## ◆料号说明 Explanation of parts numbers

**JBL：品牌缩写**

| E | 2 | 4 | 7 | 1 | M | 6 | R | 3 | C | 0 | 8 | 0 | R | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| 系列 Series |
|---|
| E1 |
| E2 |
| E4 |
| E5 |
| H2 |
| H4 |
| H5 |
| M1 |
| M2 |
| M4 |
| M5 |
| H6 |
| H7 |

| 代码 Code | 标称容量 Nominal Capacitance |
|---|---|
| R47 | 0.47μF |
| 1R0 | 1μF |
| 4R7 | 4.7μF |
| 470 | 47μF |
| 471 | 470μF |
| 472 | 4700μF |

| 代码 Code | 误差 Tolerance |
|---|---|
| J | ±5% |
| K | ±10% |
| V | -10~+20% |
| M | ±20% |
| Q | -10~+30% |
| T | -10~+50% |
| Z | -20~+80% |
| A | 特殊 Special |

| 代码 Code | 电压 Voltage |
|---|---|
| 2R5 | 2.5V |
| 004 | 4V |
| 6R3 | 6.3V |
| 6R8 | 6.8V |
| 7R5 | 7.5V |
| 010 | 10V |
| 012 | 12V |
| 016 | 16V |
| 020 | 20V |
| 025 | 25V |
| 035 | 35V |
| 050 | 50V |
| 063 | 63V |
| 080 | 80V |
| 100 | 100V |
| 160 | 160V |

| 代码 Code | 直径Φ Dia |
|---|---|
| A | 5 |
| B | 5.5 |
| C | 6.3 |
| D | 8 |
| E | 10 |
| F | 12.5 |
| G | 13 |

| 代码 Code | 长 Length |
|---|---|
| 050 | 5 |
| 058 | 5.8 |
| 070 | 7 |
| 077 | 7.7 |
| 080 | 8 |
| 090 | 9 |
| 098 | 9.8 |
| 120 | 12 |
| 126 | 12.6 |

| 代码 Code | 颜色 Color |
|---|---|
| B | 蓝色 Blue |
| R | 红色 Red |
| G | 灰色 Gary |

| 代码 Code | 产品脚型 Lead Forming Type |
|---|---|
| L | 长脚 Bagged |
| T | 贴片 SMD |
| C | 剪脚品 Lead cut |
| P | 编带 Taping |

| 代码 Code | 解析 Analysis |
|---|---|
| M | 固态电容 |

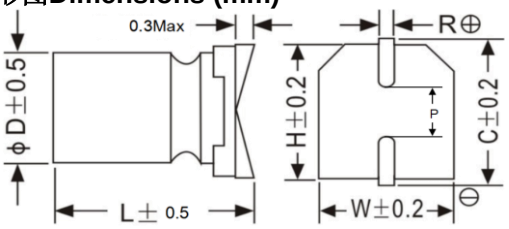
# M2

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

## ◆ 规格表 Specifications

| 项目Items | 特性参数Characteristics | | | | |
|---|---|---|---|---|---|
| 使用温度范围<br>Category<br>Temperture Range | -55 ~ +105℃ | | | | |
| 额定工作电压范围<br>Rated Voltage Range | 2.5 ~ 100V | | | | |
| 静电容量允许偏差<br>Capacitance tolerance | ±20%(M) (at 20℃,120Hz) | | | | |
| 漏电流<br>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℃)<br>Less than or equal to the specified value. After 2 minutes application of rated Voltage at 20℃ | | | 2.5~25V<br>I≤0.2CV 或500μA(取大值) | 35~100V<br>I≤0.1CV 或 299μA(取大值) |
| 损耗角正切值tanδ<br>Dissipation Factor | Rated voltage (V) | 2.5~6.3 | 10~100 | (at 20℃,120Hz) | |
| | tanδ (Max.) | 0.08 | 0.12 | | |
| 温度特性<br>Low Temperture Characteristics<br>(Max.Impedance Ratio) | Z(-25℃)/Z(+20℃) | ≦1.25 | | (100KHz) | |
| | Z(-55℃)/Z(+20℃) | ≦1.25 | | | |
| 耐久性<br>Endurence | 105℃施加额定工作电压2000小时，恢复到20℃后，产品性能应满足以下要求<br>The specifications listed below shall be satisfied when the capacitors are restored to 20℃ after application of rated voltage for 2000 hours at 105℃. | | | | |
| | 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<br>Damp Heat<br>(Steady State) | 在60℃ 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℃后，产品性能应满足以下要求<br>The specifications listed below shall be satisfied when the capacitors are restored to 20℃after application of rated voltage for 1000 hours at 60℃,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<br>(Surge Voltage) | 浪涌电压=额定电压× 1.15(V)<br>Surge Voltage=Rated voltage × 1.15(V)<br>在105℃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<br>The capacitors shall be subjected to 1000 cycles each consisting of charge with the surge voltages specified at 105℃ 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<br>Resistance to soldering heat | 按回流焊试验后，应满足于以下要求<br>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 |

# M2

## ◆ 纹波电流补正系数 Rated Ripple Current Coefficient

| 频率Frequency(Hz) | 120Hz ≦ f ＜1kHz | 1kHz≦ f ＜ 10kHz | 10kHz ≦ f ＜ 100kHz | 100kHz≦ 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 ΦD×L(mm) | ESR(mΩ) at 20℃,100 KHz | Leakage Current (μA) | Rated ripple current (mArms/105℃/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 |
| | 1500 | 10*12.6 | 25 | 2000 | 4500 |
| 16 | 47 | 6.3*7 | 50 | 500 | 2100 |
| | 68 | 6.3*7 | 40 | 500 | 2100 |
| | 100 | 6.3*5.8 | 40 | 500 | 1900 |

# M2

◆ 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℃,100 KHz | Leakage Current (μA) | Rated ripple current (mArms/105℃/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 |

# M2

◆ 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℃,100 KHz | Leakage Current (μA) | Rated ripple current (mArms/105℃/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 | 550 |
| | 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 | 550 |
| | 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 |