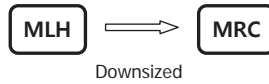


MRC series

Downsize High Ripple RoHS Compliant

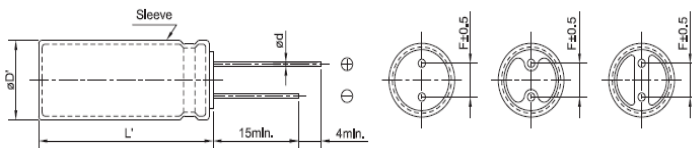
- 105°C 2,000Hrs assured.
- Downsized, High ripple
- For SMPS, IP-Board, Adaptor
- RoHS compliant
- Halogen-free capacitors are also available.



Specifications

Item	Characteristics													
Rated Voltage Range	160 ~ 400 Vdc	450 ~ 500 Vdc												
Operating Temperature Range	-40 ~ +105 °C	-25 ~ +105 °C												
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)													
Leakage Current	I=0.01CV+40(µA) at CV ≤ 1,000, I=0.04CV+100(µA) at CV > 1,000 (at 20°C, 1min) I=0.03CV+15(µA) at CV ≤ 1,000, I=0.02CV+25(µA) at CV > 1,000 (at 20°C, 5min) Where, I:Max. Leakage current(µA), C:Nominal capacitance(µF), V:Rated voltage(Vdc)													
Dissipation Factor(Tanδ)	<table border="1"> <tr> <td>Rated voltage (Vdc)</td> <td>160 ~ 250</td> <td>350 ~ 500</td> </tr> <tr> <td>Tanδ (max.)</td> <td>0.20</td> <td>0.24</td> </tr> </table> (at 20°C, 120Hz)		Rated voltage (Vdc)	160 ~ 250	350 ~ 500	Tanδ (max.)	0.20	0.24						
Rated voltage (Vdc)	160 ~ 250	350 ~ 500												
Tanδ (max.)	0.20	0.24												
Temperature characteristics (Max,impedance ratio)	<table border="1"> <tr> <td>Rated voltage (Vdc)</td> <td>160 ~ 250</td> <td>350 ~ 400</td> <td>450 ~ 500</td> </tr> <tr> <td>Z(-25°C)/Z(20°C)</td> <td>3</td> <td>5</td> <td>6</td> </tr> <tr> <td>Z(-40°C)/Z(20°C)</td> <td>6</td> <td>6</td> <td>-</td> </tr> </table> (at 120Hz)		Rated voltage (Vdc)	160 ~ 250	350 ~ 400	450 ~ 500	Z(-25°C)/Z(20°C)	3	5	6	Z(-40°C)/Z(20°C)	6	6	-
Rated voltage (Vdc)	160 ~ 250	350 ~ 400	450 ~ 500											
Z(-25°C)/Z(20°C)	3	5	6											
Z(-40°C)/Z(20°C)	6	6	-											
Load life	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for specified life times at 105°C 2,000hrs. Capacitance change ≤±20% of the initial value Tan δ ≤200% of the initial specified value Leakage current ≤The initial specified value													
Shelf life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied. The rated voltage shall be applied to the capacitors for a minimum of 30 minutes at least 24 hours and not more than 48 hours before the measurements. Capacitance change ≤±20% of the initial value Tanδ ≤200% of the initial specified value Leakage current ≤500%The initial specified value													

Dimensions

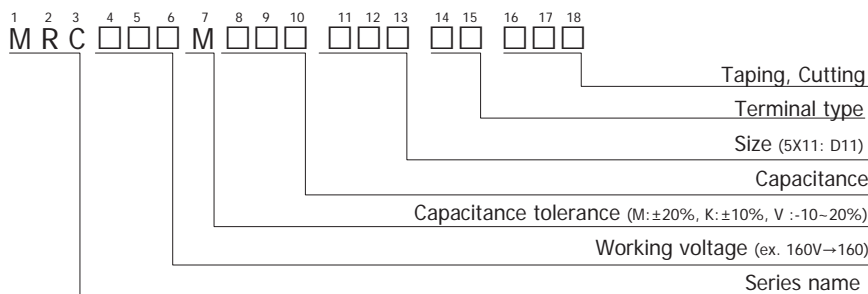


Unit(mm)

	6.3	8	10	12.5	16	18	20	22
ØD	6.3	8	10	12.5	16	18	20	22
Ød	0.5	0.6	0.6	0.6	0.8	0.8	0.8	0.8
F	2.5	3.5	5.0	5.0	7.5	7.5	7.5	7.5
ØD'	ØD+0.5 max.							
L'	L+1.5 max		L+2.0 max					

- Printed white color letter on PET brown sleeve

Code numbering system



Ø6.3	E
Ø8	F
Ø10	G
Ø12.5	X
Ø16	J
Ø18	K
Ø20	L
Ø22	M



MRC series

Standard Ratings

Note 1) Ripple current = mArms/105°C, 120Hz

WV (Vdc)	Cap (uF)	Size ØxL (mm)	Tan δ	Ripple 1)	Code No
160	22	10 x 20	0.20	192	MRC160□220G20CS□□□
	33	10 x 20	0.20	236	MRC160□330G20CS□□□
	47	10 x 25	0.20	307	MRC160□470G25CS□□□
	68	12.5 x 20	0.20	375	MRC160□680X20CS□□□
	82	12.5 x 25	0.20	449	MRC160□820X25CS□□□
	100	12.5 x 30	0.20	535	MRC160□101X30CS□□□
	120	16 x 20	0.20	559	MRC160□121J20CS□□□
	150	12.5 x 35	0.20	645	MRC160□151X35CS□□□
		16 x 25	0.20	671	MRC160□151J25CS□□□
	180	16 x 25	0.20	735	MRC160□181J25CS□□□
	220	16 x 31.5	0.20	876	MRC160□221J32CS□□□
	270	16 x 35.5	0.20	992	MRC160□271J36CS□□□
	330	18 x 31.5	0.20	1,110	MRC160□331K32CS□□□
	390	18 x 35.5	0.20	1,246	MRC160□391K36CS□□□
200	3.3	6.3 x 11	0.20	36	MRC200□3R3E11CS□□□
	4.7	8 x 11.5	0.20	51	MRC200□4R7F11CS□□□
	6.8	8 x 11.5	0.20	62	MRC200□6R8F11CS□□□
	10	8 x 11.5	0.20	75	MRC200□100F11CS□□□
	22	8 x 20	0.20	135	MRC200□220F20CS□□□
	33	10 x 20	0.20	236	MRC200□330G20CS□□□
	47	10 x 25	0.20	307	MRC200□470G25CS□□□
	68	12.5 x 25	0.20	375	MRC200□680X25CS□□□
	82	12.5 x 25	0.20	449	MRC200□820X25CS□□□
	100	12.5 x 30	0.20	535	MRC200□101X30CS□□□
	120	16 x 25	0.20	600	MRC200□121J25CS□□□
	150	16 x 25	0.20	671	MRC200□151J25CS□□□
	180	16 x 31.5	0.20	793	MRC200□181J32CS□□□
	220	16 x 31.5	0.20	876	MRC200□221J32CS□□□
	270	16 x 35.5	0.20	992	MRC200□271J36CS□□□
		18 x 31.5	0.20	1,004	MRC200□271K32CS□□□
330	16 x 40	0.20	1,132	MRC200□331J40CS□□□	
	18 x 35.5	0.20	1,146	MRC200□331K36CS□□□	
390	18 x 40	0.20	1,266	MRC200□391K40CS□□□	
250	4.7	8 x 11.5	0.20	58	MRC250□4R7F12CS□□□
	6.8	8 x 11.5	0.20	70	MRC250□6R8F12CS□□□
	10	8 x 15	0.20	86	MRC250□100F15CS□□□
	22	10 x 20	0.20	192	MRC250□220G20CS□□□
	33	10 x 25	0.20	258	MRC250□330G25CS□□□
	47	12.5 x 20	0.20	312	MRC250□470X20CS□□□
	68	12.5 x 30	0.20	444	MRC250□680X30CS□□□
	82	16 x 25	0.20	496	MRC250□820J25CS□□□
	100	16 x 25	0.20	548	MRC250□101J25CS□□□
	120	16 x 25	0.20	600	MRC250□121J25CS□□□
	150	16 x 31.5	0.20	724	MRC250□151J32CS□□□
	180	16 x 35.5	0.20	810	MRC250□181J36CS□□□
		18 x 31.5	0.20	819	MRC250□181K32CS□□□
	220	16 x 40	0.20	924	MRC250□221J40CS□□□
18 x 35.5		0.20	936	MRC250□221K36CS□□□	
270	18 x 40	0.20	1,053	MRC250□271K40CS□□□	
350	10	10 x 16	0.20	116	MRC350□100G16CS□□□
	15	10 x 20	0.20	154	MRC350□150G20CS□□□
	22	10 x 25	0.20	207	MRC350□220G25CS□□□
	33	12.5 x 25	0.20	276	MRC350□330X25CS□□□
	39	10 x 40	0.20	340	MRC350□390G40CS□□□
	47	16 x 25	0.20	364	MRC350□470J25CS□□□
	56	16 x 25	0.20	397	MRC350□560J25CS□□□
	68	16 x 31.5	0.20	472	MRC350□680J32CS□□□
		18 x 25	0.20	456	MRC350□680K25CS□□□
	82	16 x 35.5	0.20	529	MRC350□820J36CS□□□
18 x 31.5		0.20	536	MRC350□820K32CS□□□	

WV (Vdc)	Cap (uF)	Size ØxL (mm)	Tan δ	Ripple 1)	Code No
350	100	18 x 31.5	0.20	591	MRC350□101K32CS□□□
	120	18 x 35.5	0.20	669	MRC350□121K36CS□□□
400	4.7	6.3 x 15	0.20	35	MRC400□4R7E15CS□□□
		8 x 11.5	0.20	92	MRC400□6R8F12CS□□□
	6.8	8 x 15	0.20	85	MRC400□6R8F15CS□□□
		8 x 15	0.20	95	MRC400□8R2F15CS□□□
	8.2	8 x 20	0.20	100	MRC400□8R2F20CS□□□
		8 x 20	0.20	105	MRC400□100F20CS□□□
	10	10 x 16	0.20	116	MRC400□100G16CS□□□
		10 x 20	0.20	154	MRC400□150G20CS□□□
	22	10 x 25	0.20	207	MRC400□220G25CS□□□
	33	12.5 x 25	0.20	276	MRC400□330X25CS□□□
	39	12.5 x 30	0.20	323	MRC400□390X30CS□□□
	47	16 x 25	0.20	364	MRC400□470J25CS□□□
	56	16 x 25	0.20	397	MRC400□560J25CS□□□
	68	16 x 31.5	0.20	472	MRC400□680J32CS□□□
	82	16 x 35.5	0.20	570	MRC400□820J36CS□□□
		18 x 31.5	0.20	585	MRC400□820K32CS□□□
100	16 x 40	0.20	603	MRC400□101J40CS□□□	
	18 x 35.5	0.20	735	MRC400□101K36CS□□□	
120	18 x 40	0.20	749	MRC400□121K40CS□□□	
150	18 x 40	0.20	815	MRC400□151K40CS□□□	
420	68	18 x 31.5	0.24	500	MRC420□680K32CS□□□
	82	18 x 31.5	0.24	560	MRC420□820K32CS□□□
	100	18 x 35.5	0.24	720	MRC420□101K36CS□□□
	120	18 x 40	0.24	740	MRC420□121K40CS□□□
	150	18 x 45	0.24	753	MRC420□151K45CS□□□
	20 x 40	0.24	757	MRC420□151L40CS□□□	
450	4.7	8 x 20	0.24	71	MRC450□4R7F20CS□□□
	8.2	10 x 16	0.24	102	MRC450□8R2G16CS□□□
	10	10 x 20	0.24	122	MRC450□100G20CS□□□
	15	12.5 x 20	0.24	163	MRC450□150X20CS□□□
	22	12.5 x 25	0.24	219	MRC450□220X25CS□□□
	33	16 x 25	0.24	289	MRC450□330J25CS□□□
	39	12.5 x 31.5	0.24	358	MRC450□390X32CS□□□
	47	16 x 25	0.24	353	MRC450□470J25CS□□□
	53	10 x 50	0.24	400	MRC450□530G50CS□□□
	56	16 x 31.5	0.24	415	MRC450□560J32CS□□□
	68	16 x 35.5	0.24	467	MRC450□680J36CS□□□
		18 x 31.5	0.24	500	MRC450□680K32CS□□□
	82	12.5 x 50	0.24	670	MRC450□820X50CS□□□
		16 x 40	0.24	530	MRC450□820J40CS□□□
	100	18 x 31.5	0.24	560	MRC450□820K32CS□□□
		12.5 x 60	0.24	790	MRC450□101X60CS□□□
120	18 x 35.5	0.24	720	MRC450□101K36CS□□□	
	18 x 40	0.24	740	MRC450□121K40CS□□□	
150	18 x 45	0.24	753	MRC450□151K45CS□□□	
	20 x 40	0.24	757	MRC450□151L40CS□□□	
500	22	12.5 x 30	0.24	238	MRC500□220X30CS□□□
	33	12.5 x 45	0.24	327	MRC500□330X45CS□□□
	47	16 x 35.5	0.24	367	MRC500□470J36CS□□□
		18 x 31.5	0.24	370	MRC500□470K32CS□□□
	56	16 x 40	0.24	430	MRC500□560J40CS□□□
		12.5 x 60	0.24	450	MRC500□560X60CS□□□
	68	18 x 35.5	0.24	489	MRC500□680K36CS□□□
	82	18 x 40	0.24	560	MRC500□820K40CS□□□
	100	18 x 45	0.24	620	MRC500□101K45CS□□□
		20 x 40	0.24	603	MRC500□101L40CS□□□
120	22 x 45	0.24	702	MRC500□121M45CS□□□	
150	22 x 50	0.24	827	MRC500□151M50CS□□□	



MRC series

■ Rated ripple current multipliers

Frequency(Hz)	120	1K	10K	50K	100K
Factor	1.00	1.25	1.50	1.60	1.75