

The magical power inside **E.D.L.C**



**YEC**

開創未來的科技動力

**永隆科技股份有限公司**  
YEONG LONG TECHNOLOGIES CO., LTD.

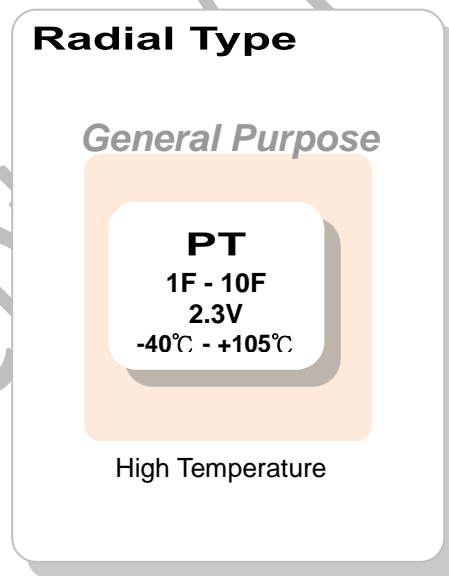
[www.yec.com.tw](http://www.yec.com.tw)



## Type List for Electrical Double Layer Capacitors

| Series | Feature | Application      | Cap.  | ESR/DC      | Volt.          | Temp. Range |                    |
|--------|---------|------------------|---|-------------|----------------|-------------|--------------------|
|        | PT      | High Temperature | <ul style="list-style-type: none"> <li>Short term UPS system</li> <li>Industrial and automation</li> <li>Telecom system</li> <li>Renewable energy systems</li> <li>Portable device</li> </ul> | 1 F to 10 F | 85 mΩ to 980mΩ | 2.3V        | -40 °C to + 105 °C |

## Series Chart for Electrical Double Layer Capacitors





**PRODUCT SPECIFICATIONS For POWER&ENERGY&CURRENT**

$$* E_{Store} (Wh) = \frac{1/2CV_R^2}{3600}$$

$$* E_{Specific} (Wh/kg) = \frac{1/2CV_R^2}{3600 \times mass}$$

$$* E_{Specific} (Wh/l) = \frac{1/2CV_R^2}{3600 \times volume}$$

$$* P_d (W/kg) = \frac{0.12V_R^2}{ESR(DC) \times mass}$$

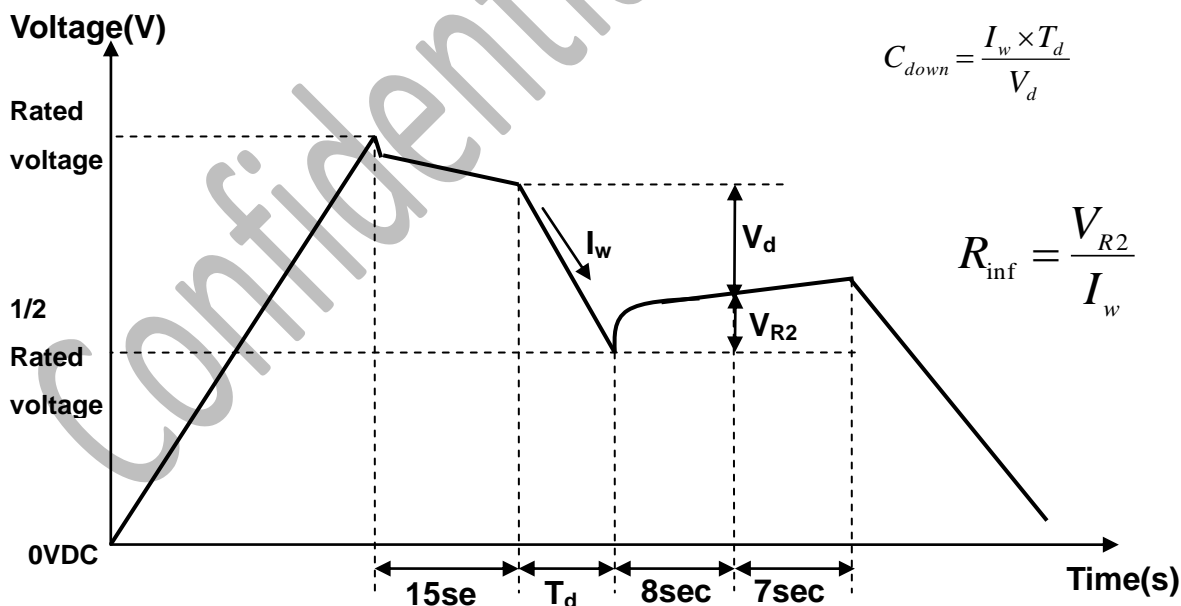
$$* P_{max} (W/kg) = \frac{V_R^2}{4 \times ESR(DC) \times mass}$$

$$* I_{Max Peak Current} = \frac{1/2V_R}{1/C + ESR(DC)}$$

$$* I_{SC} = \frac{V_R}{ESR(DC)}$$

**Capacitance & DC Resistance measuring method**

- Charge the Ultracapacitor to rated voltage at a constant current.
- Float for 15 seconds without charge current.
- Discharge the unit to 1/2 rated voltage at a constant current.
- Rest for 8 seconds.
- Rest for 7 seconds.
- Discharge to 0.01VDC.



For charge and discharge current, please refer to the recommendation suggested by YEC.





## Power Type

## PT Series

### Features

- Quick charge & discharge
- Environmentally friendly products
- Extended temperature to 105°C
- Humidity resistance @ RH90%

### Certification

- RoHS & REACH compliant

### Recommended Applications

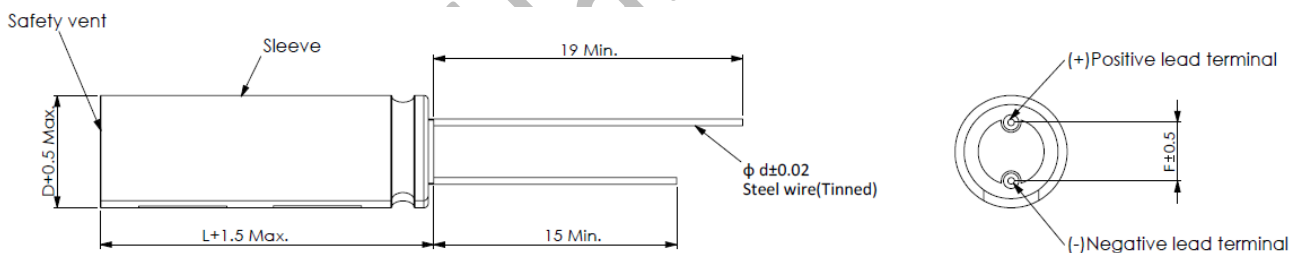
- Pulse power demand
- High temperature demand



### Specification

| Items                    | Characteristics  |  |
|--------------------------|--|--|
| Rated Voltage            | 2.3 V  | 2.5 V  |
| Operating Temp. (Charge) | -40°C ~ 105°C  | -40°C ~ 85°C   |
| Surge Voltage            | 2.7 V  |  |
| Capacitance Tolerance    | -20% ~ +20% of Rated Capacitance                                       |  |
| Storage Temp.            | -40 °C to 105 °C   | -40 °C to 85 °C  |
| Test                     | Endurance  | Standards  |
| High Temp. Life          | 1000hrs @ Rated Voltage & Max. Operating Temp.                         | Must to meet standards as below after test:<br>CAP decline < 30% of Initial measurement.<br>ESR < 2 times specification value. |
| Shelf Life (Non-Charge)  | 1000hrs @ Max. Operating Temp.   |  |
| Life time                | 10 Years @ Rated Voltage & 25°C  |  |
| Cycle Life               | 500,000 Cycles @ 25°C<br>(Operating Between 50%~100% Of Rated Voltage) |  |

### Dimensions



### Size List

| Size   | D   | L  | d   | F   |
|--------|-----|----|-----|-----|
| 6.3X15 | 6.3 | 15 | 0.5 | 2.5 |
| 8X12   | 8   | 12 | 0.6 | 3.5 |
| 8X16   | 8   | 16 | 0.6 | 3.5 |
| 8X20   | 8   | 20 | 0.6 | 3.5 |
| 10X20  | 10  | 20 | 0.6 | 5.0 |
| 10X30  | 10  | 30 | 0.6 | 5.0 |



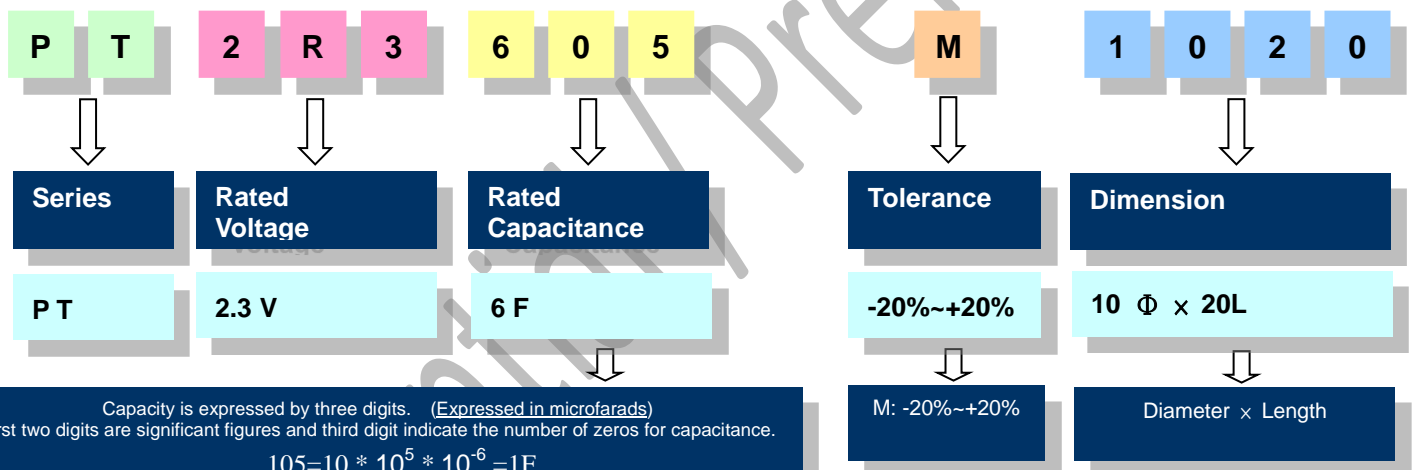


### Standard Ratings

| Rated Cap (F) | Size (mm) | Max. Internal Resistance (mΩ) |     | Max. LC (mA) | Stored Energy (Wh) | Specific Energy |         | Specific Power |           | Max. Peak Current (A) | Max. continuous current (A) | ISC (A) | Max. Weight (g) | Part Number   |
|---------------|-----------|-------------------------------|-----|--------------|--------------------|-----------------|---------|----------------|-----------|-----------------------|-----------------------------|---------|-----------------|---------------|
|               |           | AC (1kHz, 1V)                 | DC  |              |                    | 72hrs, 25°C     | (Wh/kg) | (Wh/l)         | Pd (W/kg) |                       |                             |         |                 |               |
| 1             | 8X12      | 350                           | 980 | 0.008        | 0.0007             | 0.6679          | 1.2181  | 589            | 1227      | 0.581                 | 0.10                        | 2.35    | 1.1             | PT2R3105M0812 |
| 1.2           | 6.3X15    | 330                           | 950 | 0.010        | 0.0009             | 1.0622          | 1.8856  | 805            | 1677      | 0.645                 | 0.12                        | 2.42    | 0.8             | PT2R3125M0615 |
| 2             | 8X16      | 180                           | 550 | 0.016        | 0.0015             | 1.1048          | 1.8271  | 868            | 1808      | 1.095                 | 0.20                        | 4.18    | 1.3             | PT2R3205M0816 |
| 3.3           | 8X20      | 150                           | 350 | 0.022        | 0.0024             | 1.5249          | 2.5387  | 1141           | 2376      | 1.761                 | 0.33                        | 6.57    | 1.6             | PT2R3335M0820 |
| 4             | 10X20     | 140                           | 340 | 0.023        | 0.0029             | 1.2947          | 1.8710  | 822            | 1714      | 1.949                 | 0.40                        | 6.76    | 2.3             | PT2R3405M1020 |
| 6             | 10X20     | 120                           | 200 | 0.024        | 0.0044             | 1.7633          | 2.8064  | 1270           | 2645      | 3.136                 | 0.60                        | 11.50   | 2.5             | PT2R3605M1020 |
| 10            | 10X30     | 60                            | 85  | 0.048        | 0.0073             | 2.0409          | 3.1183  | 2075           | 4322      | 6.216                 | 1.00                        | 27.06   | 3.5             | PT2R3106M1030 |

Note. If standard product does not meet your need, please contact us to enquire for customized one.

### Part Numbering System



Capacity is expressed by three digits. (Expressed in microfarads)  
 First two digits are significant figures and third digit indicate the number of zeros for capacitance.

$$105 = 10 * 10^5 * 10^{-6} = 1F$$

$$106 = 10 * 10^6 * 10^{-6} = 10F$$

$$107 = 10 * 10^7 * 10^{-6} = 100F$$
