MB Chip type, Low ESR,Higher Capacitance Series

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

■SPECIFICATIONS

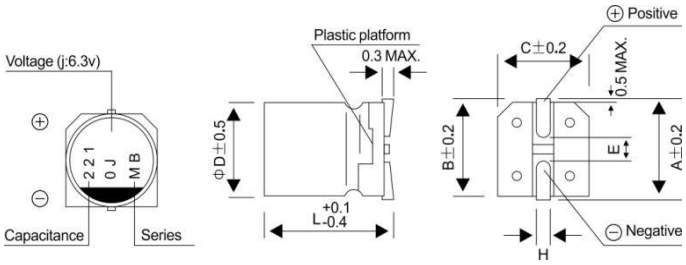
Item	Performance Characteristics		
Category Temperature Range	-55 ~ +105℃		
Rated Voltage Range	2.5 ~ 16V		
Rated Capacitance Range	33 to 1000μF		
Capacitance Tolerance	± 20 % (at 120Hz , 20℃)		
Tangent of loss angle (tan δ)	Less than or equal to the specified value at 120Hz, 20℃		
ESR(※1)	Less than or equal to the specified value at 100KHz, 20℃		
Leakage Current(※2)	Less than or equal to the specified value. After 2 minutes' application of rated voltage at 20℃		
Temperature Characteristics (Max. Impedance Ratio)	Z+105℃ / Z+20℃ ≤1.25 (100kHz) Z- 55℃ / Z+20℃ ≤1.25		
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20 ℃ after the rated voltage is applied for 2000 hours at 105 ℃	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 ℃ after the rated voltage is applied for 1000 hours at 60 ℃, 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 specifcations listed at right. Pre-heating shall be done at 150 to 200 ℃ and for 60 to 180 sec. The duration for over +230 ℃ at capacitor surface shall not exceed 60 seconds. In case peak terperature is 250 ℃ or less, reflow soldering shall be two times maximum. In case peak termperature is 260 ℃ 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

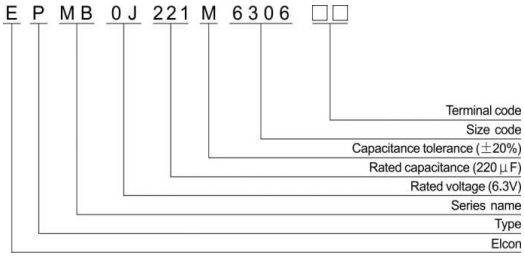
※2 Conditioning: If any doubt arises, measure the leakage current after the voltage treatment of applying DC rated voltage continuously to the capacitor for 120 minuters at 105 ℃

※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	5x6	6.3x6	6.3x8	8x7	8x8
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 Cpacitance (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	220	5x6	0.12	110	21	2650	EPMB0E221M0506TR
		330	5x7	0.12	165	17	2860	EPMB0E391M0507TR
		390	6.3x6	0.12	195	15	3400	EPMB0E391M6306TR
		470	6.3x8	0.12	235	13	3650	EPMB0E471M6308TR
		560	6.3x8	0.12	280	13	3650	EPMB0E561M6308TR
		560	8x7	0.12	280	13	4100	EPMB0E561M0807TR
		680	6.3x8	0.12	340	12	3650	EPMB0E681M6308TR
		1000	8x8	0.12	500	12	4100	EPMB0E102M0808TR
4 (0G)	4.6	150	5x6	0.12	120	22	2610	EPMB0G151M0506TR
		270	6.3x6	0.12	216	15	3200	EPMB0G271M6306TR
		330	6.3x6	0.12	364	15	3200	EPMB0G331M6306TR
		390	6.3x8	0.12	312	14	3490	EPMB0G391M6308TR
		470	8x7	0.12	376	14	3950	EPMB0G471M0807TR
		560	8x7	0.12	448	14	2950	EPMB0G561M0807TR
		680	8x8	0.12	544	13	4000	EPMB0G681M0808TR
		820	8x8	0.12	656	13	4000	EPMB0G821M0808TR
		1000	8x8	0.12	800	13	4000	EPMB0G102M0808TR
6.3 (0J)	7.2	100	5x6	0.12	126	24	2500	EPMB0J101M0506TR
		120	5x6	0.12	151	24	2500	EPMB0J121M0506TR
		220	6.3x6	0.12	277	15	3200	EPMB0J221M6306TR
		270	6.3x8	0.12	340	14	3470	EPMB0J271M6308TR
		330	6.3x8	0.12	416	14	3470	EPMB0J331M6308TR
		330	8x7	0.12	416	14	3950	EPMB0J331M0807TR
		390	8x7	0.12	491	14	3950	EPMB0J391M0807TR
		470	8x8	0.12	592	13	3950	EPMB0J471M0808TR
		820	8x8	0.12	1033	12	4770	EPMB0J821M0808TR
10 (1A)	11.5	47	5x6	0.12	94	28	2310	EPMB1A470M0506TR
		56	5x6	0.12	112	28	2310	EPMB1A560M0506TR
		68	5x6	0.12	136	28	2310	EPMB1A680M0506TR
		120	6.3x6	0.12	240	25	2530	EPMB1A121M6306TR
		150	6.3x8	0.12	300	21	2880	EPMB1A151M6308TR
		220	8x7	0.12	440	21	3220	EPMB1A221M0807TR
		270	8x7	0.12	540	21	3220	EPMB1A271M0807TR
		330	8x8	0.12	660	19	3800	EPMB1A331M0808TR
		470	8x8	0.12	940	19	3800	EPMB1A471M0808TR
16 (1C)	18.4	33	5x6	0.12	105	35	2070	EPMB1C330M0506TR
		39	5x6	0.12	125	35	2070	EPMB1C390M0506TR
		68	6.3x6	0.12	217	28	2390	EPMB1C680M6306TR
		82	6.3x8	0.12	262	24	2700	EPMB1C820M6308TR
		100	6.3x8	0.12	320	24	2700	EPMB1C101M6308TR
		120	8x7	0.12	384	24	3010	EPMB1C121M0807TR
		150	8x8	0.12	480	22	3150	EPMB1C151M0808TR
		220	8x8	0.12	704	18	3890	EPMB1C221M0808TR