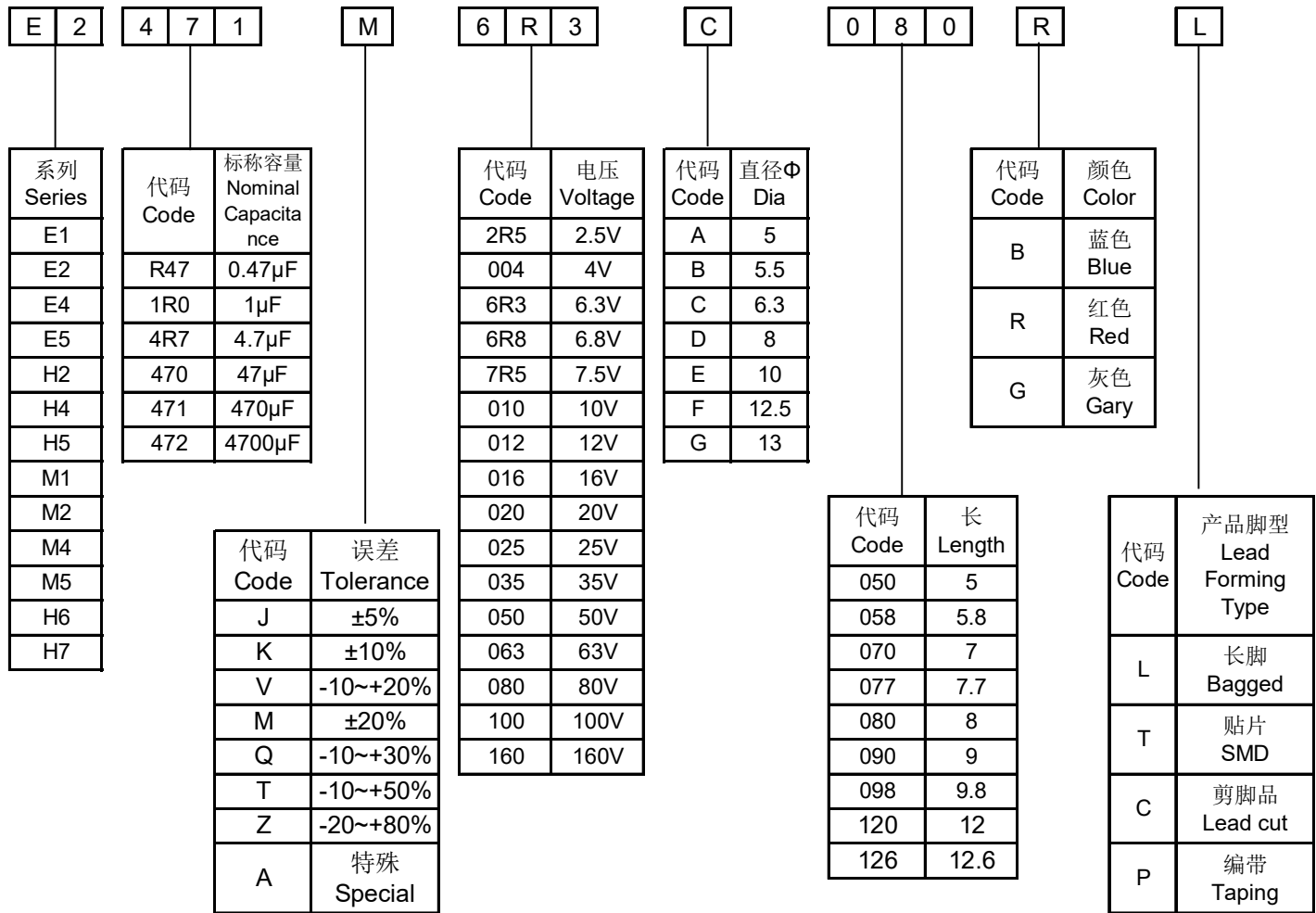


◆料号说明 Explanation of parts numbers



M2 Series

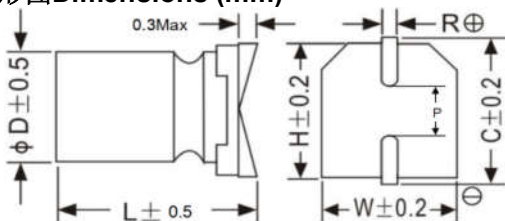
- Low ESR, High ripple, miniaturized
- SMD type: lead free reflow soldering condition at 260°C peak correspondence
- RoHS Compliant



规格表 Specifications

项目 Items	特性参数 Characteristics		
使用温度范围 Category Temperature Range	-55 ~ +105°C		
额定工作电压范围 Rated Voltage Range	2.5 ~ 100V		
静电容量允许偏差 Capacitance tolerance	±20%(M) (at 20°C, 120Hz)		
漏电流 Leakage Current	施加额定工作电压2分钟后读数, 小于或等于规格值 (at 20°C) Less than or equal to the specified value. After 2 minutes application of rated Voltage at 20°C		2.5~25V
			35~100V
损耗角正切值tanδ Dissipation Factor	Rated voltage (V)	2.5~6.3	10~100
	tanδ (Max.)	0.08	0.12
温度特性 Low Temperture Characteristics (Max.Impedance Ratio)	Z(-25°C)/Z(+20°C)	≦ 1.25	
	Z(-55°C)/Z(+20°C)	≦ 1.25	
耐久性 Endurance	105°C施加额定工作电压2000小时, 恢复到20°C后, 产品性能应满足以下要求 The specifications listed below shall be satisfied when the capacitors are restored to 20°C after application of rated voltage for 2000 hours at 105°C.		
	Appearance	No significant damage	
	Capacitance change	≦ ±20% of the initial value	
	D.F.(tanδ)	≦ 150% of the specified value	
	ESR	≦ 150% of the specified value	
	Leakage current	≦ The specified value	
耐湿负荷特性 Damp Heat (Steady State)	在60°C 温度, 湿度90%~95%RH的环境中, 施加额定电压1000小时后, 恢复到20°C后, 产品性能应满足以下要求 The specifications listed below shall be satisfied when the capacitors are restored to 20°C after application of rated voltage for 1000 hours at 60°C, 90% ~ 95% RH.		
	Appearance	No significant damage	
	Capacitance change	≦ ±20% of the initial value	
	D.F.(tanδ)	≦ 150% of the specified value	
	ESR	≦ 150% of the specified value	
	Leakage current	≦ The specified value	
浪涌电压特性 (Surge Voltage)	浪涌电压=额定电压× 1.15(V) Surge Voltage=Rated voltage × 1.15(V) 在105°C环境中, 按充电30秒; 放电5分30秒, 连续施加浪涌电压1000次(Rc=1kΩ), 待恢复测试, 应满足以下要求 The capacitors shall be subjected to 1000 cycles each consisting of charge with the surge voltages specified at 105°C for 30 seconds through a protective resistor (Rc=1kΩ) and discharge for 5 minutes 30 seconds.		
	Appearance	No significant damage	
	Capacitance change	≦ ±20% of the initial value	
	D.F.(tanδ)	≦ 150% of the specified value	
	ESR	≦ 150% of the specified value	
	Leakage current	≦ The specified value	
焊接耐热性 Resistance to soldering heat	按回流焊试验后, 应满足于以下要求 Measurement for solder temperature profile shall be made at the capacitor top and the terminal.		
	Capacitance change	≦ ±10% of the initial value	
	D.F.(tanδ)	≦ 130% of the specified value	
	ESR	≦ 130% of the specified value	
	Leakage current	≦ The specified value	

外形图 Dimensions (mm)



ΦD	W	H	C	R	P
5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	6.5	6.5	7.2	0.5~0.8	2.2
8	8.3	8.3	9.0	0.7~1.1	3.1
10	10.3	10.3	11.0	0.7~1.1	4.5

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◆ 纹波电流修正系数 Rated Ripple Current Coefficient

频率Frequency(Hz)	120Hz \leq f < 1kHz	1kHz \leq f < 10kHz	10kHz \leq f < 100kHz	100kHz \leq f < 500kHz
系数 Coefficient	0.05	0.30	0.70	1.00

◆ 尺寸与个技术参数一览表Standard Ratings

Rated voltage (V)	Rated capacitance (uF)	Case size Φ D×L(mm)	ESR(m Ω) at 20°C, 100 KHz	Leakage Current (μ A)	Rated ripple current (mArms/105°C/100kHz)
2.5	470	6.3*9	30	500	4100
	470	6.3*9	30	500	4100
	560	6.3*9	30	500	4100
	560	6.3*9	30	500	4100
	680	6.3*9	30	500	4100
	820	6.3*9	30	500	4100
4	560	6.3*9	30	500	4100
	680	6.3*9	30	544	4100
	820	6.3*9	30	656	4100
	1000	6.3*9	30	800	4100
	1200	6.3*9	30	960	4100
6.3	220	5*7.5	45	500	2500
	220	6.3*5.8	35	500	3200
	220	6.3*7	35	500	3500
	330	6.3*5.8	35	500	3200
	330	6.3*7	35	500	3500
	330	6.3*7.7	35	500	3500
	470	6.3*7.7	35	592	3500
	560	6.3*7.7	35	706	3500
	680	6.3*9	30	857	3800
	820	6.3*9	30	1033	3800
	1000	8*9.8	25	1260	4100
	1500	10*12.6	20	1890	4800
10	220	6.3*7	35	500	2650
	330	6.3*7	35	660	2650
	470	6.3*7.7	35	940	2700
	560	6.3*9	35	1120	2900
	680	8*9.8	25	1360	3500
	820	10*10.2	25	1640	4100
	820	8*12.6	25	1640	4100
	1000	8*12.6	25	2000	4100
16	47	6.3*7	50	500	2100
	68	6.3*7	40	500	2100
	100	6.3*5.8	40	500	1900

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◆ 尺寸与个技术参数一览表 Standard Ratings

Rated voltage (V)	Rated capacitance (uF)	Case size ΦD×L(mm)	ESR(mΩ) at 20°C, 100 KHz	Leakage Current (μA)	Rated ripple current (mA _{rms} /105°C/100kHz)
16	100	6.3*7	40	500	2100
	220	6.3*7	40	704	2100
	220	6.3*7.7	40	704	2260
	220	8*9.8	35	704	2690
	330	6.3*7.7	40	1056	2260
	330	8*9.8	40	1056	2900
	330	8*12.6	30	1056	3500
	470	8*9.8	40	1504	2900
	470	8*12.6	30	1504	3500
	680	8*12.6	30	2176	3500
	820	8*12.6	30	2624	3500
	1000	8*12.6	30	3200	3500
1500	10*12.6	30	4800	4100	
25	47	6.3*5.8	60	500	1870
	47	6.3*7	60	500	1950
	100	5*7.5	70	500	1650
	100	6.3*5.8	50	500	1870
	100	6.3*7	50	500	1950
	100	6.3*9	50	500	2100
	220	6.3*9	50	1100	2100
	220	8*9.8	50	1100	2690
	270	6.3*10	50	1350	2400
	330	8*9.8	50	1650	2690
	470	8*12.6	45	2350	3100
	470	10*10.2	45	2350	3100
	680	8*12.6	40	3400	3100
	680	10*12.6	35	3400	3800
	820	10*12.6	35	4100	3800
1000	10*12.6	35	5000	3800	
35	47	6.3*7	80	299	1410
	100	6.3*7	80	350	1516
	100	6.3*7.7	80	350	1870
	100	6.3*9	80	350	1950
	100	8*9.8	50	350	2450
	150	6.3*10	70	525	2100
	220	8*9.8	50	770	2450
	220	8*12.6	50	770	2910
	330	8*12.6	50	1155	2910
	330	10*12.6	40	1155	3640
	470	10*12.6	40	1155	3640

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◆ 尺寸与个技术参数一览表Standard Ratings

Rated voltage (V)	Rated capacitance (uF)	Case size ΦD×L(mm)	ESR(mΩ) at 20°C, 100 KHz	Leakage Current (μA)	Rated ripple current (mArms/105°C/100kHz)
50	10	5*9	100	299	550
	22	6.3*9	100	299	850
	33	6.3*9	100	299	850
	47	6.3*9	80	299	920
	47	8*9.8	60	299	1200
	47	8*12.6	60	299	1500
	100	8*9.8	60	500	1320
	100	8*12.6	60	500	1550
	100	10*12.6	55	500	2100
	150	8*12.6	60	750	1550
	220	10*12.6	55	1100	2100
63	10	6.3*9	110	299	750
	22	6.3*9	110	299	750
	33	6.3*9	100	299	820
	33	8*9.8	60	299	1100
	47	8*9.8	60	299	1100
	47	8*12.6	60	299	1300
	82	8*12.6	60	517	1550
	100	8*12.6	60	630	1550
	100	10*12.6	55	630	1800
	150	10*12.6	55	945	1800
	80	10	6.3*9	120	299
22		6.3*9	120	299	600
22		8*9.8	70	299	950
33		8*9.8	70	299	950
33		8*12.6	70	299	1300
47		8*12.6	70	376	1300
56		8*12.6	70	448	1400
68		10*12.6	50	544	1750
100		10*12.6	50	800	1750
100		10	6.3*9	120	299
	22	8*9.8	80	299	950
	22	8*12.6	70	299	1300
	33	8*12.6	70	330	1300
	47	10*12.6	50	470	1700
	68	10*12.6	50	680	1750