Multilayer Ceramic Capacitors for Telecommunications Infrastructure and Industrial Equipment

REFLOW

■PART NUMBER

M	B	A	S	T	3	1	L	S	B	5	1	0	6	K	T	N	A	0	1
①				②	③		④	⑤	⑥		⑦			⑧	⑨	⑩			

①Series

Code (1)(2)(3)(4)	
MBAS	Multilayer Ceramic Capacitor (High dielectric type) for Telecommunications Infrastructure and Industrial Equipment Multilayer Ceramic Capacitor (Temperature compensating type) for Telecommunications Infrastructure and Industrial Equipment Medium-High voltage Multilayer Ceramic Capacitor for Telecommunications Infrastructure and Industrial Equipment
MBAR	High frequency/Low loss Medium-High Voltage Multilayer Ceramic Capacitor for Telecommunications Infrastructure and Industrial Equipment
MBJC	Soft Termination Multilayer Ceramic Capacitor for Telecommunications Infrastructure and Industrial Equipment
MBRL	LW Reversal Decoupling Low ESL Capacitor (LWDC™) for Telecommunications Infrastructure and Industrial Equipment

(1) Product Group

Code	
M	Multilayer Ceramic Capacitor

(2) Category

Code	Recommended equipment	Quality Grade
B	Telecommunications Infrastructure and Industrial Equipment	2

(3) Type

Code	
A	2 terminals
J	Soft Termination
R	LW reversal

(4) Features, Characteristics

Code	
S	Standard/General
R	High frequency/Low loss
C	Internal code (Soft Termination)
L	Low ESL

②Rated voltage

Code	Rated voltage[VDC]
A	4
J	6.3
L	10
E	16
T	25
G	35
U	50
H	100
Q	250
S	630

④Thickness

Code	Thickness[mm]
3	0.3
5	0.5
7	0.7
8	0.8
9	0.85
Q	1.15
G	1.25
L	1.6
N	1.9 (0.088 max ※)
M	2.5

Note : ※LW reverse type(MBRL)

③Dimension(L×W)

Code	L×W [mm]	JIS(mm)	EIA(inch)
06	0.6 × 0.3	0603	0201
10	1.0 × 0.5	1005	0402
	0.52× 1.0 ※	0510	0204
16	1.6 × 0.8	1608	0603
	0.8 × 1.6 ※	0816	0306
21	2.0 × 1.25	2012	0805
	1.25× 2.0 ※	1220	0508
31	3.2 × 1.6	3216	1206
32	3.2 × 2.5	3225	1210
45	4.5 × 3.2	4532	1812

Note : ※LW reverse type(MBRL)

⑤Dimension tolerance

Code	Dimension code	L[mm]	W[mm]	T[mm]	Thickness code
A	10	1.0±0.10	0.5±0.10	0.5±0.10	5
	16	1.6+0.15/−0.05	0.8+0.15/−0.05	0.8+0.15/−0.05	8
	21	2.0+0.15/−0.05	1.25+0.15/−0.05	1.25+0.15/−0.05	G
	31	3.2±0.20	1.6±0.20	1.15±0.20	Q
				1.6±0.20	L
	32	3.2±0.30	2.5±0.30	2.5±0.30	M
B	10	1.0+0.15/−0.05	0.5+0.15/−0.05	0.5+0.15/−0.05	5
	16	1.6+0.20/−0	0.8+0.20/−0	0.8+0.20/−0	8
	21	2.0+0.20/−0	1.25+0.20/−0	1.25+0.20/−0	G
	31	3.2±0.30	1.6±0.30	1.6±0.30	L
C	10	1.0+0.20/−0	0.5+0.20/−0	0.5+0.20/−0	5
	16	1.6+0.25/−0	0.8+0.25/−0	0.8+0.25/−0	8
	21	2.0+0.25/−0	1.25+0.25/−0	1.25+0.25/−0	G
D	21	2.0+0.30/−0	1.25+0.30/−0	1.25+0.30/−0	G
H	31	3.2±0.15	1.6±0.15	1.15±0.10	Q
J	21	2.0+0.15/−0.05	1.25+0.15/−0.05	0.85±0.10	9
L	21	2.0+0.20/−0	1.25+0.20/−0	0.85±0.10	9
	32	3.2±0.50	2.5±0.30	2.5±0.30	M
N	21	2.0±0.15	1.25±0.15	0.85±0.15	9
S	06	0.6±0.03	0.3±0.03	0.3±0.03	3
	10	1.0±0.05	0.5±0.05	0.5±0.05	5
		0.52±0.05 ※	1.0±0.05	0.3±0.05	3
	16	1.6±0.10	0.8±0.10	0.7±0.10	7
				0.8±0.10	8
		0.8±0.10 ※	1.6±0.10	0.5±0.05	5
	21	2.0±0.10	1.25±0.10	0.85±0.10	9
				1.25±0.10	G
		1.25±0.15 ※	2.0±0.15	0.85±0.10	9
	31	3.2±0.15	1.6±0.15	1.6±0.20	L
	32	3.2±0.30	2.5±0.20	1.9±0.20	N
				2.5±0.20	M
	45	4.5±0.40	3.2±0.30	2.5±0.20	M

Note :※LW reverse type(MBRL)

⑥Temperature characteristics code

■High dielectric type

Code	Applicable standard		Temperature range[℃]	Ref. Temp.[℃]	Capacitance change	Capacitance tolerance	Tolerance code
B5	EIA	X5R	−55～＋ 85	25	±15%	±10%	K
						±20%	M
C6	EIA	X6S	−55～＋105	25	±22%	±10%	K
						±20%	M
B7	EIA	X7R	−55～＋125	25	±15%	±10%	K
						±20%	M
C7	EIA	X7S	−55～＋125	25	±22%	±10%	K
						±20%	M
D7	EIA	X7T	−55～＋125	25	＋22%/−33%	±10%	K
						±20%	M

■Temperature compensating type

Code	Applicable standard		Temperature range[℃]	Ref. Temp.[℃]	Capacitance change	Capacitance tolerance	Tolerance code
CG	JIS	CG	−55～＋125	20	0±30ppm/℃	±0.05pF	A
						±0.1pF	B
						±0.25pF	C
	EIA	C0G		25		±0.5pF	D
						±2%	G
						±5%	J
CH	JIS	CH	−55～＋125	20	0±60ppm/℃	±0.25pF	C
						±0.5pF	D
	EIA	C0H		25		±5%	J
CJ	JIS	CJ	−55～＋125	20	0±120ppm/℃	±0.25pF	C
	EIA	C0J		25			
CK	JIS	CK	−55～＋125	20	0±250ppm/℃	±0.25pF	C
	EIA	C0K		25			

⑦Nominal capacitance

Code (example)	Nominal capacitance
0R5	0.5pF
010	1pF
100	10pF
101	100pF
102	1,000pF
103	0.01μF
104	0.1μF
105	1μF
106	10μF
107	100μF

Note : R＝Decimal point

⑧Capacitance tolerance

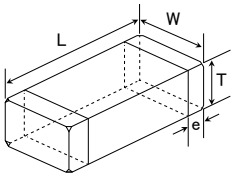
Code	Capacitance tolerance
A	±0.05pF
B	±0.1pF
C	±0.25pF
D	±0.5pF
G	±2%
J	±5%
K	±10%
M	±20%

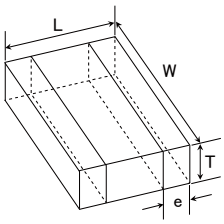
⑨Packaging

Code	Packaging
F	φ178mm Taping (2mm pitch)
R	φ178mm Embossed Taping (4mm pitch)
T	φ178mm Taping (4mm pitch)
P	φ178mm Taping (4mm pitch, 1000 pcs/reel) 3225 type(Thickness code M)

⑩Internal code

■STANDARD EXTERNAL DIMENSIONS





※LW reverse type

Type	JIS (mm)	EIA (inch)	Dimension [mm] (inch)				
			L	W	T	*1	e
MBAS□06	0603	0201	0.6±0.03 (0.024±0.001)	0.3±0.03 (0.012±0.001)	0.3±0.03 (0.012±0.001)	3	0.15±0.05 (0.006±0.002)
MBAR□10 MBAS□10	1005	0402	1.0±0.05 (0.039±0.002)	0.5±0.05 (0.020±0.002)	0.5±0.05 (0.020±0.002)	5	0.25±0.10 (0.010±0.004)
MBRL□10 ※	0510	0204	0.52±0.05 (0.020±0.002)	1.0±0.05 (0.039±0.002)	0.3±0.05 (0.012±0.002)	3	0.18±0.08 (0.007±0.003)
MBAS□16 MBAR□16	1608	0603	1.6±0.10 (0.063±0.004)	0.8±0.10 (0.031±0.004)	0.7±0.10 (0.028±0.004)	7	0.35±0.25 (0.014±0.010)
					0.8±0.10 (0.031±0.004)	8	
MBJC□16	1608	0603	1.6±0.10 (0.063±0.004)	0.8±0.10 (0.031±0.004)	0.8±0.10 (0.031±0.004)	8	0.35+0.3/−0.25 (0.014+0.012/−0.010)
MBRL□16 ※	0816	0306	0.8±0.10 (0.031±0.004)	1.6±0.10 (0.063±0.004)	0.5±0.05 (0.020±0.002)	5	0.25±0.15 (0.010±0.006)
MBAS□21 MBAR□21	2012	0805	2.0±0.10 (0.079±0.004)	1.25±0.10 (0.049±0.004)	0.85±0.10 (0.033±0.004)	9	0.5±0.25 (0.020±0.010)
					1.25±0.10 (0.049±0.004)	G	
MBJC□21	2012	0805	2.0±0.10 (0.079±0.004)	1.25±0.10 (0.049±0.004)	0.85±0.10 (0.033±0.004)	9	0.5+0.35/−0.25 (0.020+0.014/−0.010)
					1.25±0.10 (0.049±0.004)	G	
MBRL□21 ※	1220	0508	1.25±0.15 (0.049±0.006)	2.0±0.15 (0.079±0.006)	0.85±0.10 (0.033±0.004)	9	0.3±0.2 (0.012±0.008)
MBAS□31	3216	1206	3.2±0.15 (0.126±0.006)	1.6±0.15 (0.063±0.006)	1.15±0.10 (0.045±0.004)	Q	0.5+0.35/−0.25 (0.020+0.014/−0.010)
					1.6±0.20 (0.063±0.008)	L	
MBJC□31	3216	1206	3.2±0.15 (0.126±0.006)	1.6±0.15 (0.063±0.006)	1.15±0.10 (0.045±0.004)	Q	0.6+0.4/−0.3 (0.024+0.016/−0.012)
					1.6±0.20 (0.063±0.008)	L	
MBAS□32	3225	1210	3.2±0.30 (0.126±0.012)	2.5±0.20 (0.098±0.008)	1.9±0.20 (0.075±0.008)	N	0.6±0.3 (0.024±0.012)
					2.5±0.20 (0.098±0.008)	M	
MBJC□32	3225	1210	3.2±0.30 (0.126±0.012)	2.5±0.20 (0.098±0.008)	1.9±0.20 (0.075±0.008)	N	0.6+0.4/−0.3 (0.024+0.016/−0.012)
					2.5±0.20 (0.098±0.008)	M	
MBAS□45	4532	1812	4.5±0.40 (0.177±0.016)	3.2±0.30 (0.126±0.012)	2.5±0.20 (0.098±0.008)	M	0.9±0.6 (0.035±0.024)

Note :※LW reverse type(MBRL), *1.Thickness code

■STANDARD QUANTITY

Type			Thickness		Standard quantity[pcs]	
Code	JIS(mm)	EIA(inch)	[mm]	Code	Paper tape	Embossed tape
06	0603	0201	0.3	3	15000	—
10	1005	0402	0.5	5	10000	—
	0510 ※	0204 ※	0.3	3		
16	1608	0603	0.7	7	4000	—
			0.8	8		
			0.8	8	3000 (Soft Termination)	3000 (Soft Termination)
	0816 ※	0306 ※	0.5	5	—	4000
21	2012	0805	0.85	9	4000	—
			1.25	G	—	3000
			1.25	G	—	2000 (Soft Termination)
	1220 ※	0508 ※	0.85	9	4000	—
31	3216	1206	1.15	Q	—	3000
			1.6	L	—	2000
32	3225	1210	1.9	N	—	2000
			2.5	M	—	500(T), 1000(P)
45	4532	1812	2.5	M	—	500

Note : ※.LW Reverse type(MBRL)

Mouser Electronics

Authorized Distributor

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TAIYO YUDEN:

MBASE105SB7103KFNA18 MBASU105SB5223KFNA18 MBARQ105SCG010BFRA01 MBARQ105SCG010BFRA18 MBARQ105SCG010CFRA01 MBARQ105SCG010CFRA18 MBARQ105SCG020BFRA01 MBARQ105SCG020BFRA18 MBARQ105SCG020CFRA01 MBARQ105SCG020CFRA18 MBARQ105SCG030BFRA01 MBARQ105SCG030BFRA18 MBARQ105SCG030CFRA01 MBARQ105SCG030CFRA18 MBARQ105SCG0R5BFRA01 MBARQ105SCG0R5BFRA18 MBARQ105SCG0R5CFRA01 MBARQ105SCG0R5CFRA18 MBARQ105SCG0R6BFRA01 MBARQ105SCG0R6BFRA18 MBARQ105SCG0R6CFRA01 MBARQ105SCG0R6CFRA18 MBARQ105SCG0R7BFRA01 MBARQ105SCG0R7BFRA18 MBARQ105SCG0R7CFRA01 MBARQ105SCG0R7CFRA18 MBARQ105SCG0R8BFRA01 MBARQ105SCG0R8BFRA18 MBARQ105SCG0R8CFRA01 MBARQ105SCG0R8CFRA18 MBARQ105SCG0R9BFRA01 MBARQ105SCG0R9BFRA18 MBARQ105SCG0R9CFRA01 MBARQ105SCG0R9CFRA18 MBARQ105SCG100JFRA01 MBARQ105SCG100JFRA18 MBARQ105SCG110JFRA01 MBARQ105SCG110JFRA18 MBARQ105SCG120JFRA01 MBARQ105SCG120JFRA18 MBARQ105SCG130JFRA01 MBARQ105SCG130JFRA18 MBARQ105SCG150JFRA01 MBARQ105SCG150JFRA18 MBARQ105SCG160JFRA01 MBARQ105SCG160JFRA18 MBARQ105SCG180JFRA01 MBARQ105SCG180JFRA18 MBARQ105SCG1R1BFRA01 MBARQ105SCG1R1BFRA18 MBARQ105SCG1R1CFRA01 MBARQ105SCG1R1CFRA18 MBARQ105SCG1R2BFRA01 MBARQ105SCG1R2BFRA18 MBARQ105SCG1R2CFRA01 MBARQ105SCG1R2CFRA18 MBARQ105SCG1R3BFRA01 MBARQ105SCG1R3BFRA18 MBARQ105SCG1R3CFRA01 MBARQ105SCG1R3CFRA18 MBARQ105SCG1R5BFRA01 MBARQ105SCG1R5BFRA18 MBARQ105SCG1R5CFRA01 MBARQ105SCG1R5CFRA18 MBARQ105SCG1R6BFRA01 MBARQ105SCG1R6BFRA18 MBARQ105SCG1R6CFRA01 MBARQ105SCG1R6CFRA18 MBARQ105SCG1R8BFRA01 MBARQ105SCG1R8BFRA18 MBARQ105SCG1R8CFRA01 MBARQ105SCG1R8CFRA18 MBARQ105SCG200JFRA01 MBARQ105SCG200JFRA18 MBARQ105SCG220JFRA01 MBARQ105SCG220JFRA18 MBARQ105SCG240JFRA01 MBARQ105SCG240JFRA18 MBARQ105SCG270JFRA01 MBARQ105SCG270JFRA18 MBARQ105SCG2R2BFRA01 MBARQ105SCG2R2BFRA18 MBARQ105SCG2R2CFRA01 MBARQ105SCG2R2CFRA18 MBARQ105SCG2R4BFRA01 MBARQ105SCG2R4BFRA18

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