | 28        | 2,100                      | HHXC800□RA680MJC5G                          |                    |                    |
|                       |          |           |                            |   | 82                 |                       | JC5      | 28        | 2,100                      | HHXC800□RA820MJC5G                          |                    |                    |

□ : Enter the appropriate terminal code.  
New products are indicated in red text.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

| Capacitance(μF) | Frequency(Hz) |      |      |      |      |      |              |  |
|-----------------|---------------|------|------|------|------|------|--------------|--|
|                 | 120           | 1k   | 5k   | 10k  | 20k  | 30k  | 100k to 500k |  |
| to 10           | 0.03          | 0.30 | 0.50 | 0.60 | 0.70 | 0.75 | 1.00         |  |
| 15 to 33        | 0.07          | 0.30 | 0.50 | 0.60 | 0.70 | 0.75 | 1.00         |  |
| 39 to 150       | 0.10          | 0.40 | 0.60 | 0.70 | 0.80 | 0.80 | 1.00         |  |
| 220 to 560      | 0.13          | 0.45 | 0.65 | 0.75 | 0.85 | 0.85 | 1.00         |  |



- Always read "Notes on Use" before using the product in order to enable you to use the product correctly and prevent any faults and accidents from occurring.
- Request the Product Specification on the product of NIPPON CHEMI-CON CORPORATION to refer to it as well as this brochure prior to the order of the products. Some specific notes on use of the ordered product may be described in the specifications.
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- The circuits described as examples in this catalog and the "delivery specifications" are featured in order to show the operations and usage of our products, however, this fact does not guarantee that the circuits are available to function in your equipment systems. We are not in any case responsible for any failures or damage caused by the use of information contained herein. You should examine our products, of which the characteristics are described in the "delivery specifications" and other documents, and determine whether or not our products suit your requirements according to the specifications of your equipment systems. Therefore, you bear final responsibility regarding the use of our products.  
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- We reserve the right to discontinue production and delivery of products. We do not guarantee that all the products included in this catalog will be available in the future.  
The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products
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In addition, we have an established system with enhanced traceability, therefore we will limit the applicable lot items for any potential compensation.

[Part Numbering System](#)

[Part Numbering System \(Appendix\)](#)

[Standardization](#)

[Available Items by Manufacturing Locations](#)

[Environmental Measures](#)

[Technical Note](#)

[Precautions and Guidelines](#)

[Recommended Soldering Conditions](#)

[Taping, Lead-preforming, Terminal and Packaging Options](#)