




**SPECIFICATION SHEET**

|   |   |                               |
|---|---|-------------------------------|
| <b>SPECIFICATION SHEET NO.</b>          | R0412- CA42A050M105BA   |                               |
| <b>DATE</b>                             | Apr. 12, 2024   |                               |
| <b>REVISION</b>                         | A2  | Updated With Most Recent Data |
| <b>DESCRIPTION AND MAIN PARAMETRICS</b> | <p>Dip Type Epoxy-Coated Solid Electrolytic Tantalum Capacitor<br/>           CA42 Series, Case A, D4.4*H6.5mm, Lead Space 2.54mm<br/>           Rated voltage 50 Vdc<br/>           Capacitance 1.0μF, Tolerance ±20%<br/>           Operating Temp. Range -55~+125°C<br/>           Package in Bulk, polybag and inner box<br/>           REACH/RoHS/RoHS III compliant</p> |                               |
| <b>CUSTOMER</b>                         |   |                               |
| <b>CUSTOMER PART NO.</b>                |   |                               |
| <b>CROSS REF. PART NO.</b>              | TAP/T350~T356/ND, NP/NDTM/S89/TB/ECSF/199D, 489D, ETPW, ETQW  |                               |
| <b>ORIGINAL MFG/PART NO.</b>            | XiangYi/ CA42-50V1  |                               |
| <b>PART CODE</b>                        | CA42A050M105BA  |                               |

|                         |   |  |
|-------------------------|---|--|
| <b>VENDOR APPROVE</b>   |   |  |
| Issued/Checked/Approved |    |  |
|                         |  |  |
| DATE: Apr.12, 2024      |   |  |

|                         |  |
|-------------------------|--|
| <b>CUSTOMER APPROVE</b> |  |
|                         |  |
| DATE:                   |  |

## DIP TANTALUM CAPACITORS CA42 SERIES

### MAIN FEATURE

- REACH/RoHS/RoHS III compliant
- Wide Operating Temperature Range -55~+125°C
- Epoxy-coated And Radial- Lead
- Stable In Electrical & Storage Performances



### APPLICATION

- For TV sets, PC, Mobile Telephone Sets Pickup Camera Radar Etc.
- Instruments, Meters And More Electronical Equipment.

### ELECTRICAL CHARACTERISTICS

- See Page 5~ Page 11 For Different Part Code

### HOW TO ORDER

- Please follow up Part Code Guide and indicate pat code when you order or RFQ For Custom Specification.

**DIP TANTALUM CAPACITORS CA42 SERIES**

**PART CODE GUIDE**

**RFQ**

[Request For Quotation](#)

| CODE | NAME                       | KEY SPECIFICATION OPTION   |
|------|----------------------------|--|
| CA42 | Product Series Code        | Dip Type Epoxy-Coated Solid Electrolytic Tantalum Capacitor  |
| A    | Case Code                  | Case A: D4.4*H6.5mm; Case B: D5.0*H7.5mm;<br>Case C: D5.5*H9.0mm; Case D: D6.3*H10.5mm;<br>Case E: D7.2*H12.0mm; Case V: D8.5*H13.0mm  |
| 050  | Rated Voltage Code         | 004: 4V; 6R3: 6.3V; 010: 10V; 016: 16V; 020: 20V; 025: 25V; 035: 35V;<br>050: 50V  |
| M    | Capacitance Tolerance code | K: ±10%; M: ±20% (standard)  |
| 105  | Capacitance Code           | 1st two digits represent Significant figures, 3rd Digit specifies number of Zeros<br><br>474: 0.47µF; 684:0.68µF; 105: 1.0µF; 155: 1.5µF; 225: 2.2µF; 335: 3.3µF;<br>475: 4.7µF; 685: 6.8µF; 106: 10µF; 156: 15µF; 226: 22µF; 336: 33µF;<br>476: 47µF; 686: 68µF; 107: 100µF; 157: 150µF; 227: 220µF; 337: 330µF;<br>477: 470µF; 687: 680µF; 108: 1000µF; 158: 1500µF; 228: 2200µF |
| B    | Package Code               | B: in Bulk Polybag; A: In Paper Tape AMMO  |
| A    | Internal control           | Custom letter A~Z, a-z or digits (0-9)<br><br>Eg. A: Lead Space 2.54mm; B: Lead Space 5.08mm   |
| ( )  | Custom Specification Code  | Custom letter A~Z, a-z or digits (0-9); Blank: N/A   |

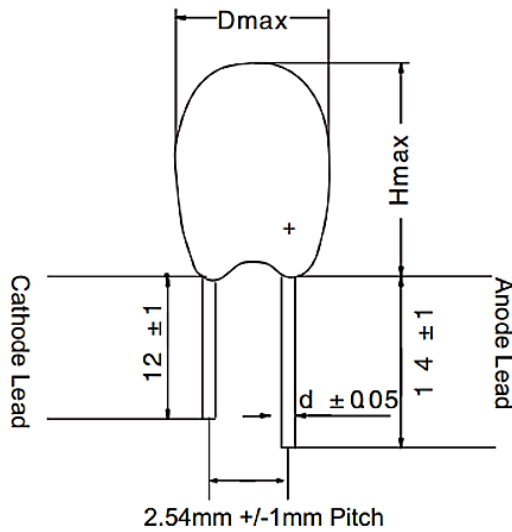
**DIP TANTALUM CAPACITORS CA42 SERIES**

**DIMENSION** (Unit: mm)

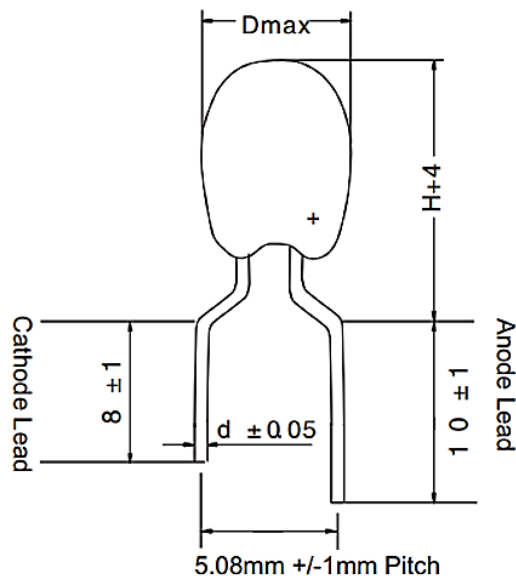
Image for reference



**Lead Space Type A**



**Lead Space Type B**



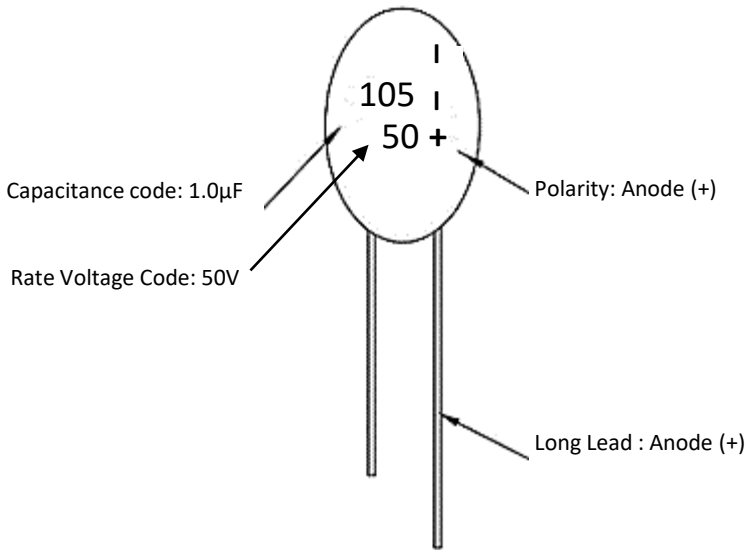
**DIP TANTALUM CAPACITORS CA42 SERIES**

**ELECTRICAL CHARACTERISTICS, DIMENSIONS, PACKAGE**

| Rated Voltage (V)              |                       | 6.3V           | 10V            | 16V                      | 25V  | 35V  | 50V  |      |      |      |      |
|--------------------------------|-----------------------|----------------|----------------|--------------------------|------|------|------|------|------|------|------|
| Voltage Derating (V), if >85°C |                       | 4V             | 6.3V           | 10V                      | 16V  | 20V  | 32V  |      |      |      |      |
| Surge Voltage (V) +85°C        |                       | 8V             | 13V            | 20V                      | 32V  | 46V  | 65V  |      |      |      |      |
| Dimensions (mm)                |                       | SPQ Bulk (pcs) | SPQ AMMO (pcs) | Nominal Capacitance (µF) |      |      |      |      |      |      |      |
| D*H*d                          | S                     |                |                | 1.5                      | 1    | 0.68 | 0.33 | 0.1  | 0.1  |      |      |
| 4.4*6.5*0.5<br>(Case A)        | 2.54                  | 1000           | 2000           | 2.2                      | 1.5  | 1    | 0.47 | 0.15 | 0.15 |      |      |
|                                | 5.08                  |                |                | 3.3                      | 2.2  | 1.5  | 0.68 | 0.22 | 0.22 |      |      |
|                                |                       |                |                | 4.7                      | 3.3  | 2.2  | 1    | 0.33 | 0.33 |      |      |
|                                | 5.08                  |                |                | 1000                     | 2000 | 6.8  | 6.8  | 3.3  | 1.5  | 0.47 | 0.47 |
|                                |                       |                |                |                          |      | 10   | 10   | 4.7  | 2.2  | 0.68 |      |
|                                |                       |                |                |                          |      | 15   | 15   | 6.8  | 3.3  | 1    |      |
|                                |                       |                |                |                          |      | 22   |      | 10   |      | 1.5  |      |
|                                | 5*7.5*0.5<br>(Case B) |                |                | 2.54                     | 1000 | 2000 | 33   | 22   | 15   | 4.7  | 2.2  |
| 5.08                           |                       | 1000           | 47             |                          |      |      | 22   | 6.8  | 3.3  | 1    |      |
|                                |                       |                |                |                          |      |      | 10   |      |      |      |      |
| 5.5*9.0*0.5<br>(Case C)        | 2.54                  | 500            | 1000           | 68                       | 33   | 33   | 15   | 4.7  | 1.5  |      |      |
|                                | 5.08                  |                |                | 100                      | 47   | 47   | 22   | 6.8  | 2.2  |      |      |
|                                |                       |                |                |                          | 68   |      |      | 10   | 3.3  |      |      |
|                                |                       |                |                |                          | 100  |      |      |      |      |      |      |
| 6.3*10.5*0.5<br>(Case D)       | 2.54                  | 500            | 1000           | 150                      | 150  | 68   | 33   | 15   | 4.4  |      |      |
|                                | 5.08                  |                |                | 220                      |      | 100  | 47   | 22   | 6.8  |      |      |
| 7.2*12.0*0.5<br>(Case E)       | 5.08                  | 500            | n/a            | 330                      | 220  | 150  | 68   | 33   | 10   |      |      |
|                                |                       |                |                | 470                      | 330  | 220  | 100  | 47   | 15   |      |      |
|                                |                       |                |                |                          |      |      |      |      | 22   |      |      |
| 8.5*13.0*0.5<br>(Case V)       | 5.08                  | 100            | n/a            | 680                      | 470  | 330  | 150  | 68   | 33   |      |      |
|                                |                       |                |                | 820                      | 680  | 470  |      |      |      |      |      |

**DIP TANTALUM CAPACITORS CA42 SERIES**

**MARKING**



|                  |   |     |    |    |    |    |    |    |
|------------------|---|-----|----|----|----|----|----|----|
| Voltage Code     | 4 | 6.3 | 10 | 16 | 20 | 25 | 35 | 50 |
| Rate Voltage (V) | 4 | 6.3 | 10 | 16 | 20 | 25 | 35 | 50 |

|                  |     |     |     |     |      |     |     |
|------------------|-----|-----|-----|-----|------|-----|-----|
| Capacitance Code | 104 | 105 | 106 | 107 | 154  | 156 | 157 |
| Capacitance (µF) | 0.1 | 1   | 10  | 100 | 0.15 | 15  | 150 |

|                  |      |     |     |     |      |     |     |
|------------------|------|-----|-----|-----|------|-----|-----|
| Capacitance Code | 224  | 225 | 226 | 227 | 334  | 335 | 336 |
| Capacitance (µF) | 0.22 | 2.2 | 22  | 220 | 0.33 | 3.3 | 33  |

|                  |      |     |     |      |     |     |     |
|------------------|------|-----|-----|------|-----|-----|-----|
| Capacitance Code | 474  | 475 | 476 | 684  | 685 | 686 | 687 |
| Capacitance (µF) | 0.47 | 4.7 | 47  | 0.68 | 6.8 | 68  | 680 |

**DIP TANTALUM CAPACITORS CA42 SERIES**
**STANDARD CHARACTERISTICS**

|                             |  |
|-----------------------------|--|
| PART CODE                   | CA42A050M105BA   |
| Case Size Code              | A  |
| Case Dimension              | D4.4*H6.5mm, Lead Space 2.54mm   |
| Capacitance Tolerance       | ±20%   |
| Rate Temperature Range      | 85 °C  |
| Category Temperature Range  | 125 °C   |
| Operating Temperature Range | -55~ + 125 °C  |
| Leakage Current             | Measured after 1 Minutes Application of rated voltage reading, $I_0 \leq 0.02 CRUR$ or $1.0\mu A$ Max. whichever is greater @25 °C |

**TEMPERATURE CHARACTERISTICS**

| Nominal Capacitance $C_R$ ( $\mu F$ ) | Max. D.F (%) |       |       |        | MAX D.C.L ( $\mu A$ ) |                   |
|---------------------------------------|--------------|-------|-------|--------|-----------------------|-------------------|
|                                       | -55 °C       | 25 °C | 85 °C | 125 °C | 85 °C                 | 125 °C            |
| 0.47~1.0                              | 6            | 4     | 6     | 6      | 8 I <sub>0</sub>      | 10 I <sub>0</sub> |
| 1.5~6.8                               | 8            | 6     | 8     | 8      | 8 I <sub>0</sub>      | 10 I <sub>0</sub> |
| 10~68                                 | 10           | 8     | 10    | 10     | 8 I <sub>0</sub>      | 10 I <sub>0</sub> |
| 100~330                               | 12           | 10    | 12    | 12     | 8 I <sub>0</sub>      | 10 I <sub>0</sub> |
| 470~680                               | 14           | 12    | 14    | 14     | 8 I <sub>0</sub>      | 10 I <sub>0</sub> |
| 680 up                                | 16           | 14    | 16    | 16     | 8 I <sub>0</sub>      | 10 I <sub>0</sub> |

Note:

- Please do not use multimeter to test tantalum capacitors.
- Capacitance and DF measured at:100Hz,  $U_{-} = 2.2^{-.1.0} V$ ,  $U_{\sim} = 1.0^{-.0.5} V$ , Frequency = 100Hz. Test only applied to series equivalent circuit.
- Please refer to derating voltage or category voltage if temperature > 85 °C
- The DCL parameter should be read after 5 minutes when it connected to the circuit.

4/12/2024

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**DIP TANTALUM CAPACITORS CA42 SERIES**

**ELECTRONICAL CHARACTERISTICS FOR MAIN PARTS**

| Part Code      | Rated Voltage | Capacitance Tolerance | Capacitance @25°C 100Hz | Max. Dissipation Factor (DF) @25°C, 100Hz | Lead Space |
|----------------|---------------|-----------------------|-------------------------|---|------------|
|                | V             | %                     | μF                      | %   | mm         |
| CA42A6R3M227BA | 6.3           | ±20                   | 220                     | 10  | 2.54       |
| CA42A6R3M336BA | 6.3           | ±20                   | 33                      | 8   | 2.54       |
| CA42A6R3M476BA | 6.3           | ±20                   | 47                      | 8   | 2.54       |
| CA42A6R3M686BA | 6.3           | ±20                   | 68                      | 8   | 2.54       |
| CA42A010M106BA | 10            | ±20                   | 10                      | 6   | 2.54       |
| CA42A010M226BA | 10            | ±20                   | 22                      | 8   | 2.54       |
| CA42A010M476BA | 10            | ±20                   | 47                      | 8   | 2.54       |
| CA42A016M106BA | 16            | ±20                   | 10                      | 8   | 2.54       |
| CA42A016M107BA | 16            | ±20                   | 100                     | 10  | 2.54       |
| CA42A016M156BA | 16            | ±20                   | 15                      | 8   | 2.54       |
| CA42A016M157BA | 16            | ±20                   | 150                     | 10  | 2.54       |
| CA42A016M225BA | 16            | ±20                   | 2.2                     | 6   | 2.54       |
| CA42A016M226BA | 16            | ±20                   | 22                      | 8   | 2.54       |
| CA42A016M335BA | 16            | ±20                   | 3.3                     | 6   | 2.54       |
| CA42A016M336BA | 16            | ±20                   | 33                      | 6   | 2.54       |
| CA42A016M475BA | 16            | ±20                   | 4.7                     | 6   | 2.54       |
| CA42A016M476BA | 16            | ±20                   | 47                      | 8   | 2.54       |
| CA42A020M106BA | 20            | ±20                   | 10                      | 8   | 2.54       |
| CA42A025M105BA | 25            | ±20                   | 1                       | 4   | 2.54       |
| CA42A025M106BA | 25            | ±20                   | 10                      | 8   | 2.54       |



**DIP TANTALUM CAPACITORS CA42 SERIES**

**ELECTRONICAL CHARACTERISTICS FOR MAIN PARTS**

| Part Code      | Rated Voltage | Capacitance Tolerance | Capacitance @25°C 100Hz | Max. Dissipation Factor (DF) @25°C, 100Hz | Lead Space |
|----------------|---------------|-----------------------|-------------------------|---|------------|
|                | V             | %                     | µF                      | %   | mm         |
| CA42A025M107BA | 25            | ±20                   | 100                     | 10  | 2.54       |
| CA42A025M156BA | 25            | ±20                   | 15                      | 8   | 2.54       |
| CA42A025M225BA | 25            | ±20                   | 2.2                     | 6   | 2.54       |
| CA42A025M226BA | 25            | ±20                   | 22                      | 8   | 2.54       |
| CA42A025M335BA | 25            | ±20                   | 3.3                     | 6   | 2.54       |
| CA42A025M336BA | 25            | ±20                   | 33                      | 6   | 2.54       |
| CA42A025M475BA | 25            | ±20                   | 4.7                     | 6   | 2.54       |
| CA42A025M476BA | 25            | ±20                   | 47                      | 8   | 2.54       |
| CA42A025M685BA | 25            | ±20                   | 6.8                     | 6   | 2.54       |
| CA42A025M686BA | 25            | ±20                   | 68                      | 8   | 2.54       |
| CA42A035M104BA | 35            | ±20                   | 0.1                     | 4   | 2.54       |
| CA42A035M105BA | 35            | ±20                   | 1                       | 4   | 2.54       |
| CA42A035M106BA | 35            | ±20                   | 10                      | 8   | 2.54       |
| CA42A035M154BA | 35            | ±20                   | 0.15                    | 4   | 2.54       |
| CA42A035M224BA | 35            | ±20                   | 0.22                    | 4   | 2.54       |
| CA42A035M225BA | 35            | ±20                   | 2.2                     | 6   | 2.54       |
| CA42A035M226BA | 35            | ±20                   | 22                      | 8   | 2.54       |
| CA42A035M334BA | 35            | ±20                   | 0.33                    | 4   | 2.54       |
| CA42A035M335BA | 35            | ±20                   | 3.3                     | 6   | 2.54       |
| CA42A035M336BA | 35            | ±20                   | 33                      | 8   | 2.54       |

**DIP TANTALUM CAPACITORS CA42 SERIES**

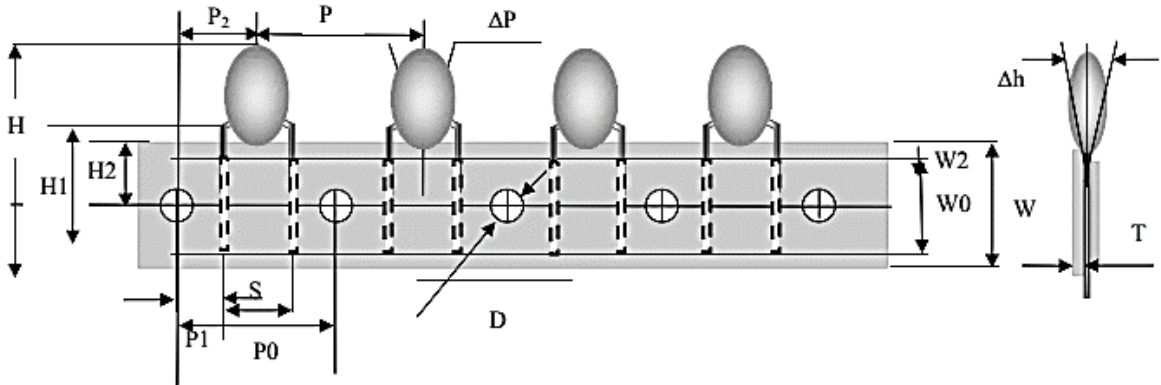
**ELECTRONICAL CHARACTERISTICS FOR MAIN PARTS**

| Part Code             | Rated Voltage | Capacitance Tolerance | Capacitance @25°C 100Hz | Max. Dissipation Factor (DF) @25°C, 100Hz | Lead Space  |
|-----------------------|---------------|-----------------------|-------------------------|---|-------------|
|                       | V             | %                     | μF                      | %   | mm          |
| CA42A035M474BA        | 35            | ±20                   | 0.47                    | 4   | 2.54        |
| CA42A035M475BA        | 35            | ±20                   | 4.7                     | 6   | 2.54        |
| CA42A035M684BA        | 35            | ±20                   | 0.68                    | 4   | 2.54        |
| <b>CA42A050M105BA</b> | <b>50</b>     | <b>±20</b>            | <b>1</b>                | <b>4</b>                                  | <b>2.54</b> |
| CA42A050M334BA        | 50            | ±20                   | 0.33                    | 4   | 2.54        |
| CA42A050M335BA        | 50            | ±20                   | 3.3                     | 6   | 2.54        |
| CA42A050M684BA        | 50            | ±20                   | 0.68                    | 4   | 2.54        |
| CA42A004M687BA        | 4             | ±20                   | 680                     | 10  | 2.54        |

**DIP TANTALUM CAPACITORS CA42 SERIES**

**PACKAGE**

- Standard package is in Bulk Polybag, see page 5.
- Option package is In Paper Tape AMMO (complied IEC286-2 standard)



| Symbol | Dimension      | Symbol | Dimension |          |
|--------|----------------|--------|-----------|----------|
| P      | 12.7±1.0       | D      | 4.0±0.2   |          |
| P0     | 12.7±0.3       | T      | 0.5±0.2   |          |
| W      | 18 (+1,-0.5)   | Δh     | 0±2.0     |          |
|        |                | H      | 16±0.5    |          |
| W0     | 13             | S      | 2.54±0.5  | 5.08±0.7 |
| H2     | 9 (+0.75,-0.5) | P1     | 5.10±0.5  | 3.85±0.7 |
| W2     | 0 (+1,0)       | P2     | 6.35±0.4  |          |
| H1     | 32.5 Max.      | ΔP     | ±1.3 Max. |          |

**DIP TANTALUM CAPACITORS CA42 SERIES**

**APPLICATION NTOE**

**Storage Condition**

- 1) Environmental temperature: 10°C ~ +30°C
- 2) Relative humidity no more than 60%
- 3) Storing period: No more than one and half year since the date of stocking.

**APPLICATION GUIDE**

**1) Ripple Current and Voltage**

If the ripple current is applied to the capacitor, the Joule heat (power dissipated) will be generated in the capacitor, so it will affect the reliability of the capacitor.

(1) Power Dissipated

The actual power dissipated can be calculated using the following formula:  $P=I^2 \times ESR$ .....Formula 1

P: Power dissipated (W); I: Ripple current (A); ESR: Equivalent series resistance (Ω)

Power Dissipation for Case E ( EIA Code 7343-43): 125mW Max. @+25°C

(2) Ripple Current

Using the maximum power dissipation 125mW Max., the ripple current can be calculated using the following

formula:  $I= \sqrt{\frac{P}{ESR}} \times K \times F$ .....Formula 2

K: Temperature derating factor..... Table 1; F: Frequency derating factor..... Table 2

ESR: Refer to the ratings of each specific product

Table 1: Temperature Drop Factor K

Table 2: Frequency Derating Factor F

| Temperature | Temperature Derating Factor K |
|-------------|-------------------------------|
| 25 °C       | 1                             |
| 85 °C       | 0.9                           |
| 125 °C      | 0.4                           |

| Frequency (KHz) | 10   | 100 | 500  | 1000 |
|-----------------|------|-----|------|------|
| MnO2            | 0.80 | 1.0 | 1.15 | 1.20 |

Using formula 3 to calculate corrugated voltage E:  $E=Z \times I$ ..... Formula 3

E: Ripple voltage; Z: Specific frequency impedance

## DIP TANTALUM CAPACITORS CA42 SERIES

### (3) Ripple Voltage

The ripple voltage applied to the capacitor is limited by three criteria.

- (a) The power dissipation in the ESR of capacitor must not exceed 125mW Max. @+25°C
- (b) The positive peak AC voltage plus the DC bias voltage must not exceed the DC voltage rating of the capacitor.
- (c) The negative peak AC voltage, in combination with the bias voltage, if any , must not exceed the permissible reverse voltage ratings presented .

### 2) Reverse Voltage

Solid tantalum capacitors are polarized devices , and applied reverse voltage can not be allowed . If the reverse voltage is unavoidable, a small degree of transient reverse voltage is permissible for short periods as follow.

25°C..... 10% of Max. rated voltage or 1V whichever is smaller

85°C..... 5% of Max. rated voltage or 0.5V whichever is smaller

125°C.....1% of Max. rated voltage or 0.1V whichever is smaller

Even under these restrictions, capacitors can not be used continuously in reverse voltage mode.

### 3) Working Voltage

- (1) For general applications, using 50% of rated voltage of capacitors or less.
- (2) When used at the power circuit, low impedance circuit , coupling circuit or witching circuit which has leakage current problems, please design the circuit with voltage under 30% of the working voltage ( max 50%) to avoid the adverse effect of the surge current.
- (3) Derating voltage when temperature above 85°C.

When the chip tantalum capacitor is used at 85°C or more temperatures, the reduced voltage ( $U_T$ ) is calculated from the following expression, however, note that the ambient temperature is not more than 125°C.

$$U_T = V_0 (U_R - U_C)(T - 85) / 40$$

$U_R$ : Rated voltage (V);  $U_C$ : Derating voltage at 125°C; T: Ambient temperature (°C )

## DIP TANTALUM CAPACITORS CA42 SERIES

### 4) Protective Resistance

In a circuit (switching circuit, charge / discharge circuit, etc.) that has an instantaneous current, series resistance is at least  $3\Omega/V$ , this can improve the reliability of tantalum capacitors. If the capacitor is in a low impedance circuit, the voltage applied to the capacitor should be half or one third of the rated voltage.

### 5) Redundancy

MnO<sub>2</sub> tantalum capacitors will heat, and may cause fire and burn in the short circuit. This is determined by the situation, time and other factors. When the circuit is designed, it is possible to provide the best possible space to keep the tantalum capacitor reliability.

### 6) Test Condition

Ambient Temperature 25°C; Relative Humidity 60 to 70%; Air Pressure 800 to 1060mbar. Test and experiment, in order to make the test results not problems, it is necessary to will test the product after fully discharge.

This product is a polar components, testing or when using it is strictly prohibited to will is negative pick back, in order to avoid performance failure

### 7) Soldering

The DIP tantalum capacitor can be used for reflow soldering, which is not suitable for wave soldering and manual welding. The reflow temperature are  $\leq 250^{\circ}\text{C}$ ,  $\leq 5$  seconds. If you must use manual welding, should use the melted solder to contact lead, and the electric soldering iron power should be less than or equal to 25W, temperature should be less than  $300^{\circ}\text{C}$ , welding time should be less than 3 seconds, can not use electric iron contact the product lead directly, and in particular, can not contact the product ontology directly. Recommended profile conditions for convection and IR reflow reflect the profile conditions of the IPC/J-STD-020D standard for moisture sensitivity testing

## DIP TANTALUM CAPACITORS CA42 SERIES

### IMPORTANT NOTES AND DISCLAIMER

1. **ROHS COMPLIANCE:** The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained at Download Center.
2. **REACH COMPLIANCE:** REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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7. *NextGen* products are not authorized for use as critical components in life support devices or systems without express written approval by *NextGen*.
8. *NextGen* requires that customers first obtain an RMA (Returned Merchandise Authorization) number prior to returning any products. Returns must be made within 30 days of the date of invoice, be in the original packaging, unused and like-new condition. At the time of quoting or purchasing, a product may say that it is Non-Cancelable/ Non-Returnable (NCNR). These products are not returnable and not refundable.