

MMC

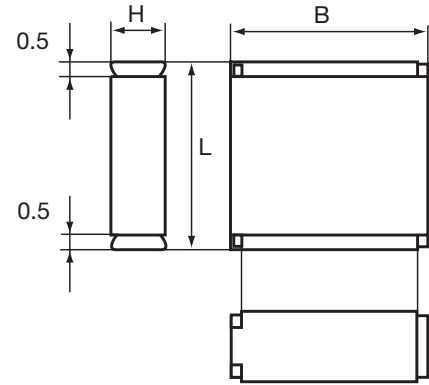
- Metallized polyester (PET) SMD
- According to IEC 60384-19

TYPICAL APPLICATIONS

Bypassing, signal coupling. General purpose for highest reliability.

CONSTRUCTION

Polyester (PET) film capacitor for surface mounting. Encapsulation in self-extinguishing material meeting the requirements of UL 94V-0.



Components may be vertically mounted for decreased footprint. See page 69.

TECHNICAL DATA

Rated voltage U_R , VDC	50	63	100	250	400
Rated voltage U_R , VAC	30	40	63	160	200
Capacitance range, nF	1 - 15000	1 - 4700	1 - 3300	1 - 1000	1 - 470

Capacitance tolerance $\pm 10\%$, $\pm 5\%$; other tolerances on request.

Category temperature range -55°C to $+100^\circ\text{C}$

Rated temperature $+85^\circ\text{C}$

Voltage derating The rated voltage is decreased with $1.25\%/^\circ\text{C}$ from $+85^\circ\text{C}$.

Climatic category 55/100/56

Test voltage $1.6 \times U_R$, 60s

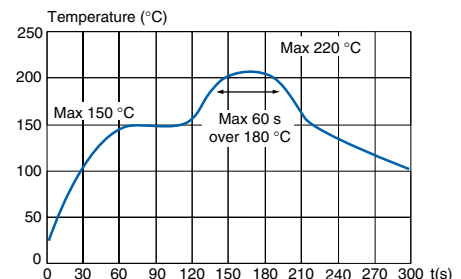
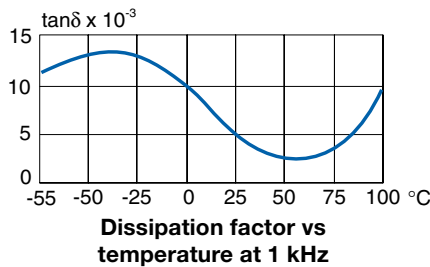
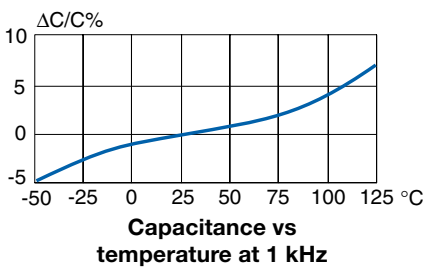
Insulation resistance Minimum value between terminals
Measured at $+20^\circ\text{C}$ according to IEC 60384-19

	$C \leq 0.33 \mu\text{F}$	$C > 0.33 \mu\text{F}$
$U_R \leq 100 \text{ V}$	10 000 M Ω	3000 s
$U_R > 100 \text{ V}$	30 000 M Ω	10 000 s

Dissipation factor Max values at $+23^\circ\text{C}$

	$C \leq 100\text{nF}$	$100\text{nF} < C \leq 1\mu\text{F}$	$1\mu\text{F} < C \leq 10\mu\text{F}$	$C > 10\mu\text{F}$
1 kHz	0.8%	0.8%	0.8%	0.8%
10 kHz	1.2%	1.2%	1.5%	3.0%
100 kHz	2.5%	3.0%		

Pulse rise time The capacitors can withstand an unlimited number of pulses with a dU/dt according to article table. For voltages (U) lower than the rated voltage (U_R), the specified dU/dt can be multiplied by U_R/U .



RECOMMENDED SOLDERING CONDITIONS

Electrode temperature, Reflow soldering

Preheating temperature should be less than 150°C . The time above 180°C should be less than 1 minute. The peak temperature must not exceed 220°C .

ARTICLE TABLE

Capacitance μF	Dimensions in mm ± 0.2			Quantity per package		Weight g	Max dU/dt V/ μs	Article code
	B	H	L	Bulk	Reel			
50 VDC/30 VAC								
CHIP LENGTH 5.7 MM CODE 2220								
0.0010	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 102K50J31 TR12
0.0012	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 122K50J31 TR12
0.0015	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 152K50J31 TR12
0.0018	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 182K50J31 TR12
0.0022	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 222K50J31 TR12
0.0027	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 272K50J31 TR12
0.0033	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 332K50J31 TR12
0.0039	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 392K50J31 TR12
0.0047	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 472K50J31 TR12
0.0056	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 562K50J31 TR12
0.0068	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 682K50J31 TR12
0.0082	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 822K50J31 TR12
0.010	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 103K50J31 TR12
0.012	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 123K50J31 TR12
0.015	5.0	2.5	5.7	2000	3100	0.13	30	MMC5.7 153K50J31 TR12
0.018	5.0	2.5	5.7	2000	3100	0.13	30	MMC5.7 183K50J31 TR12
0.022	5.0	2.5	5.7	2000	3100	0.13	30	MMC5.7 223K50J31 TR12
0.027	5.0	2.5	5.7	2000	3100	0.13	30	MMC5.7 273K50J31 TR12
0.033	5.0	2.5	5.7	2000	3100	0.13	30	MMC5.7 333K50J31 TR12
0.039	5.0	2.5	5.7	2000	3100	0.13	30	MMC5.7 393K50J31 TR12
0.047	5.0	2.5	5.7	2000	3100	0.13	30	MMC5.7 473K50J31 TR12
0.056	5.0	2.5	5.7	2000	3100	0.13	30	MMC5.7 563K50J31 TR12
0.068	5.0	2.5	5.7	2000	3100	0.13	20	MMC5.7 683K50J31 TR12
0.082	5.0	2.5	5.7	2000	3100	0.13	20	MMC5.7 823K50J31 TR12
0.10	5.0	2.5	5.7	2000	3100	0.13	20	MMC5.7 104K50J31 TR12
0.12	5.0	3.0	5.7	2000	2400	0.15	20	MMC5.7 124K50J33 TR12
0.15	5.0	3.0	5.7	2000	2400	0.15	20	MMC5.7 154K50J33 TR12
0.18	5.0	4.0	5.7	2000	2100	0.20	20	MMC5.7 184K50J35 TR12
0.22	5.0	4.0	5.7	2000	2100	0.20	20	MMC5.7 224K50J35 TR12
CHIP LENGTH 7.3 MM CODE 2824								
0.0010	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 102K50K31 TR12
0.0012	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 122K50K31 TR12
0.0015	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 152K50K31 TR12
0.0018	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 182K50K31 TR12
0.0022	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 222K50K31 TR12
0.0027	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 272K50K31 TR12
0.0033	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 332K50K31 TR12
0.0039	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 392K50K31 TR12
0.0047	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 472K50K31 TR12
0.0056	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 562K50K31 TR12
0.0068	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 682K50K31 TR12
0.0082	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 822K50K31 TR12
0.010	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 103K50K31 TR12
0.012	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 123K50K31 TR12
0.015	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 153K50K31 TR12
0.018	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 183K50K31 TR12
0.022	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 223K50K31 TR12
0.027	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 273K50K31 TR12
0.033	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 333K50K31 TR12
0.039	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 393K50K31 TR12
0.047	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 473K50K31 TR12
0.056	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 563K50K31 TR12
0.068	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 683K50K31 TR12
0.082	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 823K50K31 TR12
0.10	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 104K50K31 TR12
0.12	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 124K50K31 TR12
0.15	6.0	2.5	7.3	2000	3100	0.18	25	MMC7.3 154K50K31 TR12
0.18	6.0	3.0	7.3	2000	2500	0.22	25	MMC7.3 184K50K33 TR12
0.22	6.0	3.0	7.3	2000	2500	0.22	25	MMC7.3 224K50K33 TR12

ARTICLE TABLE

Capacitance μF	Dimensions in mm ± 0.2			Quantity per package		Weight g	Max dU/dt V/ μs	Article code
	B	H	L	Bulk	Reel			
50 VDC/30 VAC								
CHIP LENGTH 7.3 MM CODE 2824								
0.27	6.0	3.5	7.3	2000	2300	0.25	25	MMC7.3 274K50K35 TR12
0.33	6.0	3.5	7.3	2000	2300	0.25	25	MMC7.3 334K50K35 TR12
0.39	6.0	3.5	7.3	2000	2300	0.25	25	MMC7.3 394K50K35 TR12
0.47	6.0	3.5	7.3	2000	2300	0.25	25	MMC7.3 474K50K35 TR12
0.56	6.0	4.5	7.3	1000	1700	0.36	12	MMC7.3 564K50K37 TR12
0.68	6.0	4.5	7.3	1000	1700	0.36	12	MMC7.3 684K50K37 TR12
0.82	6.0	4.5	7.3	1000	1700	0.36	12	MMC7.3 824K50K37 TR12
1.0	6.0	4.5	7.3	1000	1700	0.36	12	MMC7.3 105K50K37 TR12
CHIP LENGTHS 10.2, 12.7 AND 16.5 MM CODES 4036, 5045 AND 6560								
0.022	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 223K50A31 TR16
0.027	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 273K50A31 TR16
0.033	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 333K50A31 TR16
0.039	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 393K50A31 TR16
0.047	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 473K50A31 TR16
0.056	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 563K50A31 TR16
0.068	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 683K50A31 TR16
0.082	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 823K50A31 TR16
0.10	9.1	5.5	10.2	1000	800	0.88	30	MMC10.2 104K50A31 TR16
0.12	9.1	5.5	10.2	1000	800	0.88	30	MMC10.2 124K50A31 TR16
0.15	9.1	5.5	10.2	1000	800	0.88	30	MMC10.2 154K50A31 TR16
0.18	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 184K50A31 TR16
0.22	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 224K50A31 TR16
0.27	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 274K50A31 TR16
0.33	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 334K50A31 TR16
0.39	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 394K50A31 TR16
0.47	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 474K50A31 TR16
0.56	9.1	5.5	10.2	1000	800	0.88	12	MMC10.2 564K50A31 TR16
0.68	9.1	5.5	10.2	1000	800	0.88	12	MMC10.2 684K50A31 TR16
0.82	9.1	5.5	10.2	1000	800	0.88	12	MMC10.2 824K50A31 TR16
1.0	9.1	5.5	10.2	1000	800	0.88	12	MMC10.2 105K50A31 TR16
1.2	9.1	5.5	10.2	1000	800	0.88	12	MMC10.2 125K50A31 TR16
1.5	9.1	5.5	10.2	1000	800	0.88	12	MMC10.2 155K50A31 TR16
1.8	9.1	5.5	10.2	1000	800	0.88	12	MMC10.2 185K50A31 TR16
2.2	9.1	5.5	10.2	1000	800	0.88	12	MMC10.2 225K50A31 TR16
2.7	11.5	6.5	12.7	1000	600	1.57	8	MMC12.7 275K50B31 TR24
3.3	11.5	6.5	12.7	1000	600	1.57	8	MMC12.7 335K50B31 TR24
3.9	11.5	6.5	12.7	1000	600	1.57	8	MMC12.7 395K50B31 TR24
4.7	11.5	6.5	12.7	1000	600	1.57	8	MMC12.7 475K50B31 TR24
5.6	15.0	7.0	16.5	800	500	2.76	5	MMC16.5 565K50C31 TR24
6.8	15.0	7.0	16.5	800	500	2.76	5	MMC16.5 685K50C31 TR24
8.2	15.0	7.0	16.5	800	500	2.76	5	MMC16.5 825K50C31 TR24
10.0	15.0	7.0	16.5	800	500	2.76	5	MMC16.5 106K50C31 TR24
12.0	15.0	7.0	16.5	800	500	2.76	5	MMC16.5 126K50C31 TR24
15.0	15.0	7.0	16.5	800	500	2.76	5	MMC16.5 156K50C31 TR24
63 VDC/40 VAC								
CHIP LENGTH 7.3 MM CODE 2824								
0.0010	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 102K63K31 TR12
0.0012	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 122K63K31 TR12
0.0015	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 152K63K31 TR12
0.0018	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 182K63K31 TR12
0.0022	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 222K63K31 TR12
0.0027	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 272K63K31 TR12
0.0033	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 332K63K31 TR12
0.0039	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 392K63K31 TR12

ARTICLE TABLE

Capacitance µF	Dimensions in mm ±0.2			Quantity per package		Weight g	Max dU/dt V/µs	Article code
	B	H	L	Bulk	Reel			

63 VDC/40 VAC

CHIP LENGTH 7.3 MM CODE 2824

0.0047	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 472K63K31 TR12
0.0056	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 562K63K31 TR12
0.0068	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 682K63K31 TR12
0.0082	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 822K63K31 TR12
0.010	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 103K63K31 TR12
0.012	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 123K63K31 TR12
0.015	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 153K63K31 TR12
0.018	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 183K63K31 TR12
0.022	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 223K63K31 TR12
0.027	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 273K63K31 TR12
0.033	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 333K63K31 TR12
0.039	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 393K63K31 TR12
0.047	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 473K63K31 TR12
0.056	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 563K63K31 TR12
0.068	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 683K63K31 TR12
0.082	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 823K63K31 TR12
0.10	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 104K63K31 TR12
0.12	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 124K63K31 TR12
0.15	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 154K63K31 TR12
0.18	6.0	3.0	7.3	2000	2500	0.22	25	MMC7.3 184K63K33 TR12
0.22	6.0	3.0	7.3	2000	2500	0.22	25	MMC7.3 224K63K33 TR12
0.27	6.0	3.5	7.3	2000	2300	0.25	25	MMC7.3 274K63K35 TR12
0.33	6.0	3.5	7.3	2000	2300	0.25	25	MMC7.3 334K63K35 TR12
0.39	6.0	3.5	7.3	2000	2300	0.25	25	MMC7.3 394K63K35 TR12
0.47	6.0	3.5	7.3	2000	2300	0.25	25	MMC7.3 474K63K35 TR12

CHIP LENGTHS 10.2, 12.7 AND 16.5 MM CODES 4036, 5045 AND 6560

0.022	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 223K63A31 TR16
0.027	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 273K63A31 TR16
0.033	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 333K63A31 TR16
0.039	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 393K63A31 TR16
0.047	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 473K63A31 TR16
0.056	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 563K63A31 TR16
0.068	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 683K63A31 TR16
0.082	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 823K63A31 TR16
0.10	9.1	5.5	10.2	1000	800	0.88	30	MMC10.2 104K63A31 TR16
0.12	9.1	5.5	10.2	1000	800	0.88	30	MMC10.2 124K63A31 TR16
0.15	9.1	5.5	10.2	1000	800	0.88	30	MMC10.2 154K63A31 TR16
0.18	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 184K63A31 TR16
0.22	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 224K63A31 TR16
0.27	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 274K63A31 TR16
0.33	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 334K63A31 TR16
0.39	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 394K63A31 TR16
0.47	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 474K63A31 TR16
0.56	9.1	5.5	10.2	1000	800	0.88	12	MMC10.2 564K63A31 TR16
0.68	9.1	5.5	10.2	1000	800	0.88	12	MMC10.2 684K63A31 TR16
0.82	9.1	5.5	10.2	1000	800	0.88	12	MMC10.2 824K63A31 TR16
1.0	9.1	5.5	10.2	1000	800	0.88	12	MMC10.2 105K63A31 TR16
1.2	9.1	5.5	10.2	1000	800	0.88	12	MMC10.2 125K63A31 TR16
1.5	9.1	5.5	10.2	1000	800	0.88	12	MMC10.2 155K63A31 TR16
1.8	11.5	6.5	12.7	1000	600	1.57	8	MMC12.7 185K63B31 TR24
2.2	11.5	6.5	12.7	1000	600	1.57	8	MMC12.7 225K63B31 TR24
2.7	11.5	6.5	12.7	1000	600	1.57	8	MMC12.7 275K63B31 TR24
3.3	11.5	6.5	12.7	1000	600	1.57	8	MMC12.7 335K63B31 TR24
3.9	15.0	7.0	16.5	800	500	2.76	5	MMC16.5 395K63C31 TR24
4.7	15.0	7.0	16.5	800	500	2.76	5	MMC16.5 475K63C31 TR24

ARTICLE TABLE

Capacitance µF	Dimensions in mm ±0.2			Quantity per package		Weight g	Max dU/dt V/µs	Article code
	B	H	L	Bulk	Reel			
100 VDC/63 VAC								
CHIP LENGTH 5.7 MM CODE 2220								
0.0010	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 102K100J31 TR12
0.0012	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 122K100J31 TR12
0.0015	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 152K100J31 TR12
0.0018	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 182K100J31 TR12
0.0022	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 222K100J31 TR12
0.0027	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 272K100J31 TR12
0.0033	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 332K100J31 TR12
0.0039	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 392K100J31 TR12
0.0047	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 472K100J31 TR12
0.0056	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 562K100J31 TR12
0.0068	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 682K100J31 TR12
0.0082	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 822K100J31 TR12
0.010	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 103K100J31 TR12
0.012	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 123K100J31 TR12
0.015	5.0	2.5	5.7	2000	3100	0.13	30	MMC5.7 153K100J31 TR12
0.018	5.0	2.5	5.7	2000	3100	0.13	30	MMC5.7 183K100J31 TR12
0.022	5.0	2.5	5.7	2000	3100	0.13	30	MMC5.7 223K100J31 TR12
0.027	5.0	2.5	5.7	2000	3100	0.13	30	MMC5.7 273K100J31 TR12
0.033	5.0	2.5	5.7	2000	3100	0.13	30	MMC5.7 333K100J31 TR12
0.039	5.0	2.5	5.7	2000	3100	0.13	30	MMC5.7 393K100J31 TR12
0.047	5.0	2.5	5.7	2000	3100	0.13	30	MMC5.7 473K100J31 TR12
0.056	5.0	3.0	5.7	2000	2400	0.15	30	MMC5.7 563K100J33 TR12
0.068	5.0	3.0	5.7	2000	2400	0.15	30	MMC5.7 683K100J33 TR12
0.082	5.0	4.0	5.7	2000	2100	0.20	30	MMC5.7 823K100J35 TR12
0.10	5.0	4.0	5.7	2000	2100	0.20	30	MMC5.7 104K100J35 TR12
CHIP LENGTH 7.3 MM CODE 2824								
0.0010	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 102K100K31 TR12
0.0012	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 122K100K31 TR12
0.0015	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 152K100K31 TR12
0.0018	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 182K100K31 TR12
0.0022	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 222K100K31 TR12
0.0027	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 272K100K31 TR12
0.0033	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 332K100K31 TR12
0.0039	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 392K100K31 TR12
0.0047	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 472K100K31 TR12
0.0056	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 562K100K31 TR12
0.0068	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 682K100K31 TR12
0.0082	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 822K100K31 TR12
0.010	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 103K100K31 TR12
0.012	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 123K100K31 TR12
0.015	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 153K100K31 TR12
0.018	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 183K100K31 TR12
0.022	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 223K100K31 TR12
0.027	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 273K100K31 TR12
0.033	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 333K100K31 TR12
0.039	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 393K100K31 TR12
0.047	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 473K100K31 TR12
0.056	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 563K100K31 TR12
0.068	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 683K100K31 TR12
0.082	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 823K100K31 TR12
0.10	6.0	2.5	7.3	2000	3100	0.18	30	MMC7.3 104K100K31 TR12
0.12	6.0	3.0	7.3	2000	2500	0.22	30	MMC7.3 124K100K33 TR12
0.15	6.0	3.5	7.3	2000	2300	0.25	30	MMC7.3 154K100K35 TR12
0.18	6.0	3.5	7.3	2000	2300	0.25	30	MMC7.3 184K100K35 TR12
0.22	6.0	4.5	7.3	1000	1700	0.36	30	MMC7.3 224K100K37 TR12

ARTICLE TABLE

Capacitance μF	Dimensions in mm ± 0.2			Quantity per package		Weight g	Max dU/dt V/ μs	Article code
	B	H	L	Bulk	Reel			
100 VDC/63 VAC								
CHIP LENGTHS 10.2, 12.7 AND 16.5 MM CODES 4036, 5045 AND 6560								
0.022	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 223K100A31 TR16
0.027	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 273K100A31 TR16
0.033	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 333K100A31 TR16
0.039	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 393K100A31 TR16
0.047	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 473K100A31 TR16
0.056	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 563K100A31 TR16
0.068	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 683K100A31 TR16
0.082	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 823K100A31 TR16
0.10	9.1	5.5	10.2	1000	800	0.88	30	MMC10.2 104K100A31 TR16
0.12	9.1	5.5	10.2	1000	800	0.88	30	MMC10.2 124K100A31 TR16
0.15	9.1	5.5	10.2	1000	800	0.88	30	MMC10.2 154K100A31 TR16
0.18	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 184K100A31 TR16
0.22	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 224K100A31 TR16
0.27	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 274K100A31 TR16
0.33	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 334K100A31 TR16
0.39	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 394K100A31 TR16
0.47	9.1	5.5	10.2	1000	800	0.88	20	MMC10.2 474K100A31 TR16
0.56	11.5	6.5	12.7	1000	600	1.57	12	MMC12.7 564K100B31 TR24
0.68	11.5	6.5	12.7	1000	600	1.57	12	MMC12.7 684K100B31 TR24
0.82	11.5	6.5	12.7	1000	600	1.57	12	MMC12.7 824K100B31 TR24
1.0	11.5	6.5	12.7	1000	600	1.57	12	MMC12.7 105K100B31 TR24
1.2	15.0	7.0	16.5	800	500	2.76	8	MMC16.5 125K100C31 TR24
1.5	15.0	7.0	16.5	800	500	2.76	8	MMC16.5 155K100C31 TR24
1.8	15.0	7.0	16.5	800	500	2.76	8	MMC16.5 185K100C31 TR24
2.2	15.0	7.0	16.5	800	500	2.76	8	MMC16.5 225K100C31 TR24
2.7	15.0	7.0	16.5	800	500	2.76	8	MMC16.5 275K100C31 TR24
3.3	15.0	7.0	16.5	800	500	2.76	8	MMC16.5 335K100C31 TR24
250 VDC/160 VAC								
CHIP LENGTH 5.7 MM CODE 2220								
0.0010	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 102K250J31 TR12
0.0012	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 122K250J31 TR12
0.0015	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 152K250J31 TR12
0.0018	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 182K250J31 TR12
0.0022	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 222K250J31 TR12
0.0027	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 272K250J31 TR12
0.0033	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 332K250J31 TR12
0.0039	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 392K250J31 TR12
0.0047	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 472K250J31 TR12
0.0056	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 562K250J31 TR12
0.0068	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 682K250J31 TR12
0.0082	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 822K250J31 TR12
0.010	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 103K250J31 TR12
0.012	5.0	2.5	5.7	2000	3100	0.13	40	MMC5.7 123K250J31 TR12
0.015	5.0	3.0	5.7	2000	2400	0.15	40	MMC5.7 153K250J33 TR12
0.018	5.0	4.0	5.7	2000	2100	0.20	40	MMC5.7 183K250J35 TR12
0.022	5.0	4.0	5.7	2000	2100	0.20	40	MMC5.7 223K250J35 TR12
CHIP LENGTH 7.3 MM CODE 2824								
0.0010	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 102K250K31 TR12
0.0012	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 122K250K31 TR12
0.0015	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 152K250K31 TR12
0.0018	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 182K250K31 TR12
0.0022	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 222K250K31 TR12
0.0027	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 272K250K31 TR12
0.0033	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 332K250K31 TR12
0.0039	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 392K250K31 TR12

ARTICLE TABLE

Capacitance μF	Dimensions in mm ± 0.2			Quantity per package		Weight g	Max dU/dt V/ μs	Article code
	B	H	L	Bulk	Reel			
250 VDC/160 VAC								
CHIP LENGTH 7.3 MM CODE 2824								
0.0047	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 472K250K31 TR12
0.0056	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 562K250K31 TR12
0.0068	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 682K250K31 TR12
0.0082	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 822K250K31 TR12
0.010	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 103K250K31 TR12
0.012	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 123K250K31 TR12
0.015	6.0	2.5	7.3	2000	3100	0.18	40	MMC7.3 153K250K31 TR12
0.018	6.0	3.0	7.3	2000	2500	0.18	40	MMC7.3 183K250K33 TR12
0.022	6.0	3.0	7.3	2000	2500	0.18	40	MMC7.3 223K250K33 TR12
0.027	6.0	3.5	7.3	2000	2300	0.18	40	MMC7.3 273K250K35 TR12
0.033	6.0	3.5	7.3	2000	2300	0.18	40	MMC7.3 333K250K35 TR12
0.039	6.0	3.5	7.3	2000	2300	0.18	40	MMC7.3 393K250K35 TR12
0.047	6.0	4.5	7.3	1000	1700	0.18	40	MMC7.3 473K250K37 TR12
CHIP LENGTHS 10.2, 12.7 AND 16.5 MM CODES 4036, 5045 AND 6560								
0.022	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 223K250A31 TR16
0.027	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 273K250A31 TR16
0.033	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 333K250A31 TR16
0.039	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 393K250A31 TR16
0.047	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 473K250A31 TR16
0.056	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 563K250A31 TR16
0.068	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 683K250A31 TR16
0.082	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 823K250A31 TR16
0.10	9.1	5.5	10.2	1000	800	0.88	30	MMC10.2 104K250A31 TR16
0.12	9.1	5.5	10.2	1000	800	0.88	30	MMC10.2 124K250A31 TR16
0.15	9.1	5.5	10.2	1000	800	0.88	30	MMC10.2 154K250A31 TR16
0.18	11.5	6.5	12.7	1000	600	1.57	20	MMC12.7 184K250B31 TR24
0.22	11.5	6.5	12.7	1000	600	1.57	20	MMC12.7 224K250B31 TR24
0.27	11.5	6.5	12.7	1000	600	1.57	20	MMC12.7 274K250B31 TR24
0.33	11.5	6.5	12.7	1000	600	1.57	20	MMC12.7 334K250B31 TR24
0.39	11.5	6.5	12.7	1000	600	1.57	20	MMC12.7 394K250B31 TR24
0.47	11.5	6.5	12.7	1000	600	1.57	20	MMC12.7 474K250B31 TR24
0.56	15.0	7.0	16.5	800	500	2.76	12	MMC16.5 564K250C31 TR24
0.68	15.0	7.0	16.5	800	500	2.76	12	MMC16.5 684K250C31 TR24
0.82	15.0	7.0	16.5	800	500	2.76	12	MMC16.5 824K250C31 TR24
1.0	15.0	7.0	16.5	800	500	2.76	12	MMC16.5 105K250C31 TR24
400 VDC/200 VAC								
CHIP LENGTH 7.3 MM CODE 2824								
0.0010	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 102K400K31 TR12
0.0012	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 122K400K31 TR12
0.0015	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 152K400K31 TR12
0.0018	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 182K400K31 TR12
0.0022	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 222K400K31 TR12
0.0027	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 272K400K31 TR12
0.0033	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 332K400K31 TR12
0.0039	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 392K400K31 TR12
0.0047	6.0	2.5	7.3	2000	3100	0.18	50	MMC7.3 472K400K31 TR12
0.0056	6.0	3.0	7.3	2000	2500	0.22	50	MMC7.3 562K400K33 TR12
0.0068	6.0	3.0	7.3	2000	2500	0.22	50	MMC7.3 682K400K33 TR12
0.0082	6.0	3.0	7.3	2000	2500	0.22	50	MMC7.3 822K400K33 TR12
0.010	6.0	3.5	7.3	2000	2300	0.25	50	MMC7.3 103K400K35 TR12
0.012	6.0	3.5	7.3	2000	2300	0.25	50	MMC7.3 123K400K35 TR12
0.015	6.0	4.5	7.3	2000	1700	0.36	50	MMC7.3 153K400K37 TR12

ARTICLE TABLE

Capacitance μF	Dimensions in mm ± 0.2			Quantity per package		Weight g	Max dU/dt V/ μs	Article code
	B	H	L	Bulk	Reel			
400 VDC/200 VAC								
CHIP LENGTHS 10.2, 12.7 AND 16.5 MM CODES 4036, 5045 AND 6560								
0.022	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 223K400A31 TR16
0.027	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 273K400A31 TR16
0.033	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 333K400A31 TR16
0.039	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 393K400A31 TR16
0.047	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 473K400A31 TR16
0.056	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 563K400A31 TR16
0.068	9.1	5.5	10.2	1000	800	0.88	40	MMC10.2 683K400A31 TR16
0.082	11.5	6.5	12.7	1000	600	1.57	30	MMC12.7 823K400B31 TR24
0.10	11.5	6.5	12.7	1000	600	1.57	30	MMC12.7 104K400B31 TR24
0.12	11.5	6.5	12.7	1000	600	1.57	30	MMC12.7 124K400B31 TR24
0.15	11.5	6.5	12.7	1000	600	1.57	30	MMC12.7 154K400B31 TR24
0.18	15.0	7.0	16.5	800	500	2.76	20	MMC16.5 184K400C31 TR24
0.22	15.0	7.0	16.5	800	500	2.76	20	MMC16.5 224K400C31 TR24
0.27	15.0	7.0	16.5	800	500	2.76	20	MMC16.5 274K400C31 TR24
0.33	15.0	7.0	16.5	800	500	2.76	20	MMC16.5 334K400C31 TR24
0.39	15.0	7.0	16.5	800	500	2.76	20	MMC16.5 394K400C31 TR24
0.47	15.0	7.0	16.5	800	500	2.76	20	MMC16.5 474K400C31 TR24

ORDERING INFORMATION

See article table and pages 18 to 23 for options and article code construction.

MARKING

- Rated capacitance
 - Capacitance tolerance code
 - Rated voltage code
 - Capacitor type M for MMC
 - Manufacturing date code according to IEC 60062 (year, month)
- See also page 68.