

**CBEL:** With Mounting flange**FEATURES:**

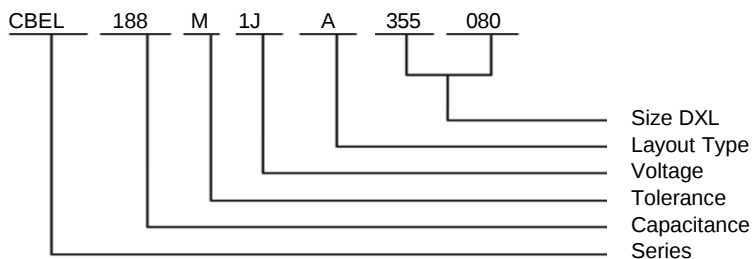
- Tantalum case, Hermetically Sealed, Cylindrical, Radial-lead, Heteropolarity, with mounting flange.
- Commingled by Electrolytic Tantalum Capacitor and Electrochemical Capacitor, Small size, Super Capacitance
- Stable in Electrical Performances, High Reliability, Long life-span, Maximum in the Density of Capacitance and Energy
- Built-in as battery in Energy-converted-circuit & Power-pulsed-circuit, functioned as filtering, storage energy, time-delay circuit.

**SPECIFICATIONS**

|                       |                                                          |
|-----------------------|----------------------------------------------------------|
| Operating Temperature | -55°C to +125°C (to +125°C, with rated voltage derating) |
| Storage Temperature   | -62°C ~ +130°C                                           |
| Capacitance Tolerance | K: (±10%), M: (±20%)                                     |

**Electrical Characteristics**

| Rated Voltage (V) | Category Voltage (V) | Surge Voltage (V) | Cap. (μF) | tgδ (%) | ESR (Ω) 1kHz | DCL (μA) |             | Impedance at (Ω) 100Hz | Capacitance Change at (%) |      | Dimensions |
|-------------------|----------------------|-------------------|-----------|---------|--------------|----------|-------------|------------------------|---------------------------|------|------------|
|                   |                      |                   |           |         |              | 25°C     | 85°C, 125°C |                        | -55°C                     | 85°C | DxH (mm)   |
| 10 1A             | 6                    | 11                | 50000     | 180     | 0.050        | 150      | 900         | 1.0                    | -75                       | +140 | 35.5x8     |
|                   |                      |                   | 100000    | 180     | 0.035        | 300      | 1800        |                        | -80                       | +160 | 35.5x12    |
|                   |                      |                   | 150000    | 180     | 0.025        | 300      | 1800        |                        | -80                       | +160 | 35.5x16    |
|                   |                      |                   | 200000    | 190     | 0.025        | 400      | 1800        |                        | -80                       | +160 | 35.5x20    |
|                   |                      |                   | 230000    | 190     | 0.025        | 400      | 1800        |                        | -80                       | +160 | 35.5x24    |
| 16 1C             | 9.5                  | 17.6              | 30000     | 160     | 0.050        | 150      | 900         | 1.0                    | -70                       | +140 | 35.5x8     |
|                   |                      |                   | 60000     | 165     | 0.035        | 300      | 1800        |                        | -80                       | +160 | 35.5x12    |
|                   |                      |                   | 90000     | 165     | 0.025        | 300      | 1800        |                        | -80                       | +160 | 35.5x16    |
|                   |                      |                   | 120000    | 170     | 0.025        | 400      | 1800        |                        | -80                       | +160 | 35.5x20    |
|                   |                      |                   | 140000    | 170     | 0.025        | 400      | 1800        |                        | -80                       | +160 | 35.5x24    |
| 25 1E             | 15                   | 27.5              | 18000     | 120     | 0.050        | 150      | 900         | 1.0                    | -65                       | +120 | 35.5x8     |
|                   |                      |                   | 36000     | 130     | 0.040        | 300      | 1800        |                        | -75                       | +160 | 35.5x12    |
|                   |                      |                   | 54000     | 130     | 0.035        | 300      | 1800        |                        | -75                       | +160 | 35.5x16    |
|                   |                      |                   | 70000     | 140     | 0.025        | 400      | 1800        |                        | -75                       | +160 | 35.5x20    |
|                   |                      |                   | 86000     | 140     | 0.025        | 400      | 1800        |                        | -75                       | +160 | 35.5x24    |
| 35 1V             | 20                   | 38.5              | 12000     | 90      | 0.065        | 150      | 900         | 1.0                    | -50                       | +120 | 35.5x8     |
|                   |                      |                   | 24000     | 95      | 0.040        | 300      | 1800        |                        | -70                       | +160 | 35.5x12    |
|                   |                      |                   | 36000     | 95      | 0.035        | 300      | 1800        |                        | -70                       | +160 | 35.5x16    |
|                   |                      |                   | 50000     | 100     | 0.025        | 400      | 1800        |                        | -70                       | +160 | 35.5x20    |
|                   |                      |                   | 60000     | 100     | 0.025        | 400      | 1800        |                        | -70                       | +160 | 35.5x24    |
| 50 1H             | 30                   | 55                | 8000      | 65      | 0.070        | 170      | 1000        | 1.2                    | -40                       | +120 | 35.5x8     |
|                   |                      |                   | 16000     | 70      | 0.040        | 400      | 2400        |                        | -55                       | +135 | 35.5x12    |
|                   |                      |                   | 24000     | 70      | 0.035        | 400      | 2400        |                        | -55                       | +135 | 35.5x16    |
|                   |                      |                   | 30000     | 75      | 0.025        | 400      | 1600        |                        | -60                       | +160 | 35.5x20    |
|                   |                      |                   | 32000     | 75      | 0.025        | 400      | 1600        |                        | -60                       | +160 | 35.5x20    |
|                   |                      |                   | 33000     | 75      | 0.025        | 400      | 1600        |                        | -60                       | +160 | 35.5x24    |

**PART NUMBER EXAMPLE**

## Electrical Characteristics

| Rated Voltage (V) | Category Voltage (V) | Surge Voltage (V) | Cap. (μF) | tgδ (%) | ESR (Ω) 1kHz | DCL (μA) |             | Impedance at (Ω) 100Hz | Capacitance Change at (%) |      | Dimensions |
|-------------------|----------------------|-------------------|-----------|---------|--------------|----------|-------------|------------------------|---------------------------|------|------------|
|                   |                      |                   |           |         |              | 25°C     | 85°C, 125°C |                        | -55°C                     | 85°C | DxH (mm)   |
| 63 1J             | 38                   | 70                | 1800      | 40      | 0.200        | 126      | 1000        | 1.4                    | -20                       | +60  | 35.5x8     |
|                   |                      |                   | 4000      | 45      | 0.100        | 170      | 1000        |                        | -30                       | +80  | 35.5x8     |
|                   |                      |                   | 8000      | 50      | 0.040        | 400      | 2400        |                        | -45                       | +90  | 35.5x12    |
|                   |                      |                   | 12000     | 50      | 0.035        | 400      | 2400        |                        | -45                       | +90  | 35.5x16    |
|                   |                      |                   | 16000     | 55      | 0.035        | 400      | 1600        |                        | -50                       | +100 | 35.5x20    |
|                   |                      |                   | 18000     | 55      | 0.035        | 400      | 1600        |                        | -50                       | +100 | 35.5x24    |
| 80 1K             | 48                   | 88                | 1600      | 20      | 0.150        | 100      | 1000        | 1.6                    | -20                       | +60  | 35.5x8     |
|                   |                      |                   | 2800      | 40      | 0.100        | 200      | 1200        |                        | -30                       | +80  | 35.5x8     |
|                   |                      |                   | 5600      | 40      | 0.060        | 500      | 3000        |                        | -40                       | +90  | 35.5x12    |
|                   |                      |                   | 8200      | 40      | 0.040        | 500      | 3000        |                        | -40                       | +90  | 35.5x16    |
|                   |                      |                   | 11000     | 45      | 0.035        | 500      | 2500        |                        | -40                       | +100 | 35.5x20    |
|                   |                      |                   | 13000     | 45      | 0.035        | 500      | 2500        |                        | -40                       | +100 | 35.5x24    |
| 100 2A            | 60                   | 110               | 1200      | 35      | 0.125        | 200      | 1200        | 1.8                    | -25                       | +60  | 35.5x8     |
|                   |                      |                   | 2400      | 35      | 0.080        | 500      | 3000        |                        | -30                       | +80  | 35.5x12    |
|                   |                      |                   | 3600      | 35      | 0.050        | 500      | 3000        |                        | -30                       | +80  | 35.5x16    |
|                   |                      |                   | 4800      | 40      | 0.035        | 500      | 2500        |                        | -30                       | +80  | 35.5x20    |
|                   |                      |                   | 6000      | 40      | 0.035        | 500      | 2500        |                        | -30                       | +80  | 35.5x20    |
| 110 2F            | 66                   | 121               | 580       | 35      | 0.200        | 200      | 1200        | 2.0                    | -20                       | +50  | 35.5x8     |
|                   |                      |                   | 1200      | 35      | 0.080        | 500      | 3000        |                        | -25                       | +60  | 35.5x12    |
|                   |                      |                   | 1800      | 35      | 0.075        | 500      | 3000        |                        | -25                       | +60  | 35.5x16    |
| 125 2Q            | 75                   | 138               | 560       | 35      | 0.200        | 200      | 1200        | 2.4                    | -15                       | +50  | 35.5x8     |
|                   |                      |                   | 1100      | 30      | 0.080        | 500      | 3000        |                        | -25                       | +50  | 35.5x12    |
|                   |                      |                   | 1600      | 30      | 0.075        | 500      | 3000        |                        | -25                       | +50  | 35.5x16    |
|                   |                      |                   | 2200      | 35      | 0.050        | 500      | 2500        |                        | -25                       | +50  | 35.5x20    |
|                   |                      |                   | 2800      | 35      | 0.050        | 500      | 2500        |                        | -20                       | +40  | 35.5x24    |

## Electrical Characteristics

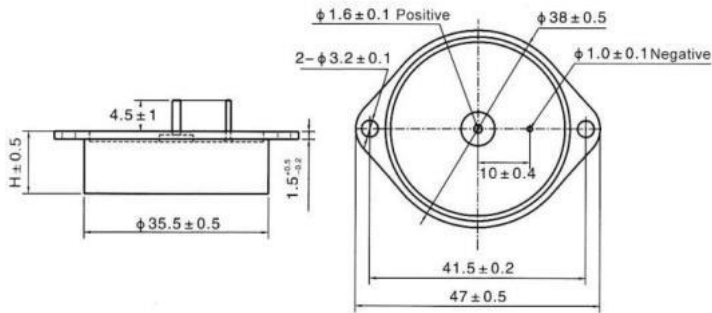
| Rated Voltage (V) | Category Voltage (V) | Surge Voltage (V) | Cap. (μF) | tgδ (%) | ESR (Ω) 1kHz | DCL (μA) |             | Impedance at (Ω) 100Hz | Capacitance Change at (%) |      | Dimensions |
|-------------------|----------------------|-------------------|-----------|---------|--------------|----------|-------------|------------------------|---------------------------|------|------------|
|                   |                      |                   |           |         |              | 25°C     | 85°C, 125°C |                        | -55°C                     | 85°C | DxH (mm)   |
| 10                | 6                    | 11                | 30000     | 120     | 0.4          | 200      | 1600        | 8                      | -70                       | +140 | 19x12      |
| 16                | 9.5                  | 17.6              | 20000     | 120     | 0.4          | 200      | 1600        | 8                      | -70                       | +140 | 19x12      |
| 2                 | 15                   | 27.5              | 12000     | 90      | 0.4          | 200      | 1600        | 8                      | -60                       | +140 | 19x12      |
| 30                | 18                   | 33                | 10000     | 85      | 0.45         | 200      | 1600        | 8                      | -60                       | +120 | 19x12      |
| 35                | 20                   | 38.5              | 8000      | 60      | 0.45         | 150      | 1200        | 8                      | -55                       | +100 | 19x12      |
| 50                | 30                   | 55                | 6000      | 50      | 0.45         | 200      | 1600        | 9.6                    | -55                       | +90  | 19x12      |
| 63                | 38                   | 70                | 3300      | 40      | 0.55         | 200      | 1600        | 11.2                   | -30                       | +70  | 19x12      |
| 75                | 48                   | 82.5              | 2200      | 35      | 0.65         | 160      | 1300        | 12.8                   | -25                       | +70  | 19x12      |
| 100               | 60                   | 110               | 1000      | 35      | 0.85         | 100      | 800         | 14.4                   | -20                       | +30  | 19x12      |
| 125               | 75                   | 138               | 600       | 30      | 1.5          | 75       | 600         | 19.2                   | -20                       | +30  | 19x12      |

## CBEL: With Mounting flange

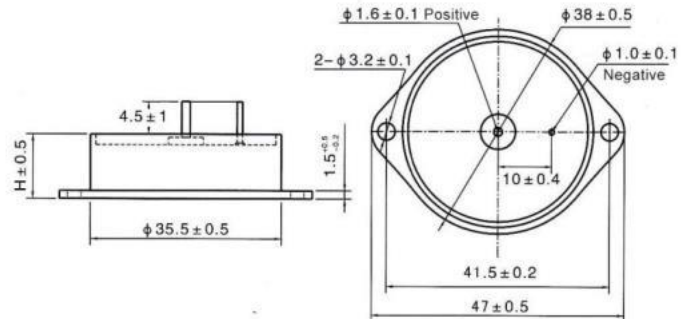


Dimensions (unit: mm)

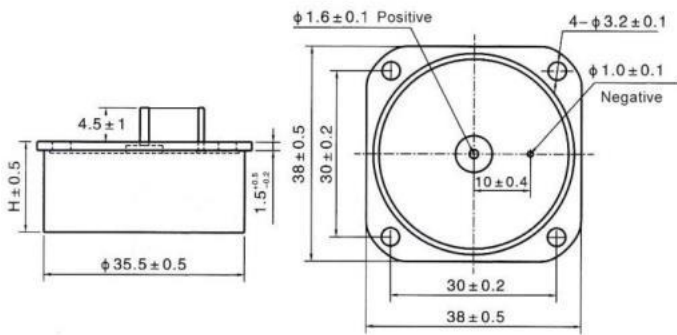
A Type



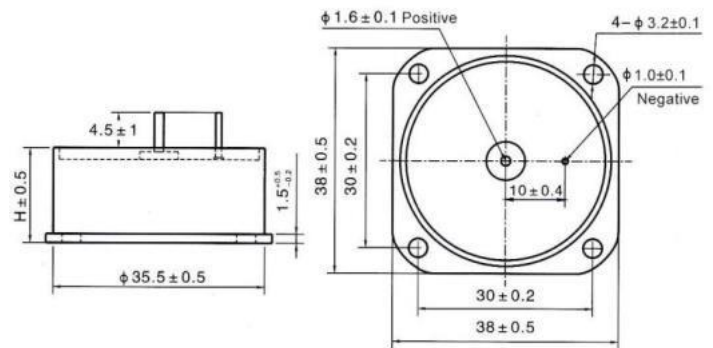
B Type



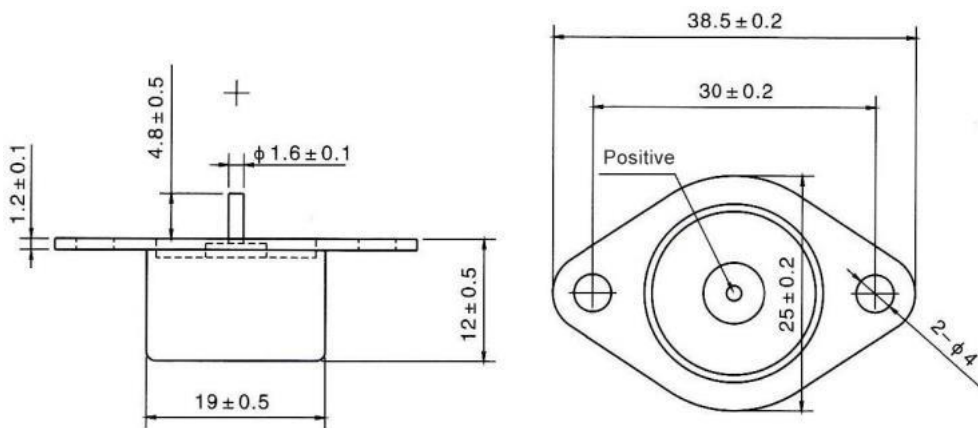
C Type



D Type



E Type



### Note:

1. Please do not use multimeter through the measuring procedures (may cause irreversible damage and lead to discard).
2. Capacitance and DF measured at 100Hz,  $U_+ = 2.20_{-1.0}^0 V$ ,  $U_- = 1.0_{-0.5}^0 V$  Test only applied in series equivalent circuit.
3. Voltage derating is applied at  $+125^\circ C$ . (The DCL parameter should be read after 5 minutes when it connected to the circuit).
4. Special size and demand could consult with us.