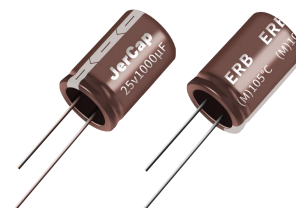


ERB series

■ 特性 Features

- 长寿命、耐高频大纹波电流、低阻抗
Long lifespan, high frequency resistance, large ripple current, low impedance
- 用于通信设备、开关电源、工业测量仪器等
Used in communication equipments, switching power supply, industrial measuring instruments, etc
- 105°C下的负载寿命为 4000~10000 小时
Load life 4000~10000 hrs at 105°C
- 符合 RoHS 与 REACH, 无卤环保要求
RoHS & REACH compliant, Halogen-free



■ 仕样 Specifications

项目 Item	性能 Performance							
使用温度范围 Operating Temperature Range	-40°C~+105°C							
额定电压范围 Rated Voltage Range	6.3~100 VDC							
额定静电容量范围 Capacitance Range	1~4700µF							
额定静电容量容许差 Capacitance Tolerance	±20% (120Hz, 20°C)							
漏电流 Leakage Current	施加额定电压 2 分钟后 $I \leq 0.01CV$ 或 $3\mu A$ (以较大值为准) After 2 minutes application of rated voltage. $I \leq 0.01CV$ or $3\mu A$ (whichever is greater)							
损耗角正切值 Dissipation Factor (120Hz, 20°C)	当标称电容超过 1000 µF 时, 每增加 1000µF, $\tan \delta$ 应在所列值上加 0.02. When nominal capacitance is over 1000µF, $\tan \delta$ shall be added 0.02 to the listed value with increase of every 1000µF.							
	W.V(VDC)	6.3	10	16	25	35	50	63~120
	D.F(%)	0.18	0.16	0.14	0.12	0.10	0.09	0.08
低温特性 Low Temperature Stability (阻抗比) impedance Ratio(MAX)	当标称电容超过 1000 µF 时, $Z(-20)/Z(+20^\circ C)$ 每 1000µF 加 0.5, $Z(-40^\circ C)/Z(+20^\circ C)$ 每 1000µF 加 1 For capacitance > 1000µF, add 0.5 per another 1000µF for $Z(-20)/Z(+20^\circ C)$, add 1 per another 1000µF for $Z(-40^\circ C)/Z(+20^\circ C)$.							
	W.V(VDC)	6.3	10	16	25	35	50	63
	$Z(-20)/Z(+20^\circ C)$	4	3	2	2	1.5	1.5	1.5
	$Z(-40^\circ C)/Z(+20^\circ C)$	6	4	3	3	2	2	2

ERB series

■ 仕様 Specifications

项目 Item	性能 Performance																
耐久性 Endurance	试验条件 Test conditions	<table><tr><th rowspan="2">Dia.</th><th colspan="2">Load life(hours)</th></tr><tr><th>6.3~10V</th><th>16~120V</th></tr><tr><td>φD≤6.3</td><td>4000</td><td>5000</td></tr><tr><td>φD=8&10</td><td>6000</td><td>7000</td></tr><tr><td>φD≥12.5</td><td>8000</td><td>10000</td></tr></table>		Dia.	Load life(hours)		6.3~10V	16~120V	φD≤6.3	4000	5000	φD=8&10	6000	7000	φD≥12.5	8000	10000
	Dia.				Load life(hours)												
				6.3~10V	16~120V												
	φD≤6.3			4000	5000												
	φD=8&10			6000	7000												
	φD≥12.5			8000	10000												
	试验时间 Duration time: 4000~10000H																
工作温度 Ambient temperature: +105°C																	
工作电压 Applied voltage: Rated DC working voltage																	
测试条件 After test requirements at +20°C																	
静电容量变化率 Capacitance change: ≤±20% of the initial measured value																	
损耗角正切 Dissipation factor: ≤200% of the initial specified value																	
高温储存 Shelf Life	试验条件 Test conditions																
	放置时间 Duration time: 1000hrs																
	放置温度 Ambient temperature: +105°C																
	工作电压 Applied voltage: None																
	放置完成后在+25°C条件下进行特性测试,并在测量前使用额定直流工作电压充电 30 分钟																
	After test requirements at +25°C : Same limits as Load life.Pre-treatment for measurements shall be conducted after application of DC working voltage for 30minutes.																
其它 Others	JIS C-5141 and JIS C-5102																

■ 频率修正系数 Multiplier for ripple current vs frequency

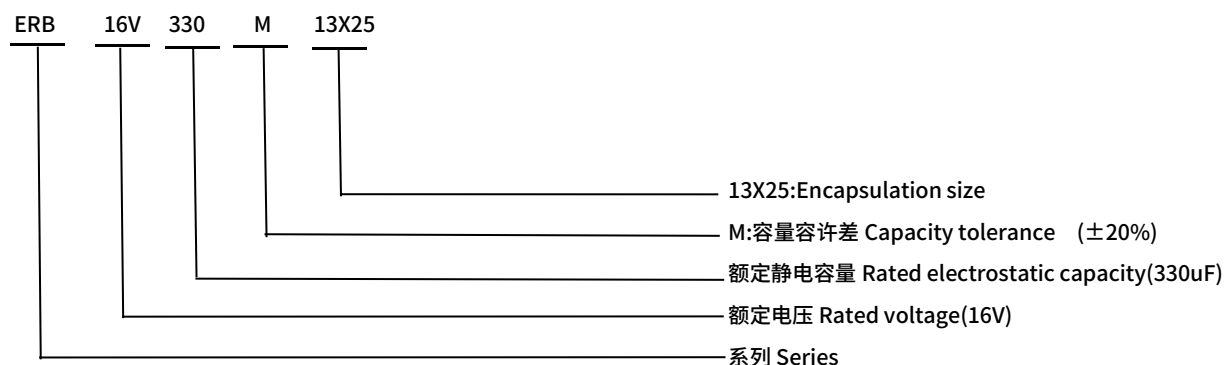
Freq.(Hz) Cap.(uF)	50/60Hz	120Hz	1KHz	10KHz	100KHz
≤ 10	0.47	0.59	0.85	0.97	1.00
$10 < C \leq 100$	0.52	0.65	0.89	0.97	1.00
$100 < C \leq 1000$	0.58	0.72	0.90	0.98	1.00
> 1000	0.63	0.78	0.91	0.98	1.00

■ 尺寸图 Diagram of Dimensions (Unit: mm):

Technical drawing of the ERB series capacitor. The side view shows a cylindrical body with a sleeve. Dimensions include: $\phi D + 0.5 \text{ Max.}$ for the body diameter, $L \pm \alpha \text{ Max.}$ for the body length, 15 Min. for the sleeve length, 4 Min. for the terminal length, ϕd for the terminal diameter, and $F \pm 0.5$ for the terminal thickness. The end view shows a circular cross-section with a central hole of diameter ϕd and a thickness of $F \pm 0.5$.	ΦD	5	6.3	8	10	13	16	18
	F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
	Φd	0.5			0.6		0.8	
	α	$L \leq 16: \alpha = 1.5 \quad L > 16: \alpha = 2.0$						

ERB series

品号编码体系 Part Number Coding System (Example: 16V 330μF)



注释: 型号中 R 表示小数点, 如 4R7 表示 4.7μF

Note: "R" in the model number denotes a decimal point (e.g., 4R7 = 4.7μF)

电气特性 Electrical Characteristics

额定电压 Rated Voltage(V)	额定静电容量 Rated Capacitance(μF)	尺寸 Dimensions ΦDXL(mm)	额定纹波电流 Rated Ripple Current (mA, 105°C, 100KHz)	阻抗 Impedance (Ω, 100KHz)	损失角正切值 tan δ	品号 Part Number
6.3	100	5X11	180	0.75	0.18	ERB6.3V100M5X11
	220	6.3X11	300	0.55	0.18	ERB6.3V220M6X11
	330	6.3X11	330	0.34	0.18	ERB6.3V330M6X11
	470	6.3X11	425	0.25	0.18	ERB6.3V470M6X11
	680	6.3X12	500	0.2	0.18	ERB6.3V680M6X12
	680	8X12	510	0.18	0.18	ERB6.3V680M8X12
	820	8X12	700	0.135	0.18	ERB6.3V820M8X12
	1000	8X9	700	0.1	0.18	ERB6.3V1000M8X9
	1000	8X12	710	0.09	0.18	ERB6.3V1000M8X12
	1200	10X12	800	0.085	0.18	ERB6.3V1200M10X12
	1500	10X16	1100	0.08	0.18	ERB6.3V1500M10X16
	2200	10X20	1400	0.05	0.18	ERB6.3V2200M10X20
	3300	13X16	1900	0.04	0.18	ERB6.3V3300M13X16
	4700	13X20	2000	0.035	0.18	ERB6.3V4700M13X20
10	33	5X11	100	2.5	0.16	ERB10V33M5X11
	47	5X11	150	1.35	0.16	ERB10V47M5X11
	100	5X11	200	0.85	0.16	ERB10V100M5X11
	220	6.3X11	330	0.35	0.16	ERB10V220M6X11
	330	6.3X11	450	0.28	0.16	ERB10V330M6X11
	470	6.3X11	560	0.25	0.16	ERB10V470M6X11
	680	6.3X14	650	0.12	0.16	ERB10V680M6X14

ERB series

额定电压 Rated Voltage(V)	额定静电容量 Rated Capacitance(μF)	尺寸 Dimensions ΦDXL(mm)	额定纹波电流 Rated Ripple Current (mA,105°C,100KHz)	阻抗 Impedance (Ω,100KHz)	损失角正切值 tan δ	品号 Part Number
10	680	8X12	680	0.12	0.16	ERB10V680M8X12
	820	8X12	860	0.1	0.16	ERB10V820M8X12
	1000	8X12	860	0.08	0.16	ERB10V1000M8X12
	1000	8X14	950	0.08	0.16	ERB10V1000M8X14
	1200	10X16	1210	0.07	0.16	ERB10V1200M10X16
	1500	10X16	1380	0.06	0.16	ERB10V1500M10X16
	2200	10X20	1700	0.05	0.16	ERB10V2200M10X20
	3300	13X20	1950	0.035	0.16	ERB10V3300M13X20
	4700	13X20	2100	0.03	0.16	ERB10V4700M13X20
16	10	5X11	75	4.5	0.14	ERB16V10M5X11
	22	5X11	105	2.5	0.14	ERB16V22M5X11
	33	5X11	115	2	0.14	ERB16V33M5X11
	47	5X11	160	1.1	0.14	ERB16V47M5X11
	100	5X11	260	0.5	0.14	ERB16V100M5X11
	220	6.3X11	480	0.25	0.14	ERB16V220M6X11
	330	8X12	600	0.16	0.14	ERB16V330M8X12
	470	8X12	750	0.125	0.14	ERB16V470M8X12
	680	8X12	950	0.09	0.14	ERB16V680M8X12
	680	8X16	1050	0.085	0.14	ERB16V680M8X16
	820	8X16	1150	0.08	0.14	ERB16V820M8X16
	1000	8X16	1200	0.065	0.14	ERB16V1000M8X16
	1000	10X16	1300	0.065	0.14	ERB16V1000M10X16
	1200	10X16	1450	0.06	0.14	ERB16V1200M10X16
	1500	10X16	1600	0.055	0.14	ERB16V1500M10X16
	2200	10X25	1800	0.045	0.14	ERB16V2200M10X25
	2200	13X20	1950	0.045	0.14	ERB16V2200M13X20
	3300	13X25	2300	0.03	0.14	ERB16V3300M13X25
25	10	5X11	85	2.4	0.12	ERB25V10M5X11
	22	5X11	120	1.85	0.12	ERB25V22M5X11
	33	5X11	150	1.4	0.12	ERB25V33M5X11
	47	5X11	220	1.1	0.12	ERB25V47M5X11
	100	6.3X11	350	0.35	0.12	ERB25V100M6X11
	220	6.3X11	550	0.15	0.12	ERB25V220M6X11
	220	8X12	600	0.15	0.12	ERB25V220M8X12

ERB series

额定电压 Rated Voltage(V)	额定静电容量 Rated Capacitance(μF)	尺寸 Dimensions ΦDXL(mm)	额定纹波电流 Rated Ripple Current (mA,105°C,100KHz)	阻抗 Impedance (Ω,100KHz)	损失角正切值 tan δ	品号 Part Number
25	330	8X12	800	0.11	0.12	ERB25V330M8X12
	330	8X16	820	0.11	0.12	ERB25V330M8X16
	470	8X12	1000	0.08	0.12	ERB25V470M8X12
	470	8X14	1200	0.08	0.12	ERB25V470M8X14
	680	8X16	1200	0.07	0.12	ERB25V680M8X16
	680	10X16	1300	0.07	0.12	ERB25V680M10X16
	1000	10X16	1450	0.05	0.12	ERB25V1000M10X16
	1000	10X20	1650	0.05	0.12	ERB25V1000M10X20
	1500	10X25	1800	0.04	0.12	ERB25V1500M10X25
	1500	13X20	2150	0.04	0.12	ERB25V1500M13X20
	2200	13X25	2550	0.035	0.12	ERB25V2200M13X25
35	10	5X11	110	2.25	0.10	ERB35V10M5X11
	22	5X11	150	1.5	0.10	ERB35V22M5X11
	33	5X11	175	1.25	0.10	ERB35V33M5X11
	47	5X11	275	0.8	0.10	ERB35V47M5X11
	100	6.3X11	440	0.25	0.10	ERB35V100M6X11
	220	8X12	710	0.12	0.10	ERB35V220M8X12
	220	8X16	740	0.12	0.10	ERB35V220M8X16
	330	8X14	840	0.08	0.10	ERB35V330M8X14
	330	8X16	950	0.08	0.10	ERB35V330M8X16
	470	8X20	1150	0.065	0.10	ERB35V470M8X20
	470	10X16	1250	0.065	0.10	ERB35V470M10X16
	680	10X20	1300	0.055	0.10	ERB35V680M10X20
	680	13X20	1500	0.055	0.10	ERB35V680M13X20
	1000	10X25	1650	0.045	0.10	ERB35V1000M10X25
	1000	13X20	1850	0.045	0.10	ERB35V1000M13X20
	1500	13X25	2100	0.035	0.10	ERB35V1500M13X25
	1500	16X25	2250	0.035	0.10	ERB35V1500M16X25
	2200	16X25	2700	0.03	0.10	ERB35V2200M16X25
50	1	5X11	40	3.95	0.09	ERB50V1M5X11
	2.2	5X11	55	2.85	0.09	ERB50V2R2M5X11
	3.3	5X11	65	2.25	0.09	ERB50V3R3M5X11
	4.7	5X11	85	1.95	0.09	ERB50V4R7M5X11
	10	5X11	120	1.6	0.09	ERB50V10M5X11

ERB series

额定电压 Rated Voltage(V)	额定静电容量 Rated Capacitance(μF)	尺寸 Dimensions ΦDXL(mm)	额定纹波电流 Rated Ripple Current (mA,105°C,100KHz)	阻抗 Impedance (Ω,100KHz)	损失角正切值 tan δ	品号 Part Number
50	22	5X11	150	1.25	0.09	ERB50V22M5X11
	33	6.3X11	245	0.8	0.09	ERB50V33M6X11
	47	6.3X11	290	0.6	0.09	ERB50V47M6X11
	100	8X12	500	0.17	0.09	ERB50V100M8X12
	220	8X16	850	0.095	0.09	ERB50V220M8X16
	220	10X16	950	0.095	0.09	ERB50V220M10X16
	330	10X20	1050	0.065	0.09	ERB50V330M10X20
	330	13X20	1150	0.065	0.09	ERB50V330M13X20
	470	10X20	1350	0.055	0.09	ERB50V470M10X20
	470	13X20	1550	0.055	0.09	ERB50V470M13X20
	680	13X20	1750	0.045	0.09	ERB50V680M13X20
	680	13X25	1860	0.045	0.09	ERB50V680M13X25
	1000	13X25	1880	0.035	0.09	ERB50V1000M13X25
	1000	16X25	2200	0.035	0.09	ERB50V1000M16X25
63	1	5X11	30	4	0.08	ERB63V1M5X11
	2.2	5X11	40	3	0.08	ERB63V2R2M5X11
	3.3	5X11	55	2.5	0.08	ERB63V3R3M5X11
	4.7	5X11	65	2	0.08	ERB63V4R7M5X11
	6.8	5X11	95	1.8	0.08	ERB63V6R8M5X11
	10	5X11	105	1.7	0.08	ERB63V10M5X11
	22	6.3X11	165	0.9	0.08	ERB63V22M6X11
	33	6.3X11	265	0.65	0.08	ERB63V33M6X11
	47	8X12	275	0.6	0.08	ERB63V47M8X12
	68	8X12	450	0.25	0.08	ERB63V68M8X12
	100	8X16	500	0.2	0.08	ERB63V100M8X16
	150	8X20	620	0.15	0.08	ERB63V150M8X20
	220	10X16	830	0.1	0.08	ERB63V220M10X16
	220	10X20	900	0.1	0.08	ERB63V220M10X20
	330	10X20	1150	0.06	0.08	ERB63V330M10X20
	470	13X20	1500	0.055	0.08	ERB63V470M13X20
	680	13X25	1700	0.05	0.08	ERB63V680M13X25
	1000	13X30	1800	0.04	0.08	ERB63V100M13X30
	1000	16X25	2150	0.04	0.08	ERB63V100M16X25
100	1	5X11	30	4	0.08	ERB100V1M5X11

ERB series

额定电压 Rated Voltage(V)	额定静电容量 Rated Capacitance(μ F)	尺寸 Dimensions Φ DXL(mm)	额定纹波电流 Rated Ripple Current (mA,105°C,100KHz)	阻抗 Impedance (Ω ,100KHz)	损失角正切值 tan δ	品号 Part Number
100	2.2	5X11	45	3.5	0.08	ERB100V2R2M5X11
	3.3	5X11	55	3	0.08	ERB100V3R3M5X11
	4.7	5X11	70	2.8	0.08	ERB100V4R7M5X11
	6.8	5X11	105	2	0.08	ERB100V6R8M5X11
	10	5X11	125	1.75	0.08	ERB100V10M5X11
	22	6.3X11	200	0.85	0.08	ERB100V22M6X11
	33	8X12	310	0.7	0.08	ERB100V33M8X12
	47	10X13	350	0.6	0.08	ERB100V47M10X13
	68	10X16	460	0.35	0.08	ERB100V68M10X16
	100	10X16	550	0.3	0.08	ERB100V100M10X16
	150	10X20	760	0.18	0.08	ERB100V150M10X20
	220	13X18	900	0.13	0.08	ERB100V220M13X18
	220	13X20	950	0.13	0.08	ERB100V220M13X20
	330	16X25	1400	0.1	0.08	ERB100V330M16X25
	470	16X25	1600	0.09	0.08	ERB100V470M16X25
	680	18X30	1750	0.08	0.08	ERB100V680M18X30
	1000	18X36	1850	0.038	0.08	ERB100V1000M18X36
	1000	18X40	1950	0.03	0.08	ERB100V1000M18X40