

MB Chip type, Low ESR, Higher Capacitance Series

- Low ESR, Higher Capacitance, High ripple current.
- Load life of 2000 hours at 105°C.
- SMD type: Lead free reflow soldering condition at 260°C peak correspondence.
- RoHS Compliance(2011/65/EU)



SPECIFICATIONS

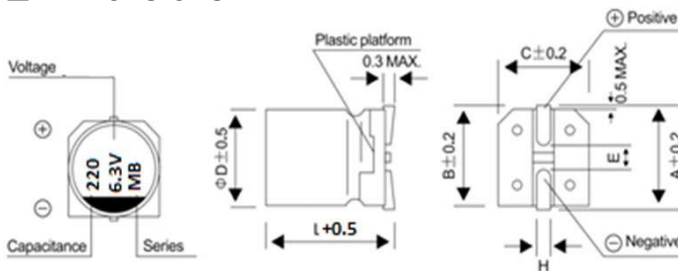
Items	Performance Characteristics		
Category Temperature Range	-55 ~ +105°C		
Rated Voltage Range	2.5 ~ 16V		
Rated Capacitance Range	120 ~ 1000μF		
Capacitance Tolerance	± 20 % (at 120Hz, 20°C)		
Tangent of Loss Angle (tan δ)	Less than or equal to the specified value at 120Hz, 20°C		
ESR(※1)	Less than or equal to the specified value at 100KHz, 20°C		
Leakage Current(※2)	Less than or equal to the specified value. After 2 minutes' application of rated voltage at 20°C		
Temperature Characteristics (Max. Impedance Ratio)	Z+105°C / Z+20°C ≤ 1.25 (100kHz) Z- 55°C / Z+20°C ≤ 1.25		
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20 °C after the rated voltage is applied for 2000 hours at 105 °C	Capacitance change	Within ±20% of the initial capacitance value(※3)
		tan δ	150% or less than the initial specified value
		ESR(※1)	150% or less than the initial specified value
		Leakage current(※2)	Less than or equal to the initial specified value
Damp Heat (Steady State)	The specifications listed at right shall be met when the capacitors are restored to 20 °C after the rated voltage is applied for 1000 hours at 60 °C, 90% RH.	Capacitance change	Within ±20% of the initial capacitance value(※3)
		tan δ	150% or less than the initial specified value
		ESR(※1)	150% or less than the initial specified value
		Leakage current(※2)	Less than or equal to the initial specified value
Resistance to Soldering Heat	After soldering the capacitor shall meet the specifications listed at right. Pre-heating shall be done at 150 to 200 °C and for 60 to 180 sec. The duration for over +230 °C at capacitor surface shall not exceed 60 seconds. In case peak temperature is 250 °C or less, reflow soldering shall be two times maximum. In case peak temperature is 260 °C or less, reflow soldering shall be once. Measurement for solder temperature profiles shall be made at the capacitor top and the terminal.	Capacitance change	Within ±10% of the initial capacitance value(※3)
		tan δ	130% or less than the initial specified value
		ESR(※1)	130% or less than the initial specified value
		Leakage current(※2)	Less than or equal to the initial specified value
Marking	Red print on the case top		

※1 ESR should be measured at both of the terminal ends closest where the terminals protrude through the plastic platform

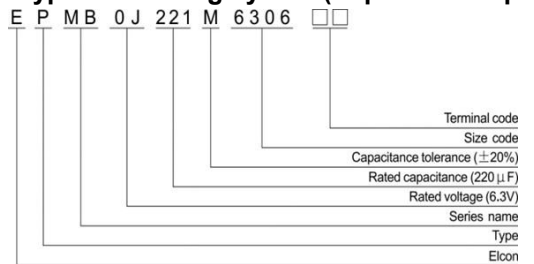
※2 Conditioning: If any doubt arises, measure the leakage current after the voltage treatment of applying DC rated voltage continuously to the capacitor for 120 minutes at 105 °C

※3 Initial value: The value before test of examination of resistance to soldering.

Dimensions



Type numbering system(Exp: 6.3V 220μF)



Φ x L(mm)

Size	5x5.8/8	6.3x5.8/6.5	6.3x7.7	6.3x9	8x6.7	8x7.7	10x12
ΦD	5.0	6.3	6.3	6.3	8.0	8.0	10.0
L	5.8/8	5.8/6.5	7.7	9	6.7	7.7	12
A	6.0	7.3	7.3	7.3	9.0	9.0	11.0
B	5.3	6.6	6.6	6.6	8.3	8.3	10.3
C	5.3	6.6	6.6	6.6	8.3	8.3	10.3
E	1.6	2.1	2.1	2.1	3.2	3.2	4.6
H	0.5-0.8	0.5-0.8	0.5-0.8	0.5-0.8	0.8-1.1	0.8-1.1	0.8-1.1

Voltage

V	2.5	4	6.3	10	16
Code	0E	0G	0J	1A	1C

MB Series

■ STANDARD RATINGS

Rated voltage (V)(code)	Surge Voltage (V)	Rated Capacitance (μF)	Case Size ΦD x L(mm)	tan δ	Leakage Current (μA)	ESR(mΩ) (at 100kHz 20℃)	Rated Ripple (mArms)	Part Number
2.5 (0E)	2.8	330	5x5.8	0.12	165	10	3900	EPMB0E331M0558TR
		390	5x5.8	0.12	195	10	3900	EPMB0E391M0558TR
		390	6.3x5.8	0.12	195	10	3900	EPMB0E391M6358TR
		470	6.3x7.7	0.12	332.5	9	4200	EPMB0E471M6377TR
		560	6.3x5.8	0.12	280	10	3900	EPMB0E561M6358TR
		560	6.3x7.7	0.12	280	9	4200	EPMB0E561M6377TR
		560	6.3x7	0.12	280	10	4500	EPMB0E561M6307TR
		680	6.3x7	0.12	340	10	4500	EPMB0E681M6307TR
4 (0G)	4.6	1000	8x7.7	0.12	500	9	4500	EPMB0E102M0877TR
		330	6.3x5.8	0.12	396	10	3900	EPMB0G331M6358TR
		390	6.3x7.7	0.12	468	9	4200	EPMB0G391M6377TR
		470	6x6.7	0.12	564	10	4500	EPMB0G471M0667TR
		560	6x6.7	0.12	672	10	4500	EPMB0G561M0667TR
		680	8x7.7	0.12	816	9	4500	EPMB0G681M0877TR
		150	5x5.8	0.12	120	12	3500	EPMB0J151M0558TR
		220	5x5.8	0.12	176	12	3500	EPMB0J221M0558TR
		220	6.3x5.8	0.12	176	10	3900	EPMB0J221M6358TR
		270	6.3x7.7	0.12	216	9	4200	EPMB0J271M6377TR
		330	6.3x5.8	0.12	700	10	3900	EPMB0J331M6358TR
		330	6.3x7.7	0.12	264	9	4200	EPMB0J331M6377TR
		330	6.3x7	0.12	264	10	4500	EPMB0J331M6307TR
		390	6.3x7	0.12	312	10	4500	EPMB0J391M6307TR
		470	8x7.7	0.12	376	9	4500	EPMB0J471M0877TR
		560	8x7.7	0.12	448	9	4500	EPMB0J561M0877TR
6.3 (0J)	7.2	100	5x5.5	0.12	126	25	2200	EPMB0J101M0555TR
		220	6.3x5	0.12	277	16	3400	EPMB0J221M6305TR
		220	6.3x6	0.12	277	16	3400	EPMB0J221M6306TR
		270	5x8	0.12	340	16	3000	EPMB0J271M0508TR
		270	5x9	0.12	340	16	3000	EPMB0J271M0509TR
		330	6.3x6.5	0.12	416	12	3950	EPMB0J331M6365TR
		470	6.3x7.7	0.12	592	12	3950	EPMB0J331M6365TR
		560	6.3x9	0.12	706	10	4500	EPMB0J561M6309TR
10 (1A)	11.5	100	6.3x5.5	0.12	200	25	2600	EPMB1A101M6355TR
		120	5x5.8	0.12	240	22	2600	EPMB1A121M0558TR
		150	6.3x6.5	0.12	300	20	2800	EPMB1A151M6365TR
		220	6.3x6.5	0.12	440	20	2900	EPMB1A221M6365TR
		270	6.3x5.8	0.12	540	20	2800	EPMB1A271M6358TR
16 (1C)	18.4	100	6.3x6	0.12	320	24	2500	EPMB1C101M6306TR
		100	6.3x6.5	0.12	320	24	2500	EPMB1C101M6365TR
		180	6.3x5.8	0.12	576	22	3300	EPMB1C181M6358TR
		220	6.3x7.7	0.12	704	22	3300	EPMB1C221M6377TR
		220	6.3x9	0.12	704	20	3500	EPMB1C221M6309TR
		270	8x6.7	0.12	864	22	3300	EPMB1C271M0867TR
		330	8x7.7	0.12	1050	21	3400	EPMB1C331M0877TR
		470	10x12	0.12	1504	11	5200	EPMB1C471M1012TR
		1000	10x12	0.12	3200	10	5800	EPMB1C102M1012TR