



# DATA SHEET

## CHIP Wide Temperature Range 105°C

### Serie: I15005

Voltage:	16Volt	Range:	220 $\mu$ F
Impedance:	no specified	Dimension	8x10,5mm
Ripple Current:	150mA		

**CHIP Wide Temperature  
Range 105°C**

Serie No.: **I15005**

Customer:

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

# 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>16Volt</b>
Range:	<b>220µF</b>
Dimension; D x L mm	<b>8x10,5mm</b>
Impedance (Ω) max., at20°C, 100hKz	<b>no specified</b>
Ripple Current (mA rms) at 105°C, 100kHz	<b>150mA</b>

Ordering Code			
<b>160</b>	<b>Voltage</b>		
<b>221</b>	<b>Range</b>		
<b>D=</b>	<b>E</b>	<b>L=</b>	<b>4</b>

Operating Temperatur Range of -40°C ~ +85°C

Load Life of 1000~2000 hours at 85°C

<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)									
<b>Capacitance tolerance</b>	± 20% at 120Hz, 20°C										
<b>Dissipation factor max. (at 120Hz, 20°C)</b>	WV		4,0	6,3	10	16	25	35	50	63	100
	Tanδ	Ø4 ~ Ø10mm	0,42	0,30	0,26	0,22	0,16	0,14	0,21	0,12	0,12
		Ø12,5 ~ Ø16mm	0,45	0,38	0,34	0,30	0,26	0,22	0,18	0,14	0,12

<b>Low Temperatur characteristics ( Impedance ratio at 120Hz )</b>	WV		4,0	6,3	10	16	25	35	50	63	100
	Ø4 ~ Ø10mm	Z-25°C / Z+20°C	7	4	3	2	2	2	2	2	2
		Z-40°C / Z+20°C	15	8	6	4	4	3	3	3	4
	Ø12,5 ~ Ø16mm	Z-25°C / Z+20°C	7	5	4	3	2	2	2	2	2
Z-40°C / Z+20°C		17	12	10	8	5	4	3	3	3	

<b>Load Life ( after application of the rated voltage for 1000hrs at 105°C</b>	Leakage current	Less than specified value									
	Capacitance Change	Within ±20% of initial value									
		Within ±30% of initial value for 4V & 6,3V									
	Tanδ	Less than 200% of specified value									
<b>Shell life (at 85°C)</b>	Ø4 ~ , Ø6,3x5,4: 1000hours										
	After 1000hours no load test, leakage current, capacitance and tanδ are same as load life value.										

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<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

FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT						
Diameter	Capacitance	Frequency				
	$\mu\text{F}$	50Hz	120Hz	300Hz	1KHz	10KHz $\leq$
$\varnothing 4 \sim \varnothing 10\text{mm}$	0,1 ~68	0,70	1,00	1,17	1,36	1,50
	100 ~3300	0,85	1,00	1,08	1,20	1,30
$\varnothing 12,5 \sim \varnothing 16\text{mm}$	~68	0,75	1,00	1,35	1,57	2,00
	100 ~680	0,80	1,00	1,23	1,34	1,50
	1000 ~6800	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	$\varnothing 4 \times 5,4$	$\varnothing 5 \times 5,4$	$\varnothing 6,3 \times 5,4$	$\varnothing 6,3 \times 7,7$	$\varnothing 8 \times 6,2$	$\varnothing 8 \times 10,5$	$\varnothing 10 \times 10,5$	$\varnothing 10 \times 13,5$	$\varnothing 12,5 \times 13,5$	$\varnothing 12,5 \times 16$	$\varnothing 16 \times 16,5$
A	1,8	2,1	2,4	2,4	3,3	2,9	3,2	3,2	4,7	4,7	5,5
B	4,3	5,3	6,6	6,6	8,3	8,3	10,3	10,3	12,8	12,8	16,3
C	4,3	5,3	6,6	6,6	8,3	8,3	10,3	10,3	12,8	12,8	16,3
E +/-0.2	1,0	1,3	2,2	2,2	2,2	3,1	4,4	4,4	4,4	4,4	6,7
L	5,4	5,4	5,4	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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Voltage Ordering Code	Code
4,0	<b>4V0</b>
6,3	<b>6V3</b>
10	<b>100</b>
16	<b>160</b>
25	<b>250</b>
35	<b>350</b>
50	<b>500</b>
63	<b>630</b>
80	<b>800</b>
100	<b>101</b>

Diameter ordering Code D	Code
3mm	<b>3</b>
4mm	<b>A</b>
5mm	<b>B</b>
6,3mm	<b>C</b>
8mm	<b>E</b>
10mm	<b>G</b>
12,5mm	<b>I</b>
16mm	<b>K</b>

Height ordering Code L	Code
4mm	<b>A</b>
5,4mm	<b>0</b>
5,8mm	<b>1</b>
6,2mm	<b>2</b>
7,7mm	<b>3</b>
10,5mm	<b>4</b>
13,5mm	<b>5</b>
16mm	<b>6</b>
16,5mm	<b>7</b>

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## Ordering Informations

Serie	Voltage Code	Tolerance Code	Range Code	Size Code D	Size Code L	Special function	ROHS	Packing Code		
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<b>I15005</b>	<b>160</b>	<b>M</b>	<b>221</b>	<b>E</b>	<b>4</b>	<b>XX</b>	<b>R</b>	<b>TR</b>		
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look table	<b>M= ±20%</b>	Ordering Code Range	Look table Code D	Look table Code L	<b>XX=</b> No function	<b>R=</b> ROHS Conform <b>N=</b> NON ROHS Conform	<b>TR=</b> Tape Reel Packing <b>BU=</b> Bulk-Ware		
Voltage Code									

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## Soldering Profile Curve

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



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