STANDARD
标准品

- Operating with wide temperature range –55~+105℃
  适用于 –55~+105° C 的宽温范围
- Load life of 2000 hours
  负荷寿命2000 小时
- Comply with the RoHS directive
  符合 RoHS 指令

□ SPECIFICATIONS 特性表

Items 项目	Characteristics 主要特性
Operation Temperature Range 使用温度范围	6.3~100V:-55~+105℃ 160-400V:-40~+105℃ 450V:-25~+105℃
Voltage Range 额定工作电压范围	4 ~ 450V
Capacitance Range 静电容量范围	0.1 ~ 6800 μF
Capacitance Tolerance 静电容量允许偏差	± 20% at 120Hz, 20°C

Leakage Current 漏电流

Rated Voltage 额定工作电压	6.3 ~ 100V		160 ~ 450V
Case size 尺寸	Ø4~Ø10	Ø12.5~Ø16	Ø6.3~Ø16
Time 时间	after 2min. (application of rated voltage) 2 分钟后（施加额定工作电压）	after 2min. (application of rated voltage) 2分钟后（施加额定工作电压）	after 5min.(application of ratedvoltage) 5分钟后（施加额定工作电压）
Leakage current 漏电流	≤ 0.01CV or 3 μA, whichever is greater ≤ 0.01CV 或 3μA，取较大值	≤ 0.03CV or 4 μA, whichever is greater ≤ 0.03CV 或 4μA，取较大值	≤0.04CV+100μA

Dissipation Factor (tan δ) 损耗角正切

Measurement frequency 测试频率: 120Hz, Temperature 温度: 20°C

Rated Voltage(V) 额定工作电压		4	6.3	10	16	25	35	50	63	100	160~250	350~450
tan δ(max.) 最大损耗角正切	Ø4~Ø10	0.35	0.30	0.24	0.20	0.18	0.16	0.14	0.14	0.14	0.20	0.25
	Ø12.5~Ø16	0.40	0.38	0.34	0.30	0.28	0.22	0.18	0.16	0.16	0.20	0.25

Stability at Low Temperature 低温特性

Measurement frequency 测试频率: 120Hz

Rated Voltage (V) 额定工作电压			4	6.3	10	16	25	35	50~63	100	160~250	350~450
Impedance Ratio 阻抗比 ZT/Z20 (max.)	Ø4~Ø10	Z(-25℃)/Z(20℃)	7	4	3	2	2	2	2	3	2	3
		Z(-55℃)/Z(20℃)	15	8	6	4	4	3	3	4	3	6
	Ø12.5~Ø16	Z(-25℃)/Z(20℃)	7	5	4	3	2	2	2	2	2	4
		Z(-55℃)/Z(20℃)	17	12	10	8	5	4	3	3	6	10

Load Life 高温负荷特性

After 2000 hrs. application of the rated voltage at 105℃, they meet the characteristics listed below.
在 105℃ 环境中施加额定工作电压2000 小时后，电容器的特性符合下表的要求。

Capacitance Change 静电容量变化率	Within ±20% of initial value (Within ±30% of initial value for capacitors of 10V or less) 初始值的±20% 以内（≤10V 为初始值的±30%以内）
Dissipation Factor 损耗角正切	200% or less of initial specified value 不大于规范值的200%
Leakage Current漏电流	initial specified value or less 不大于规范值

Shelf Life 高温贮存特性

After leaving capacitors under no load at 105℃ for 1000 hours, they meet the specified value for load life characteristics listed above. 在105℃ 环境中无负荷放置1000 小时后，电容器的特性符合高温负荷特性中所列的规定值。

Resistance to Soldering Heat 耐焊接热特性

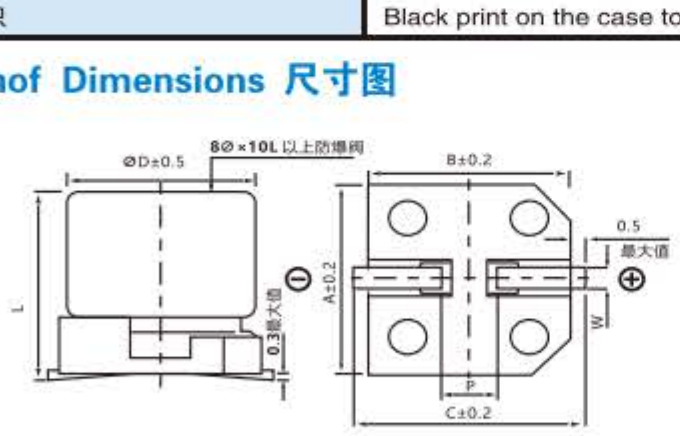
After reflow soldering and restored at room temperature, they meet the characteristics listed below.
经过回流焊并冷却至室温后，电容器的特性符合下表的要求。

Capacitance Change 静电容量变化率	Within ±10% of initial value 初始值的±10%以内
Dissipation Factor 损耗角正切	initial specified value or less 不大于规范值
Leakage Current漏电流	initial specified value or less 不大于规范值

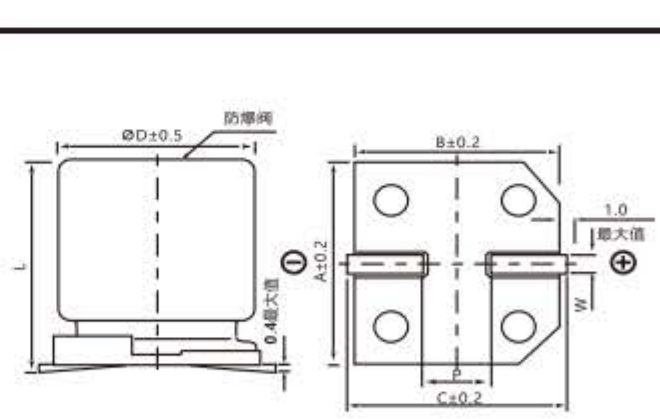
Marking 标识

Black print on the case top. 铝壳顶部黑字印刷。

□ Diagramof Dimensions 尺寸图



ΦD=4~10 适用



Φ12.5 以上适用

□ DIMENSIONS (Unit: mm) 尺寸表

DXL	4X5.4	5X5.4	6.3X4.5	6.3X5.4	6.3X7.7	8X10.5	10X10.5	10X13.5	12.5X13.5	12.5X16	16X16.5
A	4.3	5.3	6.6	6.6	6.6	8.3	10.3	10.3	13.0	13.0	17.0
B	4.3	5.3	6.6	6.6	6.6	8.3	10.3	10.3	13.0	13.0	17.0
C	5.1	5.9	7.2	7.2	7.2	9.2	11.2	11.2	13.7	13.7	18.0
P±0.2	1.0	1.5	2.0	2.0	2.0	3.1	4.4	4.4	4.4	4.4	6.4
L	5.4±0.3	5.4±0.3	4.5±0.3	5.4±0.3	7.7±0.3	10.5±0.5	10.5±0.5	13.5±0.5	13.5±0.5	16±0.5	16.5±0.5

□ DRAWING (Unit: mm) 外形图

□ DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT 规格尺寸及最大允许纹波电流

WV / μF / Code 代码		4		6.3		10		16		25	
		0G		0J		1A		1C		1E	
4.7	4R7							4 × 5.4	13	4 × 5.4	14
10	100							4 × 5.4	19	5 × 5.4 (4 × 5.4)	23 (16)
22	220	4 × 5.4	20	4 × 5.4	23	5 × 5.4 (4 × 5.4)	29 (20)	5 × 5.4 (4 × 5.4)	32 (25)	6.3 × 5.4 (5 × 5.4)	39 (32)
33	330	5 × 5.4 (4 × 5.4)	30 (25)	5 × 5.4 (4 × 5.4)	32 (30)	5 × 5.4 (4 × 5.4)	35 (22)	6.3 × 5.4 (5 × 5.4)	45 (35)	6.3 × 5.4 (5 × 5.4)	48 (35)
47	470	5 × 5.4 (4 × 5.4)	36 (30)	5 × 5.4 (4 × 5.4)	38 (35)	5 × 5.4	38	6.3 × 5.4 (5 × 5.4)	55 (40)	6.3 × 5.4	60
100	101	6.3 × 5.4 (5 × 5.4)	60 (49)	6.3 × 5.4 (5 ×5.4)	65 (54)	6.3 × 5.4 (5 × 5.4)	70 (60)	6.3 × 5.4 (6.3 × 4.5)	80 (55)	6.3 × 7.7 (6.3 × 5.4)	100 (80)
150	151	6.3 × 5.4	70	6.3 × 5.4	55	6.3 × 5.4	62	6.3 × 7.7	105	8 × 10.5 (6.3 × 7.7)	140 (120)
220	221	6.3 × 5.4	85	6.3 × 7.7 (6.3 × 5.4)	120 (95)	6.3 × 7.7 (6.3 × 5.4) (6.3 × 4.5)	120 (95) (60)	8 × 10.5 (6.3 × 7.7)	180 (120)	8 × 10.5	200
330	331	6.3 × 7.7	100	6.3 × 7.7	120	8 × 10.5 (6.3 × 7.7)	200 (135)	8 × 10.5	220	10 × 10.5 (8 × 10.5)	240 (250)
470	471	6.3 × 7.7	105	8 × 10.5 (6.3 × 7.7)	230 (120)	6.3 × 7.7 (8 × 10.5)	120 (230)	10 × 10.5 (8 × 10.5)	300 (270)	10 × 10.5	280
680	681	8 × 10.5	210	8 × 10.5	230	10 × 10.5 (8 × 10.5)	270 (220)	10 × 10.5	315	10 × 13.5	400
1000	102	8 × 10.5	230	10 × 10.5 (8 × 10.5)	340 (290)	10 × 10.5	315	12.5 × 13.5 (10 × 13.5) (10 × 10.5)	500 (390) (340)	12.5 × 13.5	580
1500	152	10 × 10.5	315	10 × 13.5 (10 × 10.5)	450 (410)	10 × 13.5	460	12.5 × 13.5	550	12.5 × 16	850
2200	222	10 × 13.5 (10 × 10.5)	440 (340)	12.5 × 13.5 (10 × 13.5)	620 (500)	12.5 × 13.5	680	16 × 16.5 (12.5 × 16)	950 (750)	16 × 16.5	1050
3300	332	10 × 13.5	490	12.5 × 16 (12.5 × 13.5)	700 (660)	16 × 16.5	1000	16 × 16.5	1000		
4700	472	12.5 × 13.5	600	16 × 16.5	1000					Case size 尺寸	Ripple current 纹波电流
6800	682	16 × 16.5 (12.5 × 16)	950 (650)								

WV / μF / Code 代码		35		50		63		100	
		1V		1H		1J		2A	
0.1	0R1			4 × 5.4	2	4 × 5.4	2		
0.22	R22			4 × 5.4	4	4 × 5.4	4		
0.33	R33			4 × 5.4	4	4 × 5.4	4		
0.47	R47			4 × 5.4	5	4 × 5.4	5		
1	010			4 × 5.4	8	4 × 5.4	8	4 × 5.4	8
2.2	2R2			4 × 5.4	11	4 × 5.4	11	6.3 × 5.4 (5 × 5.4)	14 (12)
3.3	3R3	4 × 5.4	13	4 × 5.4	14	5 × 5.4	14	6.3 × 7.7 (6.3 × 5.4)	32 (20)
4.7	4R7	4 × 5.4	15	5 × 5.4 (4 × 5.4)	19 (14)	5 × 5.4	19	6.3 × 7.7 (6.3 × 5.4)	35 (21)
10	100	5 × 5.4 (4 × 5.4)	25 (18)	6.3 × 5.4 (5 × 5.4)	31 (20)	6.3 × 7.7 (6.3 × 5.4)	39 (24)	8 × 10.5 (6.3 × 7.7)	77 (35)
22	220	6.3 × 5.4 (5 × 5.4)	42 (34)	6.3 × 7.7 (6.3 × 5.4)	51 (42)	8 × 10.5 (6.3 × 7.7)	98 (49)	10 × 10.5 (8 × 10.5)	126 (84)
33	330	6.3 × 5.4	50	6.3 × 7.7	60	8 × 10.5	112	10 × 10.5	133
47	470	6.3 × 7.7 (6.3 × 5.4) (6.3 × 4.5)	78 (58) (50)	8 × 10.5 (6.3 × 7.7)	120 (63)	10 × 10.5 (8 × 10.5)	160 (119)	12.5 × 13.5 (10 × 13.5) (10 × 10.5)	250 (160) (140)
68	680					Case size 尺寸	Ripple current 纹波电流	12.5 × 13.5 (10 × 13.5)	300 (180)

•Case size ØD×L(mm), ripple current (mA rms) at 105°C, 120Hz •尺寸ØD×L(mm), 纹波电流(mA rms)于105°C, 120Hz

□ DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT 规格尺寸及最大允许纹波电流

WV / μF / Code 代码		35		50		63		100		160	
		1V		1H		1J		2A		2C	
22	220									10 × 13.5	50
33	330									12.5 × 13.5	95
47	470									12.5 × 13.5 (16 × 16.5)	205 (240)
100	101	8 × 10.5 (6.3 × 7.7)	150 (92)	10 × 10.5 (8 × 10.5)	180 (160)	12.5 × 13.5 (10 × 13.5) (10 × 10.5)	270 (210) (196)	16 × 16.5 (12.5 x 13.5)	450 (380)	16 × 16.5	250
150	151	8 × 10.5	185	10 × 10.5	200	10 × 13.5	225				
220	221	10 × 10.5 (8 × 10.5)	250 (220)	10 × 13.5 (10 × 10.5)	280 (220)	16 × 16.5 (12.5 × 13.5)	560 (470)	16 × 16.5	550		
330	331	10 × 10.5	300	16 × 16.5 (12.5 × 13.5) (10 × 13.5)	600 (420) (295)	16 × 16.5 (12.5 × 16)	700 (510)				
470	471	12.5 × 13.5 (10 × 13.5) (10 × 10.5)	520 (375) (310)	16 × 16.5 (12.5 × 16) (12.5 × 13.5)	700 (520) (470)	16 × 16.5	750				
680	681	12.5 × 13.5	530	16 × 16.5	750						
1000	102	16 × 16.5 (12.5 × 16)	750 (600)							Case size 尺寸	Ripple current 纹波电流
1500	152	16 × 16.5	750								

WV / μF / Code 代码		200		250		350		400		450	
		2D		2E		2V		2G		2W	
3.3	3R3							10 × 13.5 (8 × 10.5)	40 (35)	10 × 13.5 (8 × 12.5)	40 (38)
4.7	4R7			10 × 13.5	75	10 × 13.5	85	10 × 13.5 (12.5 × 13.5)	45 (48)	10 × 13.5 (12.5 × 13.5)	42 45
10	100	10 × 13.5	75	10 × 13.5	75	12.5 × 13.5	105	12.5 × 13.5	50	12.5 × 13.5	55
22	220	12.5 × 13.5	105	12.5 × 13.5	105	16 × 16.5	130	16 × 16.5	85	16 × 16.5	85
33	330	12.5 × 13.5	120	16 × 16.5	135					Case size 尺寸	Ripple current 纹波电流
47	470	16 × 16.5	220								

•Case size ∅D×L(mm), ripple current (mA rms) at 105°C, 120Hz •尺寸∅D×L(mm), 纹波电流(mA rms)于105°C, 120Hz

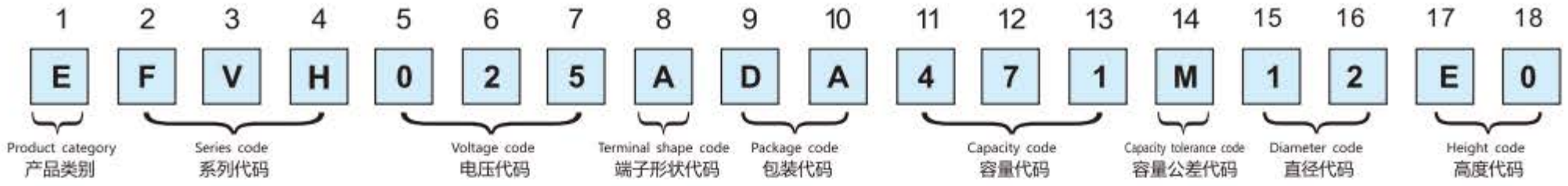
□ FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT 纹波电流频率补偿系数

Frequency 频率			50Hz	120Hz	300Hz	1KHz	10KHz~
Coefficient 系数	∅4 ~ ∅10	0.1 ~ 68μF	0.70	1.00	1.17	1.36	1.50
		100 ~ 3300μF	0.85	1.00	1.08	1.20	1.30
	∅12.5 ~ ∅16	~ 68μF	0.75	1.00	1.35	1.57	2.00
		100 ~ 680μF	0.80	1.00	1.23	1.34	1.50
		1000 ~ 6800μF	0.85	1.00	1.10	1.13	1.15

- The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime wiht every 10°C rise.When long life performance is required in actual use,the rms ripple current has to be reduced.
- 铝电解电容器由于在纹波电流叠加时自我发热，温度上升而老化，每升温10°C寿命减少一半；要想保持长寿命请在使用过程中降低纹波电流。

- Taping specifications are given in page 17 "Taping Specifications". 编带标准请参阅第 17 页 "编带标准"。
- Please refer to page 18 "Package Quantity" for the minimum package quantity. 最小包装数量请参阅第 18页 "包装数量"。

SMD EXPLANATION OF PART NUMBERS
贴片产品编码规则



(2、3、4)

Series 系列
FVE
FVH
FVA
FVZ
FVR
FVL
FVM
FVU
FVG
FVB
FVN
FVD
FVC

(5、6、7)

Voltage (w.v) 电压	Code 代码
4	4R0
6.3	6R3
10	010
16	016
25	025
35	035
50	050
63	063
100	100
160	160
250	250
350	350
400	400

(11、12、13)

Capacitance (uF) 静电容量	Code 代码
0.1	0R1
0.22	R22
1	010
4.7	4R7
10	100
47	470
100	101
470	471
1000	102
4700	472
10000	103

(14)

Cap.Tolerance (%) 容量允许	Code 代码
±10	K
±20	M

(8)

Tape 端子类型	Code 代码
No dummy terminal 无辅助端子	A
With dummy terminal 有辅助端子	G

(15、16)

Diameter (□) 直径	Code 代码
4	04
5	05
6.3	06
8	08
10	10
12.5	12
16	16
18	18

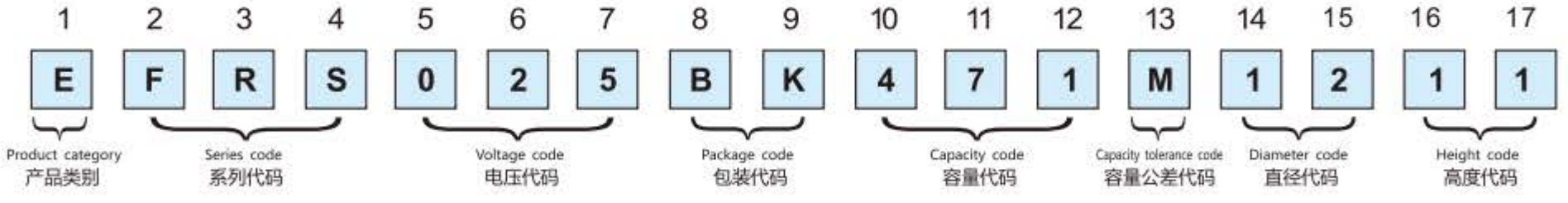
(17、18)

Length (mm) 高度	Code 代码
4.5	45
5.4	54
5.8	58
6.5	65
7.7	77
10.2	A0
10.5	B0
13.5	E0
16	G5
16.5	H0
21.5	N0

(9、10)

Packaging 包装要求		External diameter 纸盘外径 □(mm)	Fit size 适合尺寸 □D(mm)	Code 代码
Braiding 编带	Paper tray 纸盘	380	∅D4~18	DA
		330	∅D4~18	DB
	Glue tray 胶盘	380	∅D4~10	RA
	Blister box 吸塑盒	-	∅D12.5~18	TR

Radial EXPLANATION OF PART NUMBERS
插件产品编码规则



(2、3、4)

Series 系列
FRA
FRS
FRU
FRK
FBR
FBU

(5、6、7)

Voltage (w.v) 电压	Code 代码
4	4R0
6.3	6R3
10	010
16	016
25	025
35	035
50	050
63	063
100	100
160	160
250	250
350	350
400	400

(10、11、12)

Capacitance (uF) 静电容量	Code 代码
0.1	0R1
0.22	R22
1	010
4.7	4R7
10	100
47	470
100	101
470	471
1000	102
4700	472
10000	103

(13)

Cap.Tolerance (%) 容量允许	Code 代码
±10	K
±20	M

(8、9)

Packaging 包装形式	Code 代码
Long-legged bulk长脚散装	BK
Long-legged taping长脚编带	BA

(14、15)

Diameter (∅) 直径	Code 代码
4	04
5	05
6.3	06
8	08
10	10
12.5	12
16	16
18	18

(16、17)

Length (mm) 高度	Code 代码
4.5	04
5.5	05
6.0	06
6.5	06
7.0	07
8.0	08
10	10
11	11
11.5	11
12	12
16	16

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Aluminium Electrolytic Capacitors - SMD ***category:***

Click to view products by FOLLON ***manufacturer:***

Other Similar products are found below :

ULV2H4R7MNL1GS ULV2H1R8MNL1GS EMZA500ARA221MJA0G UCX1V471MNQ1MS 10SVP120M DV100M050C055ETR AEH1012471M016R GVT1C337M0608CNVC EMK1EM331FB0D00R EMF1CM221FB0D00R EMF1CM331FB0D00R EMF1CM471FB0D00R EMK1JM101GB0D00R EMK1AM102GB0D00R EMK1HM221GB0D00R DV221M025E077ETR RVT1A101M0505 GVZ1H101M0607 CK1E100M0405 GVM1E331M0607 VT10UF100V167RV0127 VT100UF16V167RV0124 CS100UF35V167RV0155 CK220UF16V167RV0142 VT10UF16V167RV0128 VT22UF35V167RV0131 CS470UF10V167RV0150 CK100UF16V167RV0138 CK220UF10V167RV0141 RVT330UF25V167RV0055 CS47UF16V167RV0152 VT470UF16V167RV0135 CS100UF10V167RV0144 126RV0017 VT47UF35V167RV0137 CS220UF35V167RV0148 126RV0010 126RV0009 VT220UF25V167RV160 VT220UF16V167RV0088 126RV0012 126RV0011 126RV0013 126RV0018 126RV0008 126RV0015 126RV0021 126RV0006 126RV0007 126RV0016