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FEATURES

- Low leakage current, long life
- High Temperature
- Small size and low-resistance
- Temperature 85 ℃/85% Humidity
- RoHS Directive Compliant



• Scanners, Medical equipment, Main power, Back up power, UPS/Industrial, Wireless Alarms, Water and gas smart meters.

OPERATING TEMPERATURE RANGE

ullet -40 $^{\circ}$ C to +85 $^{\circ}$ C @5.5V Balanced, 5.0V Unbalanced

GENERAL SPECIFICATIONS

| Item | Performance | | | | | |
|-----------------------------------|--|--|--|--|--|--|
| Operating temperature | -40°C to +85°C | | | | | |
| Capacitance range | 0.47F to 50F | | | | | |
| Capacitance tolerance | -20%~+50%;-20%~+20% | | | | | |
| Rated voltage | 5.5 V | | | | | |
| Surge voltage | 5.7 V | | | | | |
| Tarana anata marahama atamiati an | Capacitance change: Within ±30% of initial measured value at +25°C | | | | | |
| Temperature characteristics | Internal resistance: Within ±200% of initial measured value at +25°C | | | | | |
| | After 85°C 1000 hours H:85% (at 5.0V) | | | | | |
| High temperature load time | Capacitance change: ±30% of initial rated value | | | | | |
| | Internal resistance: Within 3 times of initial specified value | | | | | |
| Projected cycle life | After 500,000 cycles: | | | | | |
| (From rated voltage to 1/2 rated | Capacitance change: Within ±30 % of initial rated value | | | | | |
| voltage at 25°C) | Internal resistance: Within 2 times of initial specified value | | | | | |
| | Relative humidity: 90%~95% /Duration of testing:240 hrs /Temperature:40±2°C | | | | | |
| Humidity characteristic | Capacitance change: Within ±30 % of initial rated value | | | | | |
| | Internal resistance: Within 2 times of initial specified value | | | | | |
| | Amplitude:1.5mm /Frequency:10~55Hz /Duration of testing:6 hrs | | | | | |
| Vibration resistance | Capacitance change: Within ±30 % of initial rated value | | | | | |
| | Internal resistance: Within 2 times of initial specified value | | | | | |
| Shelf life | After 2 years at 25°C without load, the capacitor shall meet the specified endurance limits. | | | | | |







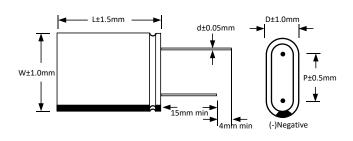




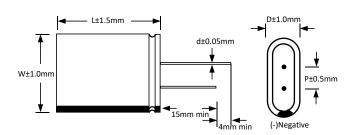
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DIMENSIONS

DA Type:



DB Type:

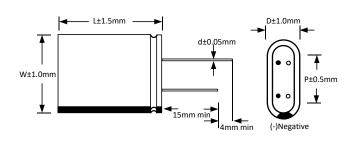


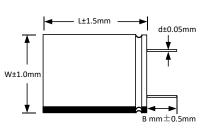
| Cell Dia | D | w | P(m | Φd | |
|----------|------|----|---------|---------|-----|
| CCII Dia | | | DA Type | DB Type | |
| Ф4.0 | 4 | 12 | 5.8 | 2.5 | 0.5 |
| Ф5.0 | 5 | 12 | 7.5 | 3.5 | 0.5 |
| Ф6.3 | 6.3 | 14 | 10.0 | 5.0 | 0.6 |
| Ф8.0 | 8 | 16 | 11.5 | 5.0 | 0.6 |
| Ф10.0 | 10 | 20 | 15.5 | 5.0 | 0.6 |
| Ф12.5 | 12.5 | 25 | 17.5 | 7.5 | 0.6 |
| Ф16.0 | 16 | 32 | 24.0 | 8.5 | 0.8 |
| Ф18.0 | 18 | 60 | 26.0 | 10.5 | 0.8 |

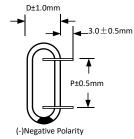
^{*}for version with bent leads

DC Type:

DZ Type: RADIAL BENT LEAD







| Cell Dia | D | w | | | Фф | |
|----------|------|-----|---------|---------|-------|-----|
| ocii bia | | ••• | DC Type | DZ Type | B(mm) | |
| Ф4.0 | 4 | 12 | / | 5.8 | 2.0 | 0.5 |
| Ф5.0 | 5 | 12 | / | 7.5 | 2.0 | 0.5 |
| Ф6.3 | 6.3 | 14 | / | 10.0 | 2.0 | 0.6 |
| Ф8.0 | 8 | 16 | 8.0 | 11.5 | 2.0 | 0.6 |
| Ф10.0 | 10 | 20 | 10.0 | 15.5 | 2.0 | 0.6 |
| Ф12.5 | 12.5 | 25 | 13.0 | 17.5 | 2.0 | 0.6 |
| Ф16.0 | 16 | 32 | 16.0 | 24.0 | 2.0 | 0.8 |
| Ф18.0 | 18 | 60 | 20.0 | 26.0 | 2.0 | 0.8 |

^{*}for version with bent leads









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STANDARD PRODUCTS

| | Rated | Rated | Size | Max.E | SR | Maximum | Maximum | Maximum Leakage | Power | Maximum | Energy |
|---|----------------|-------------|----------------|--------------------|---------------|-------------------------|-----------------|--------------------|-------------------|-----------------|--------------------|
| Part Number | Voltage (V) | Cap. (F) | ФWxDxL (mm) | ESRAC (1kHz/mΩ) | ESRDC (mΩ) | Endurance Current(A) | Peak Current(A) | Current | Density (W/Kg) | Energy (W.h) | Density (Wh/kg) |
| | | | 5.5V Seri | es-Connecte | ed Supe | rCapacitors M | odules(Mini | aturized) | | | |
| CHT-5R5L104R-TW | 5.5 | 0.1 | 10*5*12 | 900 | 1800 | 0.09 | 0.17 | 0.001 | 660 | 0.00042 | 0.38 |
| CHT-5R5L124R-TW | 5.5 | 0.12 | 9*4*12 | 2000 | 3600 | 0.09 | 0.17 | 0.001 | 693 | 0.00045 | 0.38 |
| CHT-5R5L224R-TWX | 5.5 | 0.22 | 10*5*14 | 800 | 1500 | 0.12 | 0.42 | 0.002 | 1117 | 0.00092 | 0.92 |
| CHT-5R5L224R-TW | 5.5 | 0.22 | 13*7*14 | 400 | 800 | 0.14 | 0.60 | 0.006 | 3025 | 0.00092 | 1.00 |
| CHT-5R5L474R-TWQ | 5.5 | 0.47 | 9*4*27 | 1100 | 1800 | 0.18 | 0.54 | 0.003 | 2046 | 0.0019 | 1.78 |
| CHT-5R5L504R-TWX | 5.5 | 0.5 | 13*7*14 | 400 | 1000 | 0.16 | 0.66 | 0.006 | 2499 | 0.0020 | 1.36 |
| CHT-5R5L155R-TWQ | 5.5 | 1.5 | 13*7*24 | 190 | 380 | 0.53 | 2.71 | 0.010 | 2880 | 0.0070 | 3.00 |
| CHT-5R5L205R-TW | 5.5 | 2.0 | 13*7*26 | 190 | 380 | 0.56 | 3.00 | 0.010 | 2400 | 0.0090 | 3.33 |
| 5.5V Series-Connected SuperCapacitors Modules | | | | | | | | | | | |
| CHT-5R5L474R-TW | 5.5 | 0.47 | 16*8*14 | 320 | 480 | 0.47 | 1.05 | 0.006 | 3601 | 0.0020 | 0.94 |
| CHT-5R5L504R-TW | 5.5 | 0.50 | 16*8*14 | 320 | 400 | 0.50 | 1.08 | 0.006 | 3601 | 0.0021 | 1.00 |
| CHT-5R5L105R-TW | 5.5 | 1.0 | 16*8*18 | 240 | 360 | 0.61 | 2.02 | 0.010 | 4001 | 0.0042 | 1.67 |
| CHT-5R5L155R-TW | 5.5 | 1.5 | 16*8*22 | 200 | 300 | 0.74 | 2.84 | 0.012 | 3974 | 0.0063 | 2.07 |
| CHT-5R5L255R-TWX | 5.5 | 2.5 | 16*8*27 | 180 | 270 | 0.87 | 4.10 | 0.015 | 3283 | 0.0105 | 2.56 |
| CHT-5R5L255R-TW | 5.5 | 2.5 | 20*10*22 | 150 | 225 | 0.97 | 4.40 | 0.015 | 3201 | 0.0105 | 2.08 |
| CHT-5R5L355R-TWX | 5.5 | 3.5 | 20*10*27 | 120 | 180 | 1.20 | 5.90 | 0.020 | 3492 | 0.0147 | 2.55 |
| CHT-5R5L355R-TW | 5.5 | 3.5 | 20*10*22 | 140 | 200 | 1.00 | 5.55 | 0.022 | 3429 | 0.0147 | 2.92 |
| CHT-5R5L505R-TW | 5.5 | 5.0 | 20*10*27 | 120 | 180 | 1.20 | 7.24 | 0.030 | 3492 | 0.0210 | 3.64 |
| CHT-5R5L505R-TWX | 5.5 | 5.0 | 25*13*22 | 90 | 135 | 1.42 | 8.21 | 0.030 | 3461 | 0.0210 | 2.70 |
| CHT-5R5L505R-TWQ | 5.5 | 5.0 | 20*10*32 | 90 | 150 | 1.43 | 7.71 | 0.030 | 3461 | 0.0210 | 3.18 |
| CHT-5R5L755R-TW | 5.5 | 7.5 | 25*13*27 | 95 | 115 | 1.30 | 9.00 | 0.060 | 2180 | 0.0336 | 3.63 |
| CHT-5R5L805R-TW | 5.5 | 8.0 | 25*13*27 | 80 | 120 | 1.66 | 10.86 | 0.040 | 3741 | 0.0315 | 3.90 |
| CHT-5R5L106R-TW | 5.5 | 10 | 25*13*32 | 70 | 105 | 1.93 | 13.41 | 0.055 | 3658 | 0.0420 | 4.45 |
| CHT-5R5L126R-TW | 5.5 | 12.5 | 32*16*32 | 50 | 75 | 2.41 | 17.74 | 0.068 | 2955 | 0.0525 | 3.21 |
| CHT-5R5L156R-TW | 5.5 | 15 | 32*16*32 | 40 | 60 | 2.92 | 21.71 | 0.075 | 3350 | 0.0630 | 3.49 |
| CHT-5R5L256R-TW | 5.5 | 25 | 36*18*42 | 32 | 48 | 3.96 | 31.25 | 0.105 | 2739 | 0.1050 | 3.80 |
| CHT-5R5L306R-TW | 5.5 | 30 | 36*18*42 | 30 | 42 | 4.34 | 33.00 | 0.120 | 2503 | 0.1260 | 4.30 |
| CHT-5R5L506R-TW | 5.5 | 50 | 36*18*62 | 26 | 39 | 5.30 | 46.61 | 0.240 | 2062 | 0.2101 | 4.65 |

Note: Adds passive balance. Balance options can be provided upon request. Customers can choose according to the application.



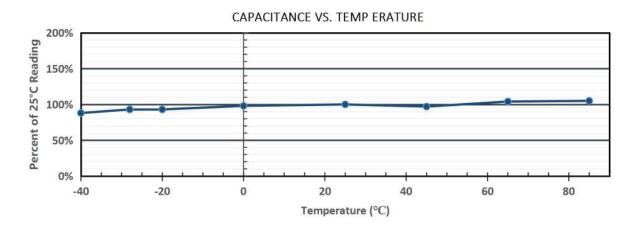


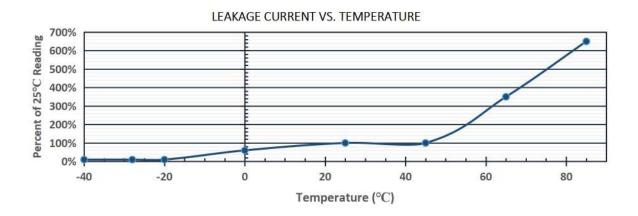


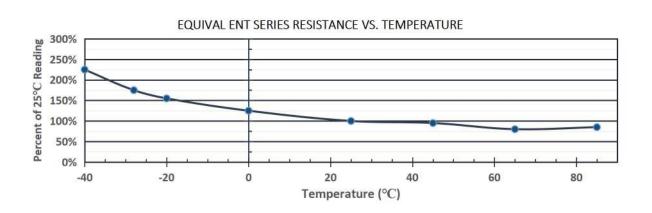


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QUALITY AND RELIABILITY













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LIFE TIME AND TEMPERATURE PERFORMANCE

The life of a Super Capacitor is impacted by a combination of operating voltage and the operating temperature according to the following equation :

$LS = L_R \times 2_X \times 2_Y$

Which is X= (Tm-Ta)/10 Y= (Vr-Va)/0.2

Ls = Expected life of the super capacitor in the application

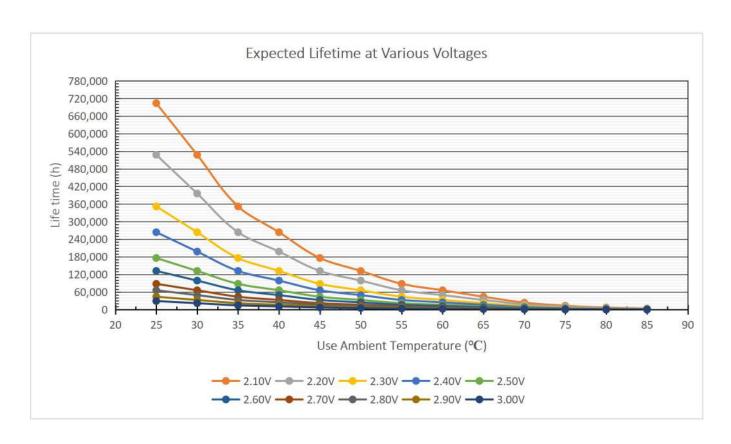
LR = Load life rating of the super capacitor

Tm = Max temperature rating of the super capacitor

Ta = Ambient temperature of the application

Vr = Rated voltage of the super capacitor

Va = Maximum applied voltage on the super capacitor in the application











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SAFETY RECOMMENDATIONS

WARNINGS

- \bullet To Avoid Short Circuit, after usage or test, SuperCapacitors voltage needs to discharge to $\leq 0.1 \text{V}$
- Do not Apply Overvoltage, Reverse Charge, Burn or Heat Higher than 150°C, explosion-proof valve may break open
- Do not Press, Damage or disassemble the SuperCapacitor, housing could heat to high temperature causing Burns
- If you observe Overheating or Burning Smell from the capacitor disconnect Power immediately, and do not touch

REGULATORY

- MSDS
- RoHS Compliant
- Reach Compliant

TRANSPORTATION

Not subjected to US DOT or IATA regulations UN3499, <10Wh, Non-Hazardous Goods International shipping description – "Electronic Products – Capacitor"

PRECAUTIONS FOR WELDING

When soldering supercapacitors to a PCB, the temperature & time that the body of the supercapacitor sees during soldering can have a negative effect on performance. We advise following these guidelines:

- Do not immerse the supercapacitors in solder. Only the leads should come in contact with the solder.
- Ensure that the body of the supercapacitor is never in contact with the molten solder, the PCB or other components during soldering.
- Excessive temperatures or excessive temperature cycling during soldering may cause the safety vent to burst or the case to shrink or crack, potentially damaging the PCB or other com-ponents, and significantly reduce the life of the capacitor.

HAND SOLDERING

Keep distance between the supercapacitor body and the tip of the soldering iron and the tip should never touch the body of the ca-pacitor. Contact between supercapacitor body and soldering iron will cause extensive damage to the supercapacitor, and change its electrical properties. It is recommended that the soldering iron temperature should be less than 350°C, and contact time should be limited to less than 4 seconds. Too much exposure to terminal heat during soldering can cause heat to transfer to the body of the supercapacitor, potentially damaging the electrical properties of the supercapacitor.

WAVE SOLDERING

Only use wave soldering on Radial type supercapacitors. The PCB should be preheated only from the bottom and for less than 60 seconds, with temperature at, or below, 100°C on the top side of the board for PCBs equal to or greater than 0.8 mm thick.

| Solder Temperature | Suggested Solder | Maximum Solder | | |
|--------------------|------------------|----------------|--|--|
| (ºC) | Time (s) | Time (s) | | |
| 220 | 7 | 9 | | |
| 240 | 7 | 9 | | |
| 250 | 5 | 7 | | |
| 260 | 3 | 5 | | |

REFLOW SOLDERING

Infrared or conveyor over reflow techniques can be used on these supercapacitors. Do not use a traditional reflow oven with-out clear rated reflow temperature for supercapacitors.