

# EDCON-COMPONENTS



## Specifications

I17042 Serie is molded Solid tantalum capacitor with Sinterd and polymer as the cathode, featuring low ESR and good frequency resonance, resistance to high ripple current, small size, small weight, high reliability, high reliability and long life I17042 Series is equivalent to Kemet 520 series.

Operating temperature Range  $-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$  ( $85^{\circ}\text{C}$  with rated voltage derating).

Capacitance tolerance:  $\pm 20\%$ .

DC leakage, dissipation factor and ESR at  $25^{\circ}\text{C}$ .

Taping and reeling per EIA481-1 Specification.

General purpose surface mount type.

Compact size & wide CV range.

High Solderability & stabler characteristics for soldering.

Compatible with all popular automatic pick and place equipment.

## Technical Drawing



| Technical                    | Performance Characteristics  |
|------------------------------|--|
| Operating Temperature Range: | $-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$                                  |
| Rated Working Voltage:       | 4 to 50VDC   |
| Nominal Capacitance Range:   | 0,1 to 1500 $\mu\text{F}$  |
| Capacitance Tolerance:       | $\pm 20\%$ / $\pm 10\%$ (120Hz $\pm 20^{\circ}\text{C}$ )                        |
| Leakage Current:             | Not more than 0,01CV ( $\mu\text{A}$ ) or 0,5 $\mu\text{A}$ whichever is greater |

## Dimensions

| Case Size | L= $\pm 0,2$ | W1= $\pm 7-0,2$ | H= $\pm 0,2$ | S= $\pm 0,2$ | W2= $\pm 0,2$ |
|-----------|--------------|-----------------|--------------|--------------|---------------|
| S         | 2,0          | 1,2             | 1,2          | 0,5          | 1,2           |
| A         | 3,2          | 1,6             | 1,6          | 0,8          | 1,2           |
| B         | 3,5          | 2,8             | 1,9          | 0,8          | 2,2           |
| C         | 6,0          | 3,2             | 2,5          | 1,3          | 2,2           |
| D         | 7,3          | 4,3             | 2,8          | 1,3          | 2,4           |
| E         | 7,3          | 4,3             | 4,0          | 1,3          | 2,4           |
| V         | 7,3          | 6,1             | 3,5          | 1,4          | 3,1           |

| Characteristics at High and Low Temperature | capacitance ( $\mu\text{F}$ )       | Capacitance Change (%) |                       |                        | DF Max. (%)           |                       |                       |                        | DCL Max. ( $\mu\text{F}$ ) |                        |
|---|-------------------------------------|------------------------|-----------------------|------------------------|-----------------------|-----------------------|-----------------------|------------------------|----------------------------|------------------------|
|   |                                     | $-55^{\circ}\text{C}$  | $+85^{\circ}\text{C}$ | $+125^{\circ}\text{C}$ | $-55^{\circ}\text{C}$ | $+20^{\circ}\text{C}$ | $+55^{\circ}\text{C}$ | $+125^{\circ}\text{C}$ | $+85^{\circ}\text{C}$      | $+125^{\circ}\text{C}$ |
| 1   | 1,5 ~ 68<br>100 ~ 680<br>680 ~ 1500 | -10                    | +10                   | +12                    | 6                     | 4                     | 6                     | 6                      | 10lo                       | 20lo                   |
| 10  |                                     |                        |                       |                        | 6                     | 10                    | 10                    |                        |                            |                        |
| 12  |                                     |                        |                       |                        | 8                     | 12                    | 12                    |                        |                            |                        |
| 14  |                                     |                        |                       |                        | 10                    | 14                    | 14                    |                        |                            |                        |

**LOW ESR CHIP Tantalum Capacitor Alternate to KEMET Serie 520**

Part No.: **I17042**

|       |        |      |        |        |        |           |           |          |            |           |
|-------|--------|------|--------|--------|--------|-----------|-----------|----------|------------|-----------|
| DRW:  | Jason  | CHKD | Wilson | MATL:  | Wilson | TOLERANCE | Mason     | DATE     | 20.05.2010 | Customer: |
| APPD: | Schumi |      |        | FINISH | Jamy   |           | Sheet No. | 1 from 5 |            |           |

# EDCON-COMPONENTS



## Moist

| Test conditions:              |                                   |
|-------------------------------|-----------------------------------|
| Relative Humidity:            | 90 to 95% without load            |
| Ambient Temperature:          | .+ 40°C                           |
| Duration:                     | 500 hours                         |
| Post rest requirement at 20°C |                                   |
| Leakage current:              | ≤ Initial specified value.        |
| Capacitance change:           | +/- 10% of initial measured value |
| tan                           | ≤ Initial specified value.        |

## Shell Life

| Test conditions      |            | Post test requirements at +20°C |
|----------------------|------------|---------------------------------|
| Duration:            | 2000 hours | Same limits for Endurance.      |
| Ambient temperature: | . +125°C   |                                 |
| Applied Voltage:     | (none)     |                                 |

## Solder Heat Resistance

The Capacitor shall withstand dipping into solder bath for 5 +/-1 seconds at 260 +/-5°C

## Endurance

| Test conditions     |                          |                       |
|---------------------|--------------------------|-----------------------|
| Conditions Item     | Derating                 | Rating                |
| Duration            | 2000 hours               | 2000 hours            |
| Ambient temperature | . +125°C                 | . +85°C               |
| Applied Voltage     | Derating working voltage | Rated working voltage |
| Source impedance    | 1Ω/V                     | 1Ω/V                  |

| Derating Voltage +125°C for 10~50V working |     |     |      |      |      |      |      |      |  |
|--|-----|-----|------|------|------|------|------|------|--|
| Rated Voltage                              | 4,0 | 6,3 | 10,0 | 16,0 | 20,0 | 25,0 | 35,0 | 50,0 |  |
| Voltage Derating                           | 2,5 | 4,0 | 6,3  | 10,0 | 13,0 | 16,0 | 23,0 | 33,0 |  |
| Surge Voltage +85°C                        | 5,0 | 8,0 | 13,0 | 20,0 | 26,0 | 32,0 | 46,0 | 65,0 |  |
| Surge Voltage +0°C                         | 3,4 | 5,0 | 9,0  | 12,0 | 16,0 | 20,0 | 26,0 | 38,0 |  |

| Post test requirements 5.0 at +20°C |                                     |
|-------------------------------------|-------------------------------------|
| Leakage Current                     | ≤ 125% of initial specified value   |
| Capacitance Change                  | .+/- 10% of initial measured value. |
| tan                                 | ≤ initial specified value           |

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## Packing Specification

Dimensions of the carrier tape and standards parts quantity per reel



| Case Size | A +/- 0,1 | B +/- 0,1 | C +/- 0,1 | D +/- 0,1 | E +/- 0,1 | F +/- 0,1 | G +/- 0,1 | H +/- 0,1 | J +/- 0,1 | K max. | t   | Quantity |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|-----|----------|
| S         | 1,6       | 2,4       | 8         | 3,5       | 1,75      | 4         | 2         | 4         | 1,5       | 2,5    | 0,2 | 2000     |
| A         | 1,9       | 3,5       | 8         | 3,5       | 1,75      | 4         | 2         | 4         | 1,5       | 2,5    | 0,2 | 2000     |
| B         | 3,1       | 3,8       | 8         | 3,5       | 1,75      | 4         | 2         | 4         | 1,5       | 2,5    | 0,2 | 2000     |
| C         | 3,6       | 6,4       | 12        | 5,5       | 1,75      | 8         | 2         | 4         | 1,5       | 3      | 0,3 | 500      |
| D         | 4,7       | 7,7       | 12        | 5,5       | 1,75      | 8         | 2         | 4         | 1,5       | 3,4    | 0,3 | 500      |
| E         | 4,6       | 7,6       | 12        | 5,5       | 1,75      | 8         | 2         | 4         | 1,5       | 4,6    | 0,3 | 400      |
| V         | 6,4       | 7,4       | 12        | 5,5       | 1,75      | 8         | 2         | 4         | 1,5       | 3,8    | 0,3 | 400      |

| Tape width | 8     | 12   |
|------------|-------|------|
| A          | Ø 180 | ←    |
| B          | Ø 60  | ←    |
| C +/-0.2   | Ø 13  | ←    |
| D +/-0.2   | Ø 21  | ←    |
| E +/-0.5   | 2,0   | ←    |
| W +/-0.3   | 9,0   | 13,0 |
| t +/-0.4   | 1,3   | ←    |
| R +/-0.4   | 10,5  | ←    |

Reel Dimensions Unit (mm)



Tape Leader and Tailer



**LOW ESR CHIP Tantalum Capacitor Alternate to KEMET Serie 520**

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## Ordering Informations

| Serie         | Voltage    | Tol.     | Range Cod. | Case Code | ESR         | ROHS     | Package   |  |  |  |
|---------------|------------|----------|------------|-----------|-------------|----------|-----------|--|--|--|
| <b>I17042</b> | <b>160</b> | <b>K</b> | <b>107</b> | <b>E</b>  | <b>0125</b> | <b>R</b> | <b>TR</b> |  |  |  |

|                     |                    |                   |                     |                            |                            |                        |
|---------------------|--------------------|-------------------|---------------------|----------------------------|----------------------------|------------------------|
| <b>160=</b> 16 Volt | <b>K=</b> Tol. 10% | <b>107=</b> 100µF | <b>E=</b> Size Code | <b>0125=</b> 125 Milliohms | <b>R=</b> ROHS Conform     | <b>TR=</b> Tape / Reel |
|                     | <b>M=</b> Tol. 20% |                   |                     |                            | <b>N=</b> NON ROHS Conform |                        |

**LOW ESR CHIP Tantalum Capacitor Alternate to KEMET Serie 520**

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Customer:



Soldering Profile Curve

Classification Reflow Profile (JEDEC J-STD-020C)



|   |               |
|---|---------------|
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| Customer:   |               |

|       |        |      |        |        |        |           |           |          |            |
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| DRW:  | Jason  | CHKD | Wilson | MATL:  | Wilson | TOLERANCE | Mason     | DATE     | 20.05.2010 |
| APPD: | Schumi |      |        | FINISH | Jamy   |           | Sheet No. | 5 from 5 |            |