

# CA45 型片式固体电解质钽电容器

## Type CA45 Chip Solid Electrolytic Tantalum Capacitor

执行标准 Executive Standard: Q/MM82A-2010

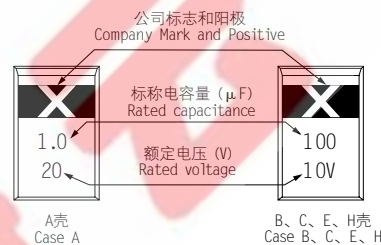


### 特征与用途 Characteristics and Usage

- 模压封装、密封性好、片式、体积小、重量轻、极性电容器；
- 电性能优良、稳定可靠、等效于VISHAY公司293D型；
- 适用于移动通讯、摄像机、程控交换机、计算机、汽车电子等各种电子设备的表面贴装直流或脉动电路。

- Molded, good sealability, chip, small profile, light weight, polarized capacitor.
- Good electrical performance, stable and reliable, equivalent to 293D of VISHAY.
- The product is suitable to surface mounted direct current or pulsating circuit in various electronic equipments for mobile communication, vidicon, program controlled exchanger, computer, and auto electronics.

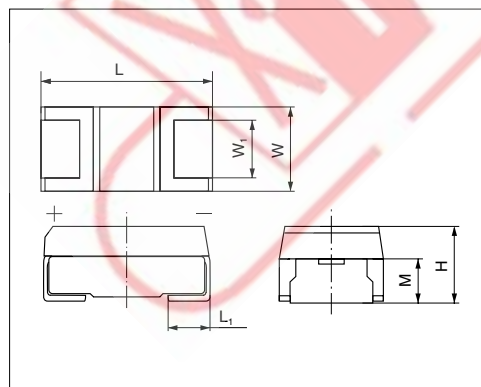
### 标志 MARKING:



### 主要技术性能 Main Technical Performance

- 温度范围：-55℃ ~ 125℃（> 85℃时，施加降额电压使用）；
- 额定电压、降额电压、标称电容量：见表2；
- 电容量允许偏差：±10%、±20%；
- 高低温特性：见表2；
- 外形尺寸及外壳代号：见图1和表1。

- Temperature range: -55℃~125℃ (when above 85℃, derated voltage is applied)
- Rated voltage, derated voltage and rated capacitance see Table 2.
- Capacitance tolerance: ±10%; ±20%;
- Characteristic at low and high temperature: see table 2
- Physical dimension and case code: see Figure 1 and table 1.



(产品标志中厂标符号  所在端对应的贴片为正极)  
(The end with  is the positive end)

图 1

表1 电容器的外形尺寸 Table 1 Physical dimension

外壳代号 Case code		外形尺寸 mm Physical dimension					
新云 XinYun	EIA	L	W	H	L <sub>1</sub>	W <sub>1</sub>	M
A	3216-18	3.2±0.2	1.6±0.2	1.6±0.2	0.65±0.2	1.2±0.2	1.0±0.2
B	3528-21	3.4±0.2	2.6±0.2	1.9±0.2	0.70±0.2	2.0±0.2	1.2±0.2
C	6032-28	5.8±0.3	3.2±0.3	2.5±0.3	1.35±0.2	2.2±0.2	1.45±0.2
E (D)*	7343-31	7.3±0.3	4.3±0.3	2.8±0.3	1.35±0.2	3.0±0.2	1.6±0.2
H(E、X)**	7343-43	7.3±0.3	4.3±0.3	4.1±0.3	1.35±0.2	3.0±0.2	1.6±0.2

注Note: \*E壳等同于KEMET、VISHAY和AVX公司的D壳产品尺寸；

The dimension of case E is equal to case D of KEMET, VISHAY and AVX .

\*\*H壳等同于KEMET公司的X壳、VISHAY和AVX公司的E壳产品尺寸。

The dimension of case H is equal to case X of KEMET, case E of VISHAY and AVX.

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表2 电容器的额定电压、降额电压、标称电容量、外壳代号、等效串联电阻及高温特性  
Table 2 Rated voltage, derated voltage, rated capacitance, case code, ESR and characteristic at low and high temperature

标称电容量 Rated capacitance $\mu F$	外壳代号 Case code	等效串联电阻 ESR max 100KHz 25°C $\Omega$	直流漏电流DCL max $\mu A$			电容量变化范围 Capacitance change range %		损耗角正切 max Dissipation factor max %		
			+25°C	+85°C	+125°C	-55°C/+85°C	+125°C	-55°C	+25°C	+85°C/+125°C
<b>额定电压4V (降额电压2.5V) Rated voltage 4V (derated voltage 2.5V)</b>										
3.3	A	8	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
4.7	A	8	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
6.8	A	8	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
10	B	4	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
10	A	8	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
15	B	3.5	0.6	6	7.5	$\pm 10$	$\pm 12$	8	6	8
15	A	6	0.6	6	7.5	$\pm 10$	$\pm 12$	8	6	8
22	C	3.2	0.9	8.8	11	$\pm 10$	$\pm 12$	8	6	8
22	B	5	0.9	8.8	11	$\pm 10$	$\pm 12$	8	6	8
22	A	6	0.9	8.8	11	$\pm 10$	$\pm 15$	8	6	8
33	C	2.2	1.3	13.2	16.5	$\pm 10$	$\pm 12$	8	6	8
33	B	3.5	1.3	13.2	16.5	$\pm 10$	$\pm 12$	8	6	8
33	A	6	1.3	13.2	16.5	$\pm 10$	$\pm 15$	9	6	8
47	C	2	1.9	18.8	23.5	$\pm 10$	$\pm 12$	8	6	8
47	B	3	1.9	18.8	23.5	$\pm 10$	$\pm 15$	8	6	8
47	A	4	1.9	18.8	23.5	$\pm 10$	$\pm 15$	15	10	12
68	E	1.1	2.7	27.2	34	$\pm 10$	$\pm 12$	8	6	8
68	C	2	2.7	27.2	34	$\pm 10$	$\pm 12$	8	6	8
68	B	4.2	2.7	27.2	34	$\pm 10$	$\pm 15$	8	6	8
68	A	5	2.7	27.2	34	$\pm 10$	$\pm 15$	22	15	18
100	E	0.9	4	40	50	$\pm 10$	$\pm 12$	10	8	10
100	C	1.5	4	40	50	$\pm 10$	$\pm 12$	10	8	10
100	B	2	4	40	50	$\pm 10$	$\pm 15$	15	10	12
100	A	6	4	40	50	$\pm 10$	$\pm 15$	30	20	24
150	E	1	6	60	75	$\pm 10$	$\pm 12$	10	8	10
150	C	1.5	6	60	75	$\pm 10$	$\pm 15$	10	8	10
150	B	3	6	60	75	$\pm 12$	$\pm 15$	18	12	15
220	E	1	8.8	88	110	$\pm 10$	$\pm 12$	10	8	10
220	C	1.5	8.8	88	110	$\pm 10$	$\pm 15$	10	8	10
220	B	2	8.8	88	110	$\pm 10$	$\pm 15$	22	15	18
330	H	0.7	13.2	132	165	$\pm 10$	$\pm 12$	12	10	12
330	E	0.9	13.2	132	165	$\pm 10$	$\pm 12$	12	10	12
330	C	1.7	13.2	132	165	$\pm 10$	$\pm 15$	15	10	12
470	H	0.7	18.8	188	235	$\pm 10$	$\pm 12$	12	10	12
470	E	0.7	18.8	188	235	$\pm 10$	$\pm 15$	12	10	12
680	H	0.7	27.2	272	340	$\pm 10$	$\pm 15$	15	12	15
680	E	0.7	27.2	272	340	$\pm 10$	$\pm 15$	21	14	17
1000	H	0.7	40	400	500	$\pm 10$	$\pm 15$	21	14	17
<b>额定电压6.3(6)V (降额电压4V) Rated voltage 6.3(6)V (derated voltage 4V)</b>										
2.2	A	8	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
3.3	A	8	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
4.7	A	8	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8



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续表2 Table 2-Continued

标称 电容量 Rated capacitance $\mu\text{F}$	外壳代号 Case code	等效 串联电阻 ESR max 100KHz 25°C $\Omega$	直流漏电流DCL max $\mu\text{A}$			电容量变化范围 Capacitance change range %		损耗角正切 max Dissipation factor max %		
			+25°C	+85°C	+125°C	-55°C/+85°C	+125°C	-55°C	+25°C	+85°C/+125°C
额定电压 <b>6.3 (6) V</b> (降额电压 <b>4V</b> ) Rated voltage 6.3 (6) V (derated voltage 4V)										
6.8	B	4.5	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
6.8	A	8	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
10	B	3.5	0.6	6.3	7.9	$\pm 10$	$\pm 12$	8	6	8
10	A	8	0.6	6.3	7.9	$\pm 10$	$\pm 12$	8	6	8
15	C	3	0.9	9.4	11.8	$\pm 10$	$\pm 12$	8	6	8
15	B	5	0.9	9.4	11.8	$\pm 10$	$\pm 12$	8	6	8
15	A	6	0.9	9.4	11.8	$\pm 10$	$\pm 15$	8	6	8
22	C	2.2	1.4	13.9	17.3	$\pm 10$	$\pm 12$	8	6	8
22	B	5	1.4	13.9	17.3	$\pm 10$	$\pm 12$	8	6	8
22	A	6	1.4	13.9	17.3	$\pm 10$	$\pm 15$	8	6	8
33	C	2.5	2.1	20.8	26	$\pm 10$	$\pm 12$	8	6	8
33	B	3.5	2.1	20.8	26	$\pm 10$	$\pm 15$	8	6	8
33	A	5	2.1	20.8	26	$\pm 10$	$\pm 15$	15	10	12
47	E	1.1	3	29.6	37	$\pm 10$	$\pm 12$	8	6	8
47	C	2	3	29.6	37	$\pm 10$	$\pm 12$	8	6	8
47	B	3	3	29.6	37	$\pm 10$	$\pm 15$	8	6	8
47	A	5	3	29.6	37	$\pm 10$	$\pm 15$	18	12	15
68	E	0.9	4.3	42.8	53.5	$\pm 10$	$\pm 12$	8	6	8
68	C	2	4.3	42.8	53.5	$\pm 10$	$\pm 12$	8	6	8
68	B	1.5	4.3	42.8	53.5	$\pm 10$	$\pm 15$	12	8	10
100	E	1.2	6.3	63	78.7	$\pm 10$	$\pm 12$	10	8	10
100	C	1.5	6.3	63	78.7	$\pm 10$	$\pm 15$	10	8	10
100	B	5	6.3	63	78.7	$\pm 10$	$\pm 15$	22	15	18
150	E	1	9.5	94.5	118	$\pm 10$	$\pm 12$	10	8	10
150	C	1.5	9.5	94.5	118	$\pm 10$	$\pm 15$	10	8	10
220	H	0.7	13.9	139	173	$\pm 10$	$\pm 12$	10	8	10
220	E	1	13.9	139	173	$\pm 10$	$\pm 12$	10	8	10
200	C	2.4	13.9	139	173	$\pm 10$	$\pm 15$	15	10	12
330	H	0.9	20.8	208	260	$\pm 10$	$\pm 12$	12	10	12
330	E	0.9	20.8	208	260	$\pm 10$	$\pm 15$	12	10	12
470	H	0.7	29.6	296	370	$\pm 10$	$\pm 15$	12	10	12
470	E	0.9	29.6	296	370	$\pm 10$	$\pm 15$	18	12	15
680	H	0.9	42.8	428	535	$\pm 10$	$\pm 15$	18	12	15
额定电压 <b>10V</b> (降额电压 <b>6.3V</b> ) Rated voltage 10V (derated voltage 6.3 V)										
1.5	A	8	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
2.2	A	8	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
3.3	A	9	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
4.7	B	4.5	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
4.7	A	8	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
6.8	B	3.5	0.7	6.8	8.5	$\pm 10$	$\pm 12$	8	6	8
6.8	A	8	0.7	6.8	8.5	$\pm 10$	$\pm 15$	8	6	8
10	C	3	1	10	12.5	$\pm 10$	$\pm 12$	8	6	8
10	B	6	1	10	12.5	$\pm 10$	$\pm 12$	8	6	8
10	A	8	1	10	12.5	$\pm 10$	$\pm 15$	8	6	8

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续表2 Table 2-Continued

标称 电容量 Rated capacitance $\mu\text{F}$	外壳代号 Case code	等效 串联电阻 ESR max 100KHz 25°C $\Omega$	直流漏电流DCL max $\mu\text{A}$			电容量变化范围 Capacitance change range %		损耗角正切 max Dissipation factor max %		
			+25°C	+85°C	+125°C	-55°C/+85°C	+125°C	-55°C	+25°C	+85°C/+125°C
<b>额定电压10V (降额电压6.3V) Rated voltage 10V (derated voltage 6.3 V)</b>										
15	C	2.5	1.5	15	18.7	$\pm 10$	$\pm 12$	8	6	8
15	B	5	1.5	15	18.7	$\pm 10$	$\pm 12$	8	6	8
15	A	8	1.5	15	18.7	$\pm 10$	$\pm 15$	12	8	10
22	C	1.6	2.2	22	27.5	$\pm 10$	$\pm 12$	8	6	8
22	B	5	2.2	22	27.5	$\pm 10$	$\pm 15$	8	6	8
22	A	10	2.2	22	27.5	$\pm 10$	$\pm 15$	15	10	12
33	E	1.1	3.3	33	41.2	$\pm 10$	$\pm 12$	8	6	8
33	C	2.5	3.3	33	41.2	$\pm 10$	$\pm 12$	8	6	8
33	B	4	3.3	33	41.2	$\pm 10$	$\pm 15$	8	6	8
47	E	0.9	4.7	47	58.7	$\pm 10$	$\pm 12$	8	6	8
47	C	2	4.7	47	58.7	$\pm 10$	$\pm 15$	8	6	8
47	B	2.4	4.7	47	58.7	$\pm 10$	$\pm 15$	12	8	10
68	E	1.5	6.8	68	85	$\pm 10$	$\pm 12$	8	6	8
68	C	2	6.8	68	85	$\pm 10$	$\pm 15$	8	6	8
68	B	5	6.8	68	85	$\pm 10$	$\pm 15$	15	10	12
100	H	0.8	10	100	125	$\pm 10$	$\pm 12$	10	8	10
100	E	1.2	10	100	125	$\pm 10$	$\pm 12$	10	8	10
100	C	1.7	10	100	125	$\pm 10$	$\pm 15$	10	8	10
150	H	0.8	15	150	187	$\pm 10$	$\pm 12$	10	8	10
150	E	1	15	150	187	$\pm 10$	$\pm 15$	10	8	10
150	C	2	15	150	187	$\pm 10$	$\pm 15$	15	10	12
220	H	1	22	220	275	$\pm 10$	$\pm 12$	10	8	10
220	E	1	22	220	275	$\pm 10$	$\pm 15$	10	8	10
330	H	0.9	33	330	412	$\pm 10$	$\pm 15$	12	10	12
330	E	1.2	33	330	412	$\pm 10$	$\pm 15$	15	10	12
470	H	0.5	47	470	587	$\pm 10$	$\pm 15$	15	10	12
<b>额定电压16(15)V (降额电压10V) Rated voltage 16(15)V (derated voltage 10 V)</b>										
1.0	A	10	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
1.5	A	8	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
2.2	A	12	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
3.3	B	5.5	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
3.3	A	9	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
4.7	B	4	0.8	7.5	9.4	$\pm 10$	$\pm 12$	8	6	8
4.7	A	8	0.8	7.5	9.4	$\pm 10$	$\pm 15$	8	6	8
6.8	C	3.6	1.1	10.9	13.6	$\pm 10$	$\pm 12$	8	6	8
6.8	B	6	1.1	10.9	13.6	$\pm 10$	$\pm 12$	8	6	8
6.8	A	9	1.1	10.9	13.6	$\pm 10$	$\pm 15$	8	6	8
10	C	2.5	1.6	16	20	$\pm 10$	$\pm 12$	8	6	8
10	B	6	1.6	16	20	$\pm 10$	$\pm 15$	8	6	8
10	A	10	1.6	16	20	$\pm 10$	$\pm 15$	12	8	10
15	C	1.8	2.4	24	30	$\pm 10$	$\pm 12$	8	6	8
15	B	5	2.4	24	30	$\pm 10$	$\pm 15$	8	6	8
22	E	1.1	3.5	35.2	44	$\pm 10$	$\pm 12$	8	6	8
22	C	3	3.5	35.2	44	$\pm 10$	$\pm 12$	8	6	8
22	B	5	3.5	35.2	44	$\pm 10$	$\pm 15$	9	6	8



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续表2 Table 2-Continued

标称 电容量 Rated capacitance $\mu\text{F}$	外壳代号 Case code	等效 串联电阻 ESR max 100KHz 25°C $\Omega$	直流漏电流DCL max $\mu\text{A}$			电容量变化范围 Capacitance change range %		损耗角正切 max Dissipation factor max %		
			+25°C	+85°C	+125°C	-55°C/+85°C	+125°C	-55°C	+25°C	+85°C/+125°C
<b>额定电压16(15)V (降额电压10V) Rated voltage 16(15)V (derated voltage 10 V)</b>										
33	E	0.9	5.3	52.8	66	$\pm 10$	$\pm 12$	8	6	8
33	C	2.5	5.3	52.8	66	$\pm 10$	$\pm 15$	8	6	8
47	E	1.5	7.5	75.2	94	$\pm 10$	$\pm 12$	8	6	8
47	C	2	7.5	75.2	94	$\pm 10$	$\pm 15$	8	6	8
68	E	1.5	10.9	109	136	$\pm 10$	$\pm 12$	8	6	8
68	C	3	10.9	109	136	$\pm 10$	$\pm 15$	12	8	10
100	H	0.8	16	160	200	$\pm 10$	$\pm 12$	10	8	10
100	E	1.2	16	160	200	$\pm 10$	$\pm 15$	10	8	10
150	H	1	24	240	300	$\pm 10$	$\pm 15$	10	8	10
150	E	1.8	24	240	300	$\pm 10$	$\pm 15$	15	10	12
220	H	1	35.2	352	440	$\pm 10$	$\pm 15$	15	10	12
<b>额定电压20V (降额电压13V) Rated voltage 20V (derated voltage 13 V)</b>										
0.68	A	12	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
1.0	A	10	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
1.5	A	16	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
2.2	B	5	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
2.2	A	12	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
3.3	B	4	0.7	6.6	8.2	$\pm 10$	$\pm 12$	8	6	8
3.3	A	9	0.7	6.6	8.2	$\pm 10$	$\pm 15$	8	6	8
4.7	C	3	0.9	9.4	11.7	$\pm 10$	$\pm 12$	8	6	8
4.7	B	6	0.9	9.4	11.7	$\pm 10$	$\pm 12$	8	6	8
4.7	A	10	0.9	9.4	11.7	$\pm 10$	$\pm 15$	9	6	8
6.8	C	2.4	1.4	13.6	17	$\pm 10$	$\pm 12$	8	6	8
6.8	B	6	1.4	13.6	17	$\pm 10$	$\pm 15$	8	6	8
6.8	A	12	1.4	13.6	17	$\pm 10$	$\pm 15$	12	8	10
10	C	4	2	20	25	$\pm 10$	$\pm 12$	8	6	8
10	B	6	2	20	25	$\pm 10$	$\pm 15$	8	6	8
15	E	1.1	3	30	37.5	$\pm 10$	$\pm 12$	8	6	8
15	C	4	3	30	37.5	$\pm 10$	$\pm 12$	8	6	8
15	B	6	3	30	37.5	$\pm 10$	$\pm 15$	9	6	8
22	E	0.9	4.4	44	55	$\pm 10$	$\pm 12$	8	6	8
22	C	3	4.4	44	55	$\pm 10$	$\pm 15$	8	6	8
33	E	1.5	6.6	66	82.5	$\pm 10$	$\pm 12$	8	6	8
33	C	3	6.6	66	82.5	$\pm 10$	$\pm 15$	9	6	8
47	H	0.8	9.4	94	117	$\pm 10$	$\pm 12$	8	6	8
47	E	1.5	9.4	94	117	$\pm 10$	$\pm 12$	8	6	8
47	C	2	9.4	94	117	$\pm 10$	$\pm 15$	12	8	10
68	H	0.8	13.6	136	170	$\pm 10$	$\pm 12$	8	6	8
68	E	1.5	13.6	136	170	$\pm 10$	$\pm 15$	8	6	8
100	H	1	20	200	250	$\pm 10$	$\pm 15$	10	8	10
100	E	2	20	200	250	$\pm 10$	$\pm 15$	12	8	10
150	H	1.5	30	300	375	$\pm 10$	$\pm 15$	15	10	12

**CA45**

续表2 Table 2-Continued

标称 电容量 Rated capacitance $\mu\text{F}$	外壳代号 Case code	等效 串联电阻 ESR max 100KHz 25°C $\Omega$	直流漏电流DCL max $\mu\text{A}$			电容量变化范围 Capacitance change range %		损耗角正切 max Dissipation factor max %		
			+25°C	+85°C	+125°C	-55°C/+85°C	+125°C	-55°C	+25°C	+85°C/+125°C
<b>额定电压25V (降额电压16V) Rated voltage 25V (derated voltage 16 V)</b>										
0.33	A	15	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.47	A	14	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.68	A	17	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
1.0	B	6.5	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
1.0	A	16	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
1.5	B	6.5	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
1.5	A	16	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
2.2	C	5	0.6	5.5	6.9	$\pm 10$	$\pm 12$	8	6	8
2.2	B	8	0.6	5.5	6.9	$\pm 10$	$\pm 12$	8	6	8
2.2	A	16	0.6	5.5	6.9	$\pm 10$	$\pm 15$	9	6	8
3.3	C	4	0.8	8.2	10.3	$\pm 10$	$\pm 12$	8	6	8
3.3	B	7	0.8	8.2	10.3	$\pm 10$	$\pm 12$	8	6	8
3.3	A	9	0.8	8.2	10.3	$\pm 12$	$\pm 20$	9	6	8
4.7	C	2.5	1.2	11.7	14.7	$\pm 10$	$\pm 12$	8	6	8
4.7	B	6	1.2	11.7	14.7	$\pm 10$	$\pm 15$	8	6	8
6.8	C	3	1.7	17	21.2	$\pm 10$	$\pm 12$	8	6	8
6.8	B	6	1.7	17	21.2	$\pm 10$	$\pm 15$	8	6	8
10	E	1.2	2.5	25	31.2	$\pm 10$	$\pm 12$	8	6	8
10	C	4	2.5	25	31.2	$\pm 10$	$\pm 12$	8	6	8
10	B	6	2.5	25	31.2	$\pm 12$	$\pm 20$	8	6	8
15	E	1.5	3.8	37.5	46.9	$\pm 10$	$\pm 12$	8	6	8
15	C	4	3.8	37.5	46.9	$\pm 10$	$\pm 15$	8	6	8
22	E	1.8	5.5	55	68.7	$\pm 10$	$\pm 12$	8	6	8
22	C	3.5	5.5	55	68.7	$\pm 12$	$\pm 20$	9	6	8
33	H	0.9	8.3	82.5	103	$\pm 10$	$\pm 12$	8	6	8
33	E	1.5	8.3	82.5	103	$\pm 10$	$\pm 15$	8	6	8
47	H	1.2	11.7	117	147	$\pm 10$	$\pm 15$	8	6	8
47	E	1.5	11.7	117	147	$\pm 12$	$\pm 20$	8	6	8
68	H	1.2	17	170	212	$\pm 12$	$\pm 20$	8	6	8
100	H	0.9	25	250	313	$\pm 12$	$\pm 20$	12	8	10
<b>额定电压35 (32) V (降额电压20V) Rated voltage 35(32)V (derated voltage 20 V)</b>										
0.10	A	24	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.15	A	21	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.22	A	18	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.33	A	15	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.47	B	10	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.47	A	18	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.68	B	8	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.68	A	17	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
1.0	B	6.5	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
1.0	A	16	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
1.5	C	4.5	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
1.5	B	12	0.5	5	6.3	$\pm 10$	$\pm 12$	8	6	8
1.5	A	16	0.5	5	6.3	$\pm 12$	$\pm 20$	9	6	8



**CA45**

续表2 Table 2-Continued

标称 电容量 Rated capacitance $\mu\text{F}$	外壳代号 Case code	等效 串联电阻 ESR max 100KHz 25℃ $\Omega$	直流漏电流DCL max $\mu\text{A}$			电容量变化范围 Capacitance change range %		损耗角正切 max Dissipation factor max %		
			+25℃	+85℃	+125℃	-55℃/+85℃	+125℃	-55℃	+25℃	+85℃/+125℃
<b>额定电压35 (32) V (降额电压20V) Rated voltage 35(32)V (derated voltage 20 V)</b>										
2.2	C	3.5	0.8	7.7	9.6	±10	±12	8	6	8
2.2	B	8	0.8	7.7	9.6	±10	±12	8	6	8
3.3	C	2.5	1.2	11.5	14.4	±10	±12	8	6	8
3.3	B	7	1.2	11.5	14.4	±12	±20	8	6	8
4.7	E	1.5	1.6	16.4	20.5	±10	±12	8	6	8
4.7	C	5	1.6	16.4	20.5	±10	±12	8	6	8
6.8	E	1.3	2.4	23.8	29.7	±10	±12	8	6	8
6.8	C	3	2.4	23.8	29.7	±10	±12	8	6	8
10	H	1	3.5	35	43.7	±10	±12	8	6	8
10	E	1.1	3.5	35	43.7	±10	±12	8	6	8
10	C	3.5	3.5	35	43.7	±10	±15	9	6	8
15	H	1.1	5.3	52.5	65.6	±10	±12	8	6	8
15	E	2	5.3	52.5	65.6	±10	±15	8	6	8
22	H	1	7.7	77	96.2	±10	±15	8	6	8
22	E	1.8	7.7	77	96.2	±10	±15	8	6	8
33	H	1.2	11.6	116	144	±10	±15	8	6	8
33	E	2	11.6	116	144	±12	±20	9	6	8
47	H	1.2	16.5	164	206	±12	±20	8	6	8
<b>额定电压40V (降额电压25V) Rated voltage 40V (derated voltage 25 V)</b>										
0.10	A	24	0.5	5	6.3	±10	±12	6	4	6
0.15	A	21	0.5	5	6.3	±10	±12	6	4	6
0.22	A	18	0.5	5	6.3	±10	±12	6	4	6
0.33	B	15	0.5	5	6.3	±10	±12	6	4	6
0.33	A	20	0.5	5	6.3	±10	±12	6	4	6
0.47	B	10	0.5	5	6.3	±10	±12	6	4	6
0.47	A	18	0.5	5	6.3	±10	±15	6	4	6
0.68	C	8	0.5	5	6.3	±10	±12	6	4	6
0.68	B	15	0.5	5	6.3	±10	±12	6	4	6
0.68	A	18	0.5	5	6.3	±10	±15	6	4	6
1.0	C	6.5	0.5	5	6.3	±10	±12	6	4	6
1.0	B	10	0.5	5	6.3	±10	±15	6	4	6
1.0	A	12	0.5	5	6.3	±10	±15	6	4	6
1.5	C	4.5	0.6	6	7.5	±10	±12	8	6	8
1.5	B	10	0.6	6	7.5	±10	±15	8	6	8
2.2	E	3.5	0.9	8.8	11	±10	±12	8	6	8
2.2	C	7	0.9	8.8	11	±10	±12	8	6	8
3.3	E	2.5	1.3	13.2	16.5	±10	±12	8	6	8
3.3	C	5	1.3	13.2	16.5	±10	±12	8	6	8
4.7	E	1.5	1.9	18.8	23.5	±10	±12	8	6	8
4.7	C	6	1.9	18.8	23.5	±10	±15	8	6	8
6.8	E	1.3	2.7	27.2	34	±10	±12	8	6	8
6.8	C	2	2.7	27.2	34	±10	±15	9	6	8
10	H	1.3	4	40	50	±10	±12	8	6	8
10	E	2	4	40	50	±10	±15	8	6	8

续表2 Table 2-Continued

标称 电容量 Rated capacitance $\mu\text{F}$	外壳代号 Case code	等效 串联电阻 ESR max 100KHz 25 $^{\circ}\text{C}$ $\Omega$	直流漏电流DCL max $\mu\text{A}$			电容量变化范围 Capacitance change range %		损耗角正切 max Dissipation factor max %		
			+25 $^{\circ}\text{C}$	+85 $^{\circ}\text{C}$	+125 $^{\circ}\text{C}$	-55 $^{\circ}\text{C}/+85^{\circ}\text{C}$	+125 $^{\circ}\text{C}$	-55 $^{\circ}\text{C}$	+25 $^{\circ}\text{C}$	+85 $^{\circ}\text{C}/+125^{\circ}\text{C}$
<b>额定电压40V (降额电压25V) Rated voltage 40V (derated voltage 25 V)</b>										
15	H	1.8	6	60	75	$\pm 10$	$\pm 15$	8	6	8
15	E	2.5	6	60	75	$\pm 10$	$\pm 15$	9	6	8
22	H	1.5	8.8	88	110	$\pm 10$	$\pm 15$	12	8	10
<b>额定电压50V (降额电压32V) Rated voltage 50V (derated voltage 32 V)</b>										
0.10	A	22	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.15	B	17	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.15	A	28	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.22	B	14	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.22	A	18	0.5	5	6.3	$\pm 10$	$\pm 15$	6	4	6
0.33	B	12	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.33	A	20	0.5	5	6.3	$\pm 10$	$\pm 15$	6	4	6
0.47	C	8	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.47	B	16	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.47	A	20	0.5	5	6.3	$\pm 10$	$\pm 15$	6	4	6
0.68	C	7	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
0.68	B	15	0.5	5	6.3	$\pm 10$	$\pm 15$	6	4	6
0.68	A	20	0.5	5	6.3	$\pm 10$	$\pm 15$	6	4	6
1.0	C	6	0.5	5	6.3	$\pm 10$	$\pm 12$	6	4	6
1.0	B	10	0.5	5	6.3	$\pm 10$	$\pm 15$	6	4	6
1.5	E	4	0.8	7.5	9.4	$\pm 10$	$\pm 12$	8	6	8
1.5	C	8	0.8	7.5	9.4	$\pm 10$	$\pm 12$	8	6	8
2.2	E	2.5	1.1	11	13.7	$\pm 10$	$\pm 12$	8	6	8
2.2	C	7	1.1	11	13.7	$\pm 10$	$\pm 12$	8	6	8
3.3	E	2	1.7	16.5	20.6	$\pm 10$	$\pm 12$	8	6	8
3.3	C	5	1.7	16.5	20.6	$\pm 10$	$\pm 15$	8	6	8
4.7	E	1.5	2.4	23.5	29.4	$\pm 10$	$\pm 12$	8	6	8
4.7	C	2	2.4	23.5	29.4	$\pm 10$	$\pm 15$	9	6	8
6.8	H	1.5	3.4	34	42.5	$\pm 10$	$\pm 12$	8	6	8
6.8	E	2	3.4	34	42.5	$\pm 10$	$\pm 15$	8	6	8
10	H	1.8	5	50	62.5	$\pm 10$	$\pm 15$	8	6	8
10	E	2	5	50	62.5	$\pm 10$	$\pm 15$	8	6	8
15	H	1.8	7.5	75	93.7	$\pm 10$	$\pm 15$	8	6	8

注Note: 1.电容量、损耗角正切测量条件: 测量电压:  $U_{\text{L}}=2.2_{-1.0}^0\text{V}$ ,  $U_{\text{L}}=1.0_{-0.5}^0\text{V}$  (有效值); 测量频率:  $(100 \pm 5)\text{Hz}$ 。

Measuring condition of capacitance and dissipation factor: measuring voltage,  $U_{\text{L}}=2.2_{-1.0}^0\text{V}$ ,  $U_{\text{L}}=1.0_{-0.5}^0\text{V}$  (rms), measuring frequency:  $(100 \pm 5)\text{Hz}$ .

2.漏电流测量条件: 施加额定电压测量, 充电时间不超过5min (测量125 $^{\circ}\text{C}$ 漏电流时, 施加降额电压测量)。

DCL measuring condition: rated voltage is applied. Charging time does not exceed 5 minutes (when measuring leakage current at 125 $^{\circ}\text{C}$ , derated voltage is applied).

3.等效串联电阻 (ESR) 测量条件: 测量频率:  $(100 \pm 5)\text{KHz}$ ;  $U_{\text{L}}=2.2_{-1.0}^0\text{V}$ ,  $U_{\text{L}}=1.0_{-0.5}^0\text{V}$  (有效值)。

ESR measuring condition: measuring frequency:  $(100 \pm 5)\text{KHz}$ ;  $U_{\text{L}}=2.2_{-1.0}^0\text{V}$ ,  $U_{\text{L}}=1.0_{-0.5}^0\text{V}$  (rms).



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