



FRA Series

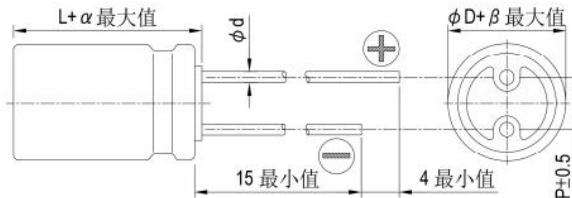
- 105°C 2000hours assured
105°C 2000H寿命保证
- Ultea low ESR wtih large permissible ripple current
极低等效串联电阻(ESR)并可承受大纹波电流
- RoHS compliance 符合RoHS指令



Specifications 特性表

Items 项目	Characteristics 主要特性								
Operation Temperature Range 使用温度范围	-55°C~105°C								
Voltage Range 额定电压范围	2.5~35V								
Capacitance Range 额定容量范围	22~1500								
Capacitance Tolerance 额定容量容许误差值	±20% at 120Hz, 20°C								
Dissipation Factor (Tan δ) 损失角	Standard Ratings 标准品一览表								
ESR 等效串联电阻 (ESR)	Standard Ratings 标准品一览表								
Leakage Current 漏电流	Standard Ratings 标准品一览表								
Endurance 耐久性	<p>After 2000hrs. Application of the rated voltage at 105 °C , returned to 20 °C for testing, they meet the characteristics listed below.</p> <p>在105°C 下连续施加额定电压2000小时后, 返回20°C进行测试时, 满足以下项目</p> <table border="1"> <tr> <td>Capacitance Change 静电容量变化率</td><td>Within ±20% of initial value ≤初始值的±20%</td></tr> <tr> <td>Tan δ 损失角</td><td>Less than 150% of specified value ≤初始值的150%</td></tr> <tr> <td>ESR 等效串联电阻</td><td>Less than 150% of specified value ≤初始值的150%</td></tr> <tr> <td>Leakage Current 漏电流</td><td>Within specified value ≤初始规格值</td></tr> </table>	Capacitance Change 静电容量变化率	Within ±20% of initial value ≤初始值的±20%	Tan δ 损失角	Less than 150% of specified value ≤初始值的150%	ESR 等效串联电阻	Less than 150% of specified value ≤初始值的150%	Leakage Current 漏电流	Within specified value ≤初始规格值
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Leakage Current 漏电流	Within specified value ≤初始规格值								
Moisture Resistance 耐湿无负荷	<p>After 1000 hours in an environment of 60 °C , 90~95% humidity, return to 20 °C for testing. they meet the characteristics listed below.</p> <p>在60°C, 湿度90~95%环境中1000H后, 返回20°C进行测试, 需满足以下项目</p> <table border="1"> <tr> <td>Capacitance Change 静电容量变化率</td><td>Within ±20% of initial value ≤初始值的±20%</td></tr> <tr> <td>Tan δ 损失角</td><td>Less than 150% of specified value ≤初始值的150%</td></tr> <tr> <td>ESR 等效串联电阻</td><td>Less than 150% of specified value ≤初始值的150%</td></tr> <tr> <td>Leakage Current 漏电流</td><td>Within specified value ≤初始规格值</td></tr> </table>	Capacitance Change 静电容量变化率	Within ±20% of initial value ≤初始值的±20%	Tan δ 损失角	Less than 150% of specified value ≤初始值的150%	ESR 等效串联电阻	Less than 150% of specified value ≤初始值的150%	Leakage Current 漏电流	Within specified value ≤初始规格值
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Leakage Current 漏电流	Within specified value ≤初始规格值								
Marking 标识	Red print on the case top. 铝壳顶部红色印刷。								

■ DRAWING (Unit: mm) 外形图



□ DIMENSIONS (Unit:mm) 尺寸表

单位: mm

尺寸	6.3X5.5	6.3X6.5	6.3X11	8X11.5	10X10	10X12
ΦD	6.3	6.3	6.3	8	10	12
L	5.5	6.5	11	11.5	10	12
P	2.5	2.5	2.5	3.5	5.0	5.0
Φd	0.45	0.45	0.5	0.6	0.6	0.6
α	1.0	1.0	1.0	1.0	1.0	1.0
β	0.5	0.5	0.5	0.5	0.5	0.5



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Specifications 标准品一览表

Rated Volt. (V)	Surge Voltage(V)	Capacitance(μF)	Size ΦDXL (mm)	Tan δ 120Hz, 20°C	LC(μA) 2minutes	ESR (mΩ) 20°C 100KHZ	Rated R.C (mA/rms at 100Khz, 105°C)
2.5V(0E)	2.8	220	6.3X5.5	0.12	110	28	2,390
		390	6.3X11	0.12	195	18	3,160
		680	8X11.5	0.18	340	10	5,230
		1,000	10X10	0.18	500	14	4,700
		1,500	10X12	0.18	750	12	5,500
4V(0G)	4.6	150	6.3X5.5	0.12	120	40	1,810
		270	6.3X11	0.12	216	15	3,200
		560	8X11.5	0.18	448	10	5,230
		1,200	10X12	0.18	960	12	5,500
6.3V(0J)	7.2	100	6.3X5.5	0.12	126	40	1,810
		220	6.3X11	0.12	277	18	3,160
		330	6.3X6.5	0.12	416	28	2,390
		390	8X11.5	0.15	491	12	4,770
		470	8X11.5	0.15	592	12	4,770
		820	10X12	0.15	1,033	12	5,500
10V(1A)	12.0	100	6.3X6.5	0.12	200	45	1,700
		220	10X10	0.15	440	17	3,950
		330	8X11.5	0.12	660	14	4,420
		560	10X12	0.12	1,360	12	5,300
16V(1C)	18.0	47	6.3X5.5	0.10	150	50	1,650
		100	6.3X11	0.10	320	22	2,820
		180	8X11.5	0.12	576	16	4,360
		330	10X10	0.12	1,056	16	4,360
		330	10X12	0.12	1,056	14	5,050
20V(1D)	23.0	22	6.3X5.5	0.10	88	60	1,450
		56	6.3X11	0.10	224	25	2,650
		100	8X11.5	0.15	400	24	3,320
			10X10	0.15	400	24	3,320
		150	10X12	0.15	600	20	4,320
		330	10X12	0.12	1,320	24	2,800
25V(1E)	29.0	6.8	6.3X5.5	0.10	170	80	1,200
		33	8X11.5	0.12	165	24	3,320
		56	8X11.5	0.12	280	24	3,320
			10X12.5	0.12	280	20	4,320
		68	8X11.5	0.12	340	24	3,320
		100	10X12	0.12	500	20	4,320
		270	10X12	0.12	1,350	25	2,800
35V(1V)	40.0	22	8X11.5	0.12	154	31	2,300
		39	8X11.5	0.12	273	31	2,300
		47	10X12	0.12	329	30	3,650
		68	10X12	0.12	476	28	2,700
		150	10X12	0.12	1,050	26	2,700

•Case size Φ D XL(mm), ripple current (mA rms) at 105°C, 100KHz •尺寸Φ D XL(mm)，纹波电流 (mA rms) 于105°C, 100KHz

□ Ripple Current and Frequency Multipliers 纹波电流与频率补正系数

Frequency 频率	120HZ	1KHZ	10KHZ	100KHZ~
Multipliers 补正系数	0.05	0.30	0.70	1.00

Note: All design and specifications are for reference only and is subject to change without prior notice. If any doubt about safety for your application, please contact us immediately for technical assistance before purchase.

注：以上所提供的设计及特性参数谨供参考，任何修改不作预先通知。如果在使用上有疑问，请在采购前与我们联系，以便提供技术上的协助。