



# DATA SHEET

## CHIP 5000Hours Load Life 105°C

### Serie: I15009

Voltage: 63Volt Range: 470 $\mu$ F

Impedance: no specified Dimension 16x21,5mm

Ripple Current: 850mA

CHIP 5000Hours Load Life 105°C

Serie No.: I15009

|       |        |      |        |        |        |           |           |          |            |           |
|-------|--------|------|--------|--------|--------|-----------|-----------|----------|------------|-----------|
| DRW:  | Jason  | CHKD | Wilson | MATL:  | Wilson | TOLERANCE | Mason     | DATE     | 03.06.2014 | Customer: |
| APPD: | Schumi |      |        | FINISH | Jamy   |           | Sheet No. | 1 from 7 |            |           |

# EDCON-COMPONENTS



Designed for surface mounting on high density circuit board

Emboss carrier tape packing systems is available for automatic insertion



## Technical Informations

|  |                     |
|--|---------------------|
| Voltage:                                 | <b>63Volt</b>       |
| Range:                                   | <b>470µF</b>        |
| Dimension; D x L mm                      | <b>16x21,5mm</b>    |
| Impedance (Ω) max., at20°C, 100hKz       | <b>no specified</b> |
| Ripple Current (mA rms) at 105°C, 100kHz | <b>850mA</b>        |

| Ordering Code |                |           |          |
|---------------|----------------|-----------|----------|
| <b>630</b>    | <b>Voltage</b> |           |          |
| <b>471</b>    | <b>Range</b>   |           |          |
| <b>D=</b>     | <b>K</b>       | <b>L=</b> | <b>8</b> |

Operating Temperatur Range of -55°C ~ +105°C

Load Life of 3000~5000 hours

|                             |               |  |
|-----------------------------|---------------|--|
| <b>Leakage current max.</b> | Ø4 ~ Ø10mm    | I= 0,01CV or 3µA whichever is greater ( after 2 minutes) |
|                             | Ø12,5 ~ Ø16mm | I= 0,03CV or 4µA whichever is greater ( after 1 minutes) |

**Capacitance tolerance** ± 20% at 120Hz, 20°C

|   |      |               |      |      |      |      |      |      |      |      |  |  |  |  |
|---|------|---------------|------|------|------|------|------|------|------|------|--|--|--|--|
| <b>Dissipation factor max. (at 120Hz, 20°C)</b> | WV   |               | 6,3  | 10   | 16   | 25   | 35   | 50   | 63   | 100  |  |  |  |  |
|   | Tanδ | Ø4 ~ Ø10mm    | 0,28 | 0,24 | 0,20 | 0,16 | 0,13 | 0,12 | 0,12 | 0,12 |  |  |  |  |
|   |      | Ø12,5 ~ Ø16mm | 0,38 | 0,34 | 0,30 | 0,26 | 0,22 | 0,18 | 0,18 | 0,18 |  |  |  |  |

|  |               |                 |     |    |    |    |    |    |    |     |  |  |  |  |
|--|---------------|-----------------|-----|----|----|----|----|----|----|-----|--|--|--|--|
| <b>Low Temperatur characteristics ( Impedance ratio at 120Hz )</b> | WV            |                 | 6,3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 |  |  |  |  |
|  | Ø4 ~ Ø10mm    | Z-25°C / Z+20°C | 3   | 3  | 2  | 2  | 2  | 2  | 2  | 2   |  |  |  |  |
|  |               | Z-55°C / Z+20°C | 8   | 5  | 4  | 3  | 3  | 3  | 3  | 3   |  |  |  |  |
|  | Ø12,5 ~ Ø16mm | Z-25°C / Z+20°C | 5   | 4  | 3  | 2  | 2  | 2  | 2  | 2   |  |  |  |  |
| Z-55°C / Z+20°C  |               | 12              | 10  | 8  | 5  | 4  | 3  | 3  | 3  |     |  |  |  |  |

|  |  |                                   |
|--|--|-----------------------------------|
| <b>Load Life ( after application of the rated voltage for 5000hrs at 125°C</b> | Leakage current                          | Less than specified value         |
|  | Capacitance Change                       | Within ±30% of initial value      |
|  | Tanδ                                     | Less than 300% of specified value |
|  | Ø4 ~ Ø6,3x5,8 , Ø8x6,2 ~ Ø6,3: 3000hours |                                   |

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**Shell life (at 105°C)** After 1000hours no load test, leakage current, capacitance and tan $\delta$  are same as load life value.

|                                     |   |                                    |
|-------------------------------------|---|------------------------------------|
| <b>Resistance to soldering heat</b> | After reflow soldering and resistance at room temperature, they meet the characteristics requirements listed at underside |                                    |
|                                     | Leakage current   | Less than specified value          |
|                                     | Capacitance Change  | Within $\pm 10\%$ of initial value |
|                                     | Tan $\delta$  | Less than specified value          |

| Size  | Capacitance<br>$\mu\text{F}$ | FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT |       |       |      |              |
|---|------------------------------|---|-------|-------|------|--------------|
|   |                              | Frequency   |       |       |      |              |
|   |                              | 50Hz  | 120Hz | 300Hz | 1KHz | 10KHz $\leq$ |
| $\varnothing 4 \sim \varnothing 10\text{mm}$    |                              | 0,70  | 1,00  | 1,17  | 1,36 | 1,50         |
| $\varnothing 12,5 \sim \varnothing 16\text{mm}$ | <b>~68</b>                   | 0,75  | 1,00  | 1,35  | 1,57 | 2,00         |
|   | <b>100 ~470</b>              | 0,80  | 1,00  | 1,23  | 1,34 | 1,50         |
|   | <b>680 ~3300</b>             | 0,85  | 1,00  | 1,10  | 1,13 | 1,15         |

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## Technical Drawing

### Dimension of Size $\varnothing 8 \times 10,5 \sim 16 \text{mm}$



### Dimension of Size $\varnothing 4 \sim 8 \times 6,2 \text{mm}$



| D x L    | $\varnothing 4 \times 5,8$ | $\varnothing 5 \times 5,8$ | $\varnothing 6,3 \times 5,8$ | $\varnothing 6,3 \times 7,7$ | $\varnothing 8 \times 6,2$ | $\varnothing 8 \times 10,5$ | $\varnothing 10 \times 10,5$ | $\varnothing 10 \times 13,5$ | $\varnothing 12,5 \times 13,5$ | $\varnothing 12,5 \times 16$ | $\varnothing 16 \times 16,5$ |
|----------|----------------------------|----------------------------|------------------------------|------------------------------|----------------------------|-----------------------------|------------------------------|------------------------------|--------------------------------|------------------------------|------------------------------|
| A        | 2,0                        | 2,2                        | 2,6                          | 2,6                          | 3,4                        | 3,0                         | 3,3                          | 3,3                          | 4,9                            | 4,9                          | 5,8                          |
| B        | 4,3                        | 5,3                        | 6,6                          | 6,6                          | 8,4                        | 8,4                         | 10,4                         | 10,4                         | 13,0                           | 13,0                         | 17,0                         |
| C        | 4,3                        | 5,3                        | 6,6                          | 6,6                          | 8,4                        | 8,4                         | 10,4                         | 10,4                         | 13,0                           | 13,0                         | 17,0                         |
| E +/-0.2 | 1,0                        | 1,3                        | 1,9                          | 1,9                          | 2,3                        | 3,1                         | 4,7                          | 4,7                          | 4,7                            | 4,7                          | 6,4                          |
| L        | 5,8                        | 5,8                        | 5,8                          | 7,7                          | 6,2                        | 10,5                        | 10,5                         | 13,5                         | 13,5                           | 16,0                         | 16,5                         |

\*1 Voltage mark (6V) represents 6,3V for  $\varnothing 4 \sim 10 \text{mm}$

\*3 (L +/- 0.5) is applicable to  $\varnothing 8 \times 10,5 \sim \varnothing 10 \text{mm}$

\*2 (L +/- 0.3) is applicable to  $\varnothing 6,3 \sim 7,7$  and  $\varnothing 8 + 6,2 \text{mm}$

\*4 (L +/- 1.0) is applicable to  $\varnothing 12,5 \sim \varnothing 16 \text{mm}$

RE. Date code and seriew type -1st digit for Year 2nd digit for Quarter, 4 quarter codes in one year area 1,4,7,0

3rd character for Serie S

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## Ordering Informations

| Serie | Voltage Code | Tolerance Code | Range Code | Size Code D | Size Code L | Special function | ROHS | Packing Code |  |  |
|-------|--------------|----------------|------------|-------------|-------------|------------------|------|--------------|--|--|
|-------|--------------|----------------|------------|-------------|-------------|------------------|------|--------------|--|--|

|               |            |          |            |          |          |           |          |           |  |  |
|---------------|------------|----------|------------|----------|----------|-----------|----------|-----------|--|--|
| <b>I15009</b> | <b>630</b> | <b>M</b> | <b>471</b> | <b>K</b> | <b>8</b> | <b>XX</b> | <b>R</b> | <b>TR</b> |  |  |
|---------------|------------|----------|------------|----------|----------|-----------|----------|-----------|--|--|

|              |                |                     |                   |                   |                        |                            |                              |  |  |
|--------------|----------------|---------------------|-------------------|-------------------|------------------------|----------------------------|------------------------------|--|--|
| look table   | <b>M= ±20%</b> | Ordering Code Range | Look table Code D | Look table Code L | <b>XX= No function</b> | <b>R= ROHS Conform</b>     | <b>TR= Tape Reel Packing</b> |  |  |
| Voltage Code |                |                     |                   |                   |                        | <b>N= NON ROHS Conform</b> |                              |  |  |
|              |                |                     |                   |                   |                        |                            | <b>BU= Bulk-Ware</b>         |  |  |
|              |                |                     |                   |                   |                        |                            |                              |  |  |

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## Soldering Profile Curve

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



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