

### 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

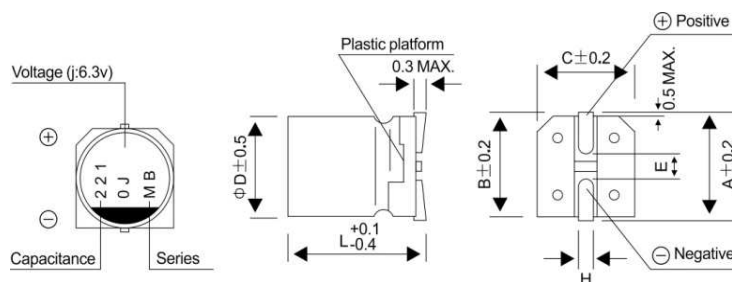
Item	Performance Characteristics		
Category Temperature Range	-55 ~ +105°C		
Rated Voltage Range	2.5 ~ 16V		
Rated Capacitance Range	120 to 1000µF		
Capacitance Tolerance	± 20 % (at 120Hz , 20°C)		
Tangent of loss angle (tan δ)	Less than or equal to the specified value at 120Hz, 20°C		
ESR(※1)	Less than 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. Meraurement 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

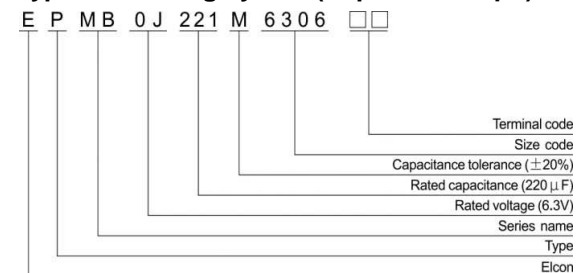
※2 Conditioning: If any doubt arises, measure the leakage current after the voltage treatment of applying DC rated voltage continuously to the capacitor for 120 minutes at 105 °C

※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	6.3x5.8	6.3x7.7	8x6.7	8x7.7
ΦD	5.0	6.3	6.3	8.0	8.0
L	5.7	5.7	7.6	6.6	7.6
A	6.0	7.3	7.3	9.0	9.0
B	5.3	6.6	6.6	8.3	8.3
C	5.3	6.6	6.6	8.3	8.3
E	1.6	2.1	2.1	3.2	3.2
H	0.5-0.8	0.5-0.8	0.5-0.8	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	700	10	3900	EPMB0E331M0558TR
		390	5x5.8	0.12	700	10	3900	EPMB0E391M0558TR
		390	6.3x5.8	0.12	292	10	3900	EPMB0E391M6358TR
		470	6.3x7.7	0.12	352	9	4200	EPMB0E471M6377TR
		560	6.3x5.8	0.12	700	10	3900	EPMB0E561M6358TR
		560	6.3x7.7	0.12	420	9	4200	EPMB0E561M0667TR
		560	6.3x6.7	0.12	420	10	4500	EPMB0E561M0667TR
		680	6.3x6.7	0.12	510	10	4500	EPMB0E681M0667TR
4 (0G)	4.6	1000	8x7.7	0.12	750	9	4500	EPMB0E102M0877TR
		330	6.3x5.8	0.12	396	10	3900	EPMB0G331M6358TR
		390	6.3x7.7	0.12	468	9	4200	EPMB0G391M6377TR
		470	6.3x6.7	0.12	564	10	4500	EPMB0G471M0667TR
		560	6.3x6.7	0.12	672	10	4500	EPMB0G561M0667TR
		680	8x7.7	0.12	816	9	4500	EPMB0G681M0877TR
		150	5x5.8	0.12	700	12	3500	EPMB0J151M0558TR
		220	5x5.8	0.12	700	12	3500	EPMB0J221M0558TR
		220	6.3x5.8	0.12	415	10	3900	EPMB0J221M6358TR
		270	6.3x7.7	0.12	510	9	4200	EPMB0J271M6377TR
		330	6.3x5.8	0.12	700	10	3900	EPMB0J331M6358TR
		330	6.3x7.7	0.12	623	9	4200	EPMB0J331M6377TR
		330	6.3x6.7	0.12	623	10	4500	EPMB0J331M0667TR
		390	6.3x6.7	0.12	737	10	4500	EPMB0J391M0667TR
		470	8x7.7	0.12	888	9	4500	EPMB0J471M0877TR
		560	8x7.7	0.12	1050	9	4500	EPMB0J561M0877TR
10 (1A)	11.5	120	5x5.8	0.12	240	22	2600	EPMB1A121M0558TR
		270	6.3x5.8	0.12	540	20	2800	EPMB1A271M6358TR
16 (1C)	18.4	180	6.3x5.8	0.12	576	22	3300	EPMB1C181M6358TR
		270	8x6.7	0.12	864	22	3300	EPMB1C271M0867TR
		330	8x7.7	0.12	1050	21	3400	EPMB1C331M0877TR