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**MCCB Series Epoxy-Coated Solid
Electrolytic Tantalum Capacitors, Resin Dipped Type**

multicomp PRO

**RoHS
Compliant**



Features

- Lead-Free
- Specially designed of general purpose
- Highly reliable resin dipped type
- Excellent frequency and temperature characteristics
- Non-flammable epoxy resin

Specifications

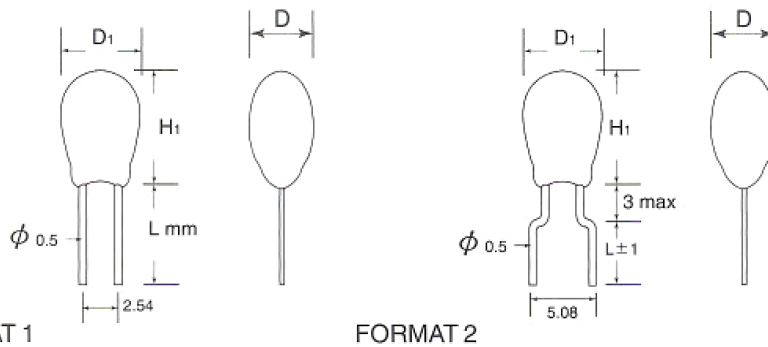
| Item | Performance Characteristics | | | | |
|---|--|-------------------------|---|-------------|--------|
| Operating Temperature Range | -55°C to +125°C (>85°C with rated voltage derating) | | | | |
| Rated Working Voltage Range | 6.3V DC to 50V DC | | | | |
| Nominal Capacitance Range | 0.1 to 330µF | | | | |
| Capacitance Tolerance | ±20% (±10% is available) (120Hz, +20°C) | | | | |
| Leakage Current | Not more than 0.01CV [µA] or 0.5µA whichever is greater | | | | |
| tan δ (120Hz, +20°C) | Working voltage | 6.3 to 50V | | | |
| | Capacitance | ≤1µF | 1.5 to 6.8µF | 10 to 68µF | ≥100µF |
| | tan δ max | 0.04 | 0.06 | 0.08 | 0.1 |
| Characteristics at High and Low Temperature | -55°C | Capacitance change | ±12% of initial measured value at +20°C | | |
| | +105°C | Leakage current | ≤10% of initial measured value | | |
| | | Capacitance change | ±12% of initial measured value at +20°C | | |
| Moisture Resistance | Test conditions | | | | |
| | Relative humidity : 90 to 95% without load Ambient temperature : +40°C Duration : 500 hours Post test requirements at+ 20°C Leakage current : ≤0.012CV or 0.75 [µF], whichever is greater Capacitance change : ±10% of initial measured value tan δ : ≤150% of Initial specified value | | | | |
| Endurance | Test conditions | | | | |
| | Conditions | | Derating (for 10 to 50V only) | Rating | |
| | Item | | | | |
| | Duration | | 1,000 hours | 1,000 hours | |
| | Ambient temperature | | +105°C | +85°C | |
| Applied voltage | | Derated working voltage | Rated working voltage | | |
| Source impedance | | 1Ω/V | 1Ω/V | | |

MCCB Series Epoxy-Coated Solid Electrolytic Tantalum Capacitors, Resin Dipped Type



| Item | Performance Characteristics | |
|---------------------|---|--|
| Endurance | Derating voltage +105°C for 10 to 50V working | |
| | Working voltage [V] DC | 10 16 25 35 50 |
| | Derating voltage [V] DC | 6.3 10 16 23 33 |
| | Post test requirements at +20°C | |
| Shelf Life | Leakage current | : ≤ 0.01% CV or 00625[1-' A], whichever is greater |
| | Capacitance change | : ±10% of initial measured value |
| | tan δ | : ≤ Initial specified value |
| | Test conditions | Post test requirements at +20°C |
| | Duration | : 1,000 hours |
| Ambient temperature | : +85°C | |
| Applied voltage | : (none) | |
| | | Same limits for "Endurance". |

Tantalum Capacitor Dipped Type Outline Drawings



| Case Size | A | B | C | D | E | F |
|-------------|-----|-----|-----|-----|-----|------|
| Formats 1/2 | | | | | | |
| H1 max | 7 | 8 | 9.5 | 11 | 13 | 16.5 |
| D1 max | 4.5 | 5 | 5.5 | 6.5 | 8.5 | 9.5 |
| Dmax | 4.2 | 4.7 | 5.5 | 6.5 | 8.5 | 9.5 |

Dimensions : Millimetres

| | | |
|-----------------|-------|--------|
| Wire Length (L) | 5.7±1 | >12.14 |
| Code | A | B/C |



Rated Voltage, Capacitance of Capacitors

| VR (V) | 6.3 | 10 | 16 | 25 | 35 | 50 |
|-------------------|-----------|----|----|----|----|----|
| Code | OJ | 1A | 1C | 1E | 1V | 1H |
| Capacitance (IJF) | Case Size | | | | | |
| 0.1 (104) | | | | | A | A |
| 0.15 (154) | | | | | A | A |
| 0.22 (224) | | | | | A | A |
| 0.33 (334) | | | | | A | A |
| 0.47 (474) | | | | | A | A |
| 0.68 (684) | | | | | A | A |
| 1 (105) | | | | A | A | B |
| 1.5 (155) | | | A | A | A | C |
| 2.2 (225) | | A | A | A | B | C |
| 3.3 (335) | A | A | A | B | B | D |
| 4.7 (475) | A | A | B | B | C | D |
| 6.8 (685) | A | B | B | C | D | E |
| 10 (106) | B | B | B | C | D | E |
| 15 (156) | B | C | C | D | E | F |
| 22 (226) | C | C | C | D | E | F |
| 33 (336) | C | D | D | E | F | F |
| 47 (476) | D | D | D | E | F | |
| 68 (686) | D | D | E | F | F | |
| 100 (107) | E | E | E | F | | |
| 150 (157) | E | E | F | | | |
| 220 (227) | E | F | F | | | |
| 330 (337) | F | F | | | | |
| 470 (477) | F | F | | | | |
| 680 (687) | F | | | | | |

Leads & Solderability

Tinned radial leads, \varnothing :0.5mm.

Standard lead spacing: 2.54 \pm 0.5, 5.08 \pm 0.5mm

Solderability:

- Recommended soldering bath

temperature: 260°C

-Time of immersion:3s

The tin should cover 95% of wire surface.

Permissible pull test: 10N.

**MCCB Series Epoxy-Coated Solid
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Ratings and Part Number Reference

| Part Number | Case Size | Capacitance F | DCL (µA) Max. | DF % Max. | ESR max. (Q) @ 100kHz |
|---|-----------|---------------|---------------|-----------|--------------------------|
| 6.3 volt @ 85°C (4 volt, @ 125°C) | | | | | |
| MCCB 0J335##A## | A | 3.3 | 0.5 | 6 | 13 |
| MCCB 0J475##A## | A | 4.7 | 0.5 | 6 | 10 |
| MCCB 0J685##A## | A | 6.8 | 0.5 | 6 | 8 |
| MCCB 0J106##8## | B | 10 | 0.6 | 8 | 6 |
| MCCB 0J156##8## | B | 15 | 0.9 | 8 | 5 |
| MCCB 0J226##C## | C | 22 | 1.4 | 8 | 3.7 |
| MCCB 0J336##C## | C | 33 | 2.1 | 8 | 3 |
| MCCB 0J476##D## | D | 47 | 3 | 8 | 2 |
| MCCB 0J686##D## | D | 68 | 4.3 | 8 | 1.8 |
| MCCB 0J107##E## | E | 100 | 6.3 | 10 | 1.6 |
| MCCB 0J157##E## | E | 150 | 9.5 | 10 | 0.9 |
| MCCB 0J227##E## | E | 220 | 13.9 | 10 | 0.9 |
| MCCB 0J337##F## | F | 330 | 20.8 | 10 | 0.7 |
| MCCB 0J477##F## | F | 470 | 29.6 | 10 | 0.6 |
| MCCB 0J687##F## | F | 680 | 42.8 | 12 | 0.5 |
| 10 volt @ 85°C (6.3 volt, @ 125°C) | | | | | |
| MCCB 1A225##A## | A | 2.2 | 0.5 | 6 | 13 |
| MCCB 1A335##A## | A | 3.3 | 0.5 | 6 | 10 |
| MCCB 1A475##A## | A | 4.7 | 0.5 | 6 | 8 |
| MCCB 1A685##B## | B | 6.8 | 0.7 | 6 | 6 |
| MCCB 1A106##B## | B | 10 | 1 | 8 | 5 |
| MCCB 1A156##C## | C | 15 | 1.5 | 8 | 3.7 |
| MCCB 1A226##C## | C | 22 | 2.2 | 8 | 2.7 |
| MCCB 1A336##D## | D | 33 | 3.3 | 8 | 2.1 |
| MCCB 1A476##D## | D | 47 | 4.7 | 8 | 1.7 |
| MCCB 1A686##D## | D | 68 | 6.8 | 8 | 1.3 |
| MCCB 1A107##E## | E | 100 | 10 | 10 | 1 |
| MCCB 1A157##E## | E | 150 | 15 | 10 | 0.8 |
| MCCB 1A227##F## | F | 220 | 22 | 10 | 0.8 |
| MCCB 1A337##F## | F | 330 | 33 | 10 | 0.6 |
| MCCB 1A477##F## | F | 470 | 47 | 10 | 0.5 |
| 16 volt @ 85°C (10 volt, @ 125°C) | | | | | |
| MCCB 1C155##A## | A | 1.5 | 0.5 | 6 | 10 |
| MCCB 1C225##A## | A | 2.2 | 0.5 | 6 | 8 |
| MCCB 1C335##A## | A | 3.3 | 0.5 | 6 | 6 |
| MCCB 1C475##8## | B | 4.7 | 0.8 | 6 | 5 |
| MCCB 1C685##B## | B | 6.8 | 1.1 | 6 | 4 |
| MCCB 1C106##B## | B | 10 | 1.6 | 8 | 3.2 |
| MCCB 1C156##C## | C | 15 | 2.4 | 8 | 2.5 |
| MCCB 1C226##C## | C | 22 | 3.5 | 8 | 2 |
| MCCB 1C336##D## | D | 33 | 5.3 | 8 | 1.6 |
| MCCB 1C476##D## | D | 47 | 7.5 | 8 | 1.3 |
| MCCB 1C686##E## | E | 68 | 10.9 | 8 | 1 |
| MCCB 1C107##E## | E | 100 | 16 | 10 | 0.8 |
| MCCB 1C157##F## | F | 150 | 24 | 10 | 0.6 |
| MCCB 1C227##F## | F | 220 | 35.2 | 10 | 0.5 |

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**MCCB Series Epoxy-Coated Solid
Electrolytic Tantalum Capacitors, Resin Dipped Type**



| Part Number | Case Size | Capacitance F | DCL (µA) Max. | DF % Max. | ESR max. (Q) @ 100kHz |
|--|-----------|---------------|---------------|-----------|--------------------------|
| 25 volt @ 85°C (16 volt, @125°C) | | | | | |
| MCCB 1E105###A## | A | 1 | 0.5 | 4 | 10 |
| MCCB 1E155###A## | A | 1.5 | 0.5 | 6 | 8 |
| MCCB 1E225###A## | A | 2.2 | 0.6 | 6 | 6 |
| MCCB 1E335###B## | B | 3.3 | 0.8 | 6 | 5 |
| MCCB 1E475###B## | B | 4.7 | 1.2 | 6 | 4 |
| MCCB 1E685###C## | C | 6.8 | 1.7 | 6 | 3.1 |
| MCCB 1E106###C## | C | 10 | 2.5 | 8 | 2.5 |
| MCCB 1E156###D## | D | 15 | 3.8 | 8 | 2 |
| MCCB 1E226###D## | D | 22 | 5.5 | 8 | 1.5 |
| MCCB 1E336###E## | E | 33 | 8.3 | 8 | 1.2 |
| MCCB 1E476###E## | E | 47 | 11.8 | 8 | 1 |
| MCCB 1E686###F## | F | 68 | 17 | 8 | 0.8 |
| MCCB 1E107###F## | F | 100 | 25 | 10 | 0.8 |
| 35 volt @ 85°C (23 volt, @125°C) | | | | | |
| MCCB 1V104###A## | A | 0.1 | 0.5 | 4 | 26 |
| MCCB 1V154###A## | A | 0.15 | 0.5 | 4 | 21 |
| MCCB 1V224###A## | A | 0.22 | 0.5 | 4 | 17 |
| MCCB 1V334###A## | A | 0.33 | 0.5 | 4 | 15 |
| MCCB 1V474###A## | A | 0.47 | 0.5 | 4 | 13 |
| MCCB 1V684###A## | A | 0.68 | 0.5 | 4 | 10 |
| MCCB 1V105###A## | A | 1 | 0.5 | 4 | 8 |
| MCCB 1V155###A## | A | 1.5 | 0.5 | 6 | 6 |
| MCCB 1V225###B## | B | 2.2 | 0.8 | 6 | 5 |
| MCCB 1V335###B## | B | 3.3 | 1.2 | 6 | 4 |
| MCCB 1V475###C## | C | 4.7 | 1.6 | 6 | 3 |
| MCCB 1V685###D## | D | 6.8 | 2.4 | 6 | 2.5 |
| MCCB 1V106###D## | D | 10 | 3.5 | 8 | 2 |
| MCCB 1V156###E## | E | 15 | 5.3 | 8 | 1.6 |
| MCCB 1V226###E## | E | 22 | 7.7 | 8 | 1.3 |
| MCCB 1V336###F## | F | 33 | 11.6 | 8 | 1 |
| MCCB 1V476###F## | F | 47 | 16.5 | 8 | 0.8 |
| MCCB 1V686###F## | F | 68 | 23.8 | 8 | 0.7 |
| 50 volt @ 85°C (33 volt, @ 125°C) | | | | | |
| MCCB 1H104###A## | A | 0.1 | 0.5 | 4 | 26 |
| MCCB 1H154###A## | A | 0.15 | 0.5 | 4 | 21 |
| MCCB 1H224###A## | A | 0.22 | 0.5 | 4 | 17 |
| MCCB 1H334###A## | A | 0.33 | 0.5 | 4 | 15 |
| MCCB 1H474###A## | A | 0.47 | 0.5 | 4 | 13 |
| MCCB 1H684###A## | A | 0.68 | 0.5 | 4 | 10 |
| MCCB 1H105###B## | B | 1 | 0.5 | 4 | 8 |
| MCCB 1H155###C## | C | 1.5 | 0.8 | 6 | 6 |
| MCCB 1H225###C## | C | 2.2 | 1.1 | 6 | 3.5 |
| MCCB 1H335###D## | D | 3.3 | 1.7 | 6 | 3 |
| MCCB 1H475###D## | D | 4.7 | 2.4 | 6 | 2.5 |
| MCCB 1H685###E## | E | 6.8 | 3.4 | 6 | 2 |
| MCCB 1H106###E## | E | 10 | 5 | 8 | 1.6 |
| MCCB 1H156###F## | F | 15 | 7.5 | 8 | 1.2 |
| MCCB 1H226###F## | F | 22 | 11 | 8 | 1 |
| MCCB 1H336###F## | F | 33 | 16.5 | 8 | 0.9 |

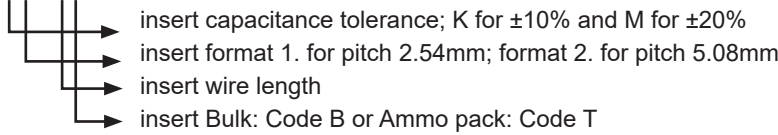
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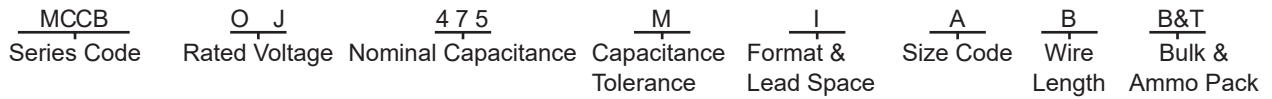
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Note: All ## A ## to ambient temperature of + 20°C measured at 120Hz, 0.5V rms unless otherwise stated



Packaging of bead tantalum capacitors Explanation Of Part Numbers

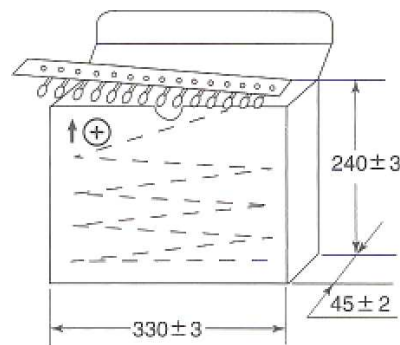
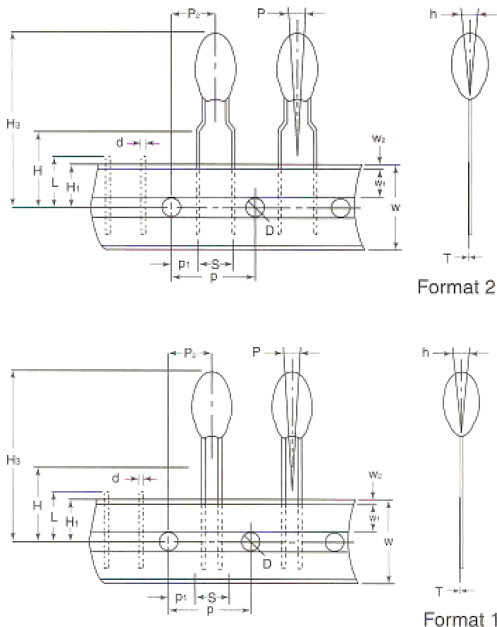


Quantity per bag: Code B
The capacity of the plastic bags depends on

| Case Size Format ① | Qty per bag (cut ≤ 7mm) | Case Size Format ① | Qty per bag (cut ≥ 14mm) | Case Size Format ② | Qty per bag (cut ≥ 7mm) |
|--------------------|-------------------------|--------------------|--------------------------|--------------------|-------------------------|
| From A to B | 1,000 | From A to B | 1,000 | From A to B | 1,000 |
| From C to D | 1,000 | From C to D | 500 | From C to D | 500 |
| From E to F | 500 | From E to F | 250 | | |

Tape & Ammo Packing (conform to: IEC286-2) Code T.

Tape & Ammo Packing (conform to: IEC286- 2)



| Case Code | A | B-C | D-F |
|----------------|------|------|------|
| QTY. (PCS/box) | 2500 | 2000 | 1000 |

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**MCCB Series Epoxy-Coated Solid
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| Item | Code | Dimension (mm) |
|---------------------------------|----------------|--|
| Carrier tape width | w | 18 ⁺¹ _{-0.5} |
| Hold down tape width | w ₁ | 6± 0.5 |
| Hold down tape position | w ₂ | 1max |
| Feed hole diameter | D | 4± 0.2 |
| Feed hole pitch | P | 12.7± 0.3 |
| Hole center to lead | P ₁ | Format 1: 5.05± 0.7 |
| | | Format 2: 3.85± 0.7 |
| Hole center to component center | P | 6.35 ± 1 |
| Lead wire clench height | H | 16± 0.5 |
| Hole position | H ₁ | 9± 0.5 |
| Base of component height | H ₂ | 0.8 min. |
| Component height | H ₃ | 32.2 max. |
| Component alignment | Δp | 0± 1.3 |
| | Δh | 0± 2 |
| Lead spacing | S | 'S' wires: 2.5 ^{+0.6} _{-0.1} |
| | | 'B' wires: 5 ^{+0.6} _{-0.5} |
| Lead diameter | d | 0.5± 0.05 |
| length of snipped lead | L | 11 max. |
| Carrier tape thickness | T | 0.5± 0.1 |

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