

### A FEATURES

- Saturation current rating up to 15.3 Amps
- Inductance ratings from 0.8 to 1000  $\mu$ H
- Widely applications, highly recommend to use for switching regulators
- Operating Temperature range from -40°C to +125°C (Including Self-heating)
- 260°C reflow peak temperature qualified

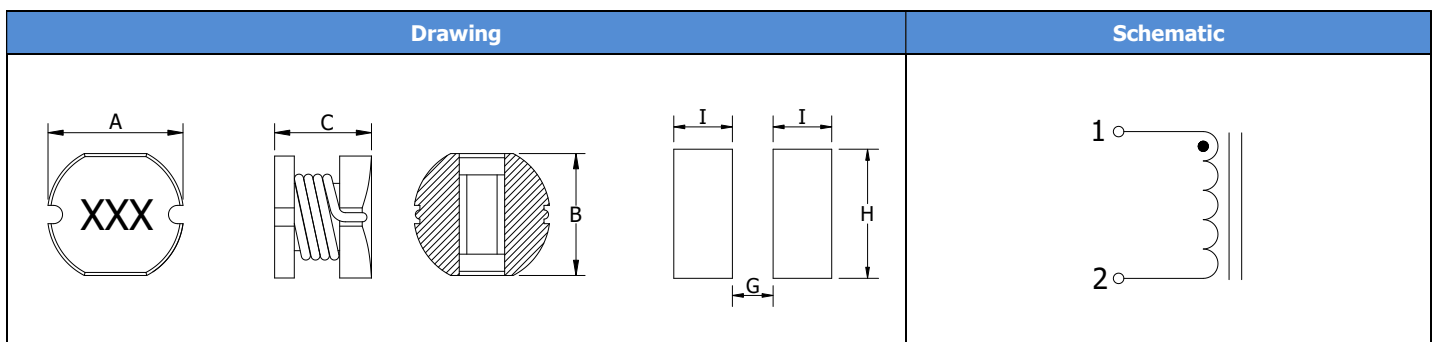


### B PART NUMBER SYSTEM

1MC    105    -    100    M    E  
 ①        ②                    ③        ④        ⑤

①	Series	②	Dimension Code (L*W*H) (mm)	
1MC	Series Code		31 (3.5×3.0×1.6)	32(3.5×3.0×2.1)
			43 (4.0×4.5×3.2)	54 (5.2×5.8×4.5)
			75 (7.0×7.8×5.0)	105 (9.0×10.0×5.4)
③	Inductance Code	④	Inductance Tolerance	
e.g.	Calculation	K	±10%	
2R2	2.2 $\mu$ H	L	±15%	
100	$10 \times 10^0 \mu\text{H} = 10\mu\text{H}$	M	±20%	
101	$10 \times 10^1 \mu\text{H} = 100\mu\text{H}$			
⑤	RoHS Compliant			

### C DRAWINGS AND DIMENSIONS



XXX = Inductance value

Case Size	Dimensions (mm)					
	A	B	C	I <sub>ref.</sub>	G <sub>ref.</sub>	H <sub>ref.</sub>
1MC31	3.5±0.2	3.0±0.2	1.6±0.3	1.6	0.8	3.5
1MC32	3.5±0.2	3.0±0.2	2.1±0.3	1.6	0.8	3.5
1MC43	4.5±0.3	4.0±0.3	3.2±0.3	1.75	1.5	5.0
1MC54	5.8±0.3	5.2±0.3	4.5±0.3	2.15	1.7	6.0
1MC75	7.8±0.3	7.0±0.3	5.0±0.5	3.00	2.0	8.0
1MC105	10.0±0.4	9.0±0.4	5.4±0.5	3.75	2.5	10.0

## D SPECIFICATIONS

Part Number	Inductance <sup>1</sup>		DCR <sup>2</sup>			
	$\mu\text{H}$	Tolerance	Typ.( $\Omega$ )	Max.( $\Omega$ )	I <sub>rms</sub> <sup>3</sup> (A)	I <sub>sat</sub> <sup>4</sup> (A)
1MC31-1R0MF	1.0	±20%	0.048	0.058	1.60	2.24
1MC31-1R5MF	1.5	±20%	0.065	0.078	1.55	2.17
1MC31-2R2MF	2.2	±20%	0.083	0.100	1.47	1.91
1MC31-3R3MF	3.3	±20%	0.105	0.126	1.34	1.61
1MC31-3R9MF	3.9	±20%	0.117	0.140	1.24	1.36
1MC31-4R7MF	4.7	±20%	0.132	0.158	1.22	1.34
1MC31-5R6MF	5.6	±20%	0.155	0.186	1.09	1.20
1MC31-6R8MF	6.8	±20%	0.178	0.213	0.96	1.06
1MC31-8R2MF	8.2	±20%	0.198	0.238	0.84	0.92
1MC31-100MF	10	±20%	0.256	0.307	0.70	0.77
1MC32-1R0MF	1.0	±20%	0.040	0.048	1.75	2.45
1MC32-2R2MF	2.2	±20%	0.060	0.072	1.68	2.18
1MC32-3R3MF	3.3	±20%	0.090	0.108	1.58	1.90
1MC32-4R7MF	4.7	±20%	0.143	0.172	1.50	1.65
1MC32-5R6MF	5.6	±20%	0.160	0.192	1.36	1.50
1MC32-6R8MF	6.8	±20%	0.183	0.219	1.22	1.34
1MC32-8R2MF	8.2	±20%	0.206	0.247	1.09	1.20
1MC32-100MF	10	±20%	0.238	0.286	0.95	1.05
1MC32-120MF	12	±20%	0.271	0.325	0.88	0.97
1MC32-150MF	15	±20%	0.390	0.468	0.82	0.90
1MC32-180MF	18	±20%	0.455	0.546	0.76	0.84
1MC43-1R0MF	1.0	±20%	0.014	0.049	4.00	5.72
1MC43-1R4MF	1.4	±20%	0.022	0.056	3.40	5.04
1MC43-1R8MF	1.8	±20%	0.028	0.064	2.70	3.60
1MC43-2R2MF	2.2	±20%	0.034	0.071	2.50	3.38
1MC43-2R7MF	2.7	±20%	0.039	0.079	2.25	2.97
1MC43-3R3MF	3.3	±20%	0.041	0.086	2.00	2.88
1MC43-3R9MF	3.9	±20%	0.054	0.094	1.88	2.57
1MC43-4R7MF	4.7	±20%	0.059	0.110	1.82	2.46
1MC43-5R6MF	5.6	±20%	0.069	0.126	1.58	2.43
1MC43-6R8MF	6.8	±20%	0.076	0.131	1.54	2.10
1MC43-8R2MF	8.2	±20%	0.116	0.146	1.50	1.80
1MC43-100MF	10	±20%	0.118	0.182	1.45	1.74
1MC43-120MF	12	±20%	0.156	0.210	1.28	1.62
1MC43-150MF	15	±20%	0.204	0.235	1.20	1.46
1MC43-180MF	18	±20%	0.225	0.338	1.10	1.29
1MC43-220MF	22	±20%	0.261	0.370	1.00	1.22
1MC43-270KF	27	±10%	0.328	0.522	0.94	1.00
1MC43-330KF	33	±10%	0.370	0.540	0.86	0.90
1MC43-390KF	39	±10%	0.418	0.870	0.77	0.87
1MC43-470KF	47	±10%	0.523	0.844	0.68	0.77
1MC43-560KF	56	±10%	0.714	0.937	0.64	0.75

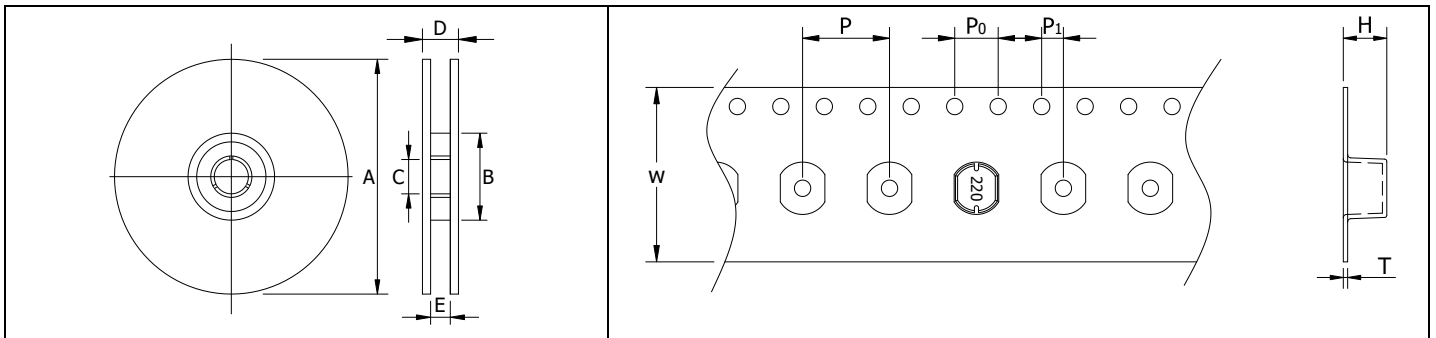
Part Number	Inductance <sup>1</sup>		DCR <sup>2</sup>			
	μH	Tolerance	Typ.(Ω)	Max.(Ω)	I <sub>rms</sub> <sup>3</sup> (A)	I <sub>sat</sub> <sup>4</sup> (A)
1MC43-680KF	68	±10%	0.754	1.117	0.56	0.68
1MC43-820KF	82	±10%	1.003	1.180	0.43	0.60
1MC43-101KF	100	±10%	1.012	1.190	0.41	0.58
1MC54-R33MF	0.33	±20%	0.0060	0.0080	10.80	15.30
1MC54-2R2MF	2.2	±20%	0.0260	0.0410	4.60	8.20
1MC54-2R7MF	2.7	±20%	0.0320	0.045	4.00	8.00
1MC54-3R3MF	3.3	±20%	0.042	0.060	4.00	7.50
1MC54-4R7MF	4.7	±20%	0.056	0.071	3.00	5.50
1MC54-6R8MF	6.8	±20%	0.071	0.082	2.40	5.00
1MC54-100MF	10	±20%	0.078	0.100	2.20	2.50
1MC54-120MF	12	±20%	0.082	0.110	2.00	1.94
1MC54-150MF	15	±20%	0.089	0.140	1.53	1.90
1MC54-180MF	18	±20%	0.104	0.150	1.45	1.69
1MC54-220MF	22	±20%	0.109	0.180	1.28	1.53
1MC54-270MF	27	±20%	0.133	0.200	1.19	1.40
1MC54-330LF	33	±15%	0.150	0.230	1.09	1.17
1MC54-390LF	39	±15%	0.215	0.320	0.94	1.10
1MC54-470LF	47	±15%	0.260	0.370	0.86	1.00
1MC54-560KF	56	±10%	0.298	0.420	0.77	0.90
1MC54-680KF	68	±10%	0.313	0.460	0.64	0.86
1MC54-820KF	82	±10%	0.475	0.600	0.60	0.72
1MC54-101KF	100	±10%	0.510	0.650	0.57	0.68
1MC54-121KF	120	±10%	0.660	0.930	0.49	0.63
1MC54-151KF	150	±10%	0.720	1.100	0.46	0.54
1MC54-181KF	180	±10%	0.850	1.380	0.42	0.50
1MC54-221KF	220	±10%	0.945	1.570	0.42	0.47
1MC54-331KF	330	±10%	1.350	1.700	0.33	0.35
1MC54-471KF	470	±10%	1.950	2.300	0.28	0.33
1MC54-681KF	680	±10%	2.300	3.000	0.23	0.25
1MC54-821KF	820	±10%	3.850	4.500	0.22	0.22
1MC54-102KF	1000	±10%	4.500	4.800	0.21	0.20
1MC75-2R2MF	2.2	±20%	0.0080	0.0150	6.00	6.00
1MC75-3R3MF	3.3	±20%	0.0120	0.0180	4.90	4.90
1MC75-4R7MF	4.7	±20%	0.0160	0.0190	4.50	4.50
1MC75-5R6MF	5.6	±20%	0.0180	0.0220	4.00	4.00
1MC75-6R8MF	6.8	±20%	0.0220	0.0260	3.70	3.80
1MC75-8R2MF	8.2	±20%	0.029	0.040	3.20	3.20
1MC75-100KF	10	±10%	0.044	0.070	2.30	2.95
1MC75-120KF	12	±10%	0.042	0.080	2.18	2.20
1MC75-150KF	15	±10%	0.044	0.090	1.93	2.23
1MC75-180KF	18	±10%	0.053	0.100	1.89	2.14
1MC75-220KF	22	±10%	0.065	0.110	1.76	1.81
1MC75-270KF	27	±10%	0.074	0.120	1.48	1.62
1MC75-330KF	33	±10%	0.088	0.130	1.35	1.47

Part Number	Inductance <sup>1</sup>		DCR <sup>2</sup>			
	μH	Tolerance	Typ.(Ω)	Max.(Ω)	I <sub>rms</sub> <sup>3</sup> (A)	I <sub>sat</sub> <sup>4</sup> (A)
1MC75-390KF	39	±10%	0.116	0.160	1.25	1.33
1MC75-470KF	47	±10%	0.134	0.180	1.18	1.24
1MC75-560KF	56	±10%	0.189	0.240	1.04	1.14
1MC75-680KF	68	±10%	0.218	0.280	0.99	1.05
1MC75-820KF	82	±10%	0.248	0.370	0.90	0.95
1MC75-101KF	100	±10%	0.208	0.430	0.77	0.86
1MC75-121KF	120	±10%	0.308	0.470	0.67	0.81
1MC75-151KF	150	±10%	0.467	0.640	0.60	0.71
1MC75-181KF	180	±10%	0.574	0.710	0.55	0.57
1MC75-221KF	220	±10%	0.614	0.960	0.51	0.56
1MC75-271KF	270	±10%	0.699	1.110	0.47	0.51
1MC75-331KF	330	±10%	0.810	1.260	0.43	0.48
1MC75-391KF	390	±10%	1.151	1.770	0.38	0.43
1MC75-471KF	470	±10%	1.370	1.960	0.36	0.38
1MC105-1R2MF	1.2	±20%	0.004	0.006	7.40	11.00
1MC105-2R2MF	2.2	±20%	0.007	0.010	7.00	8.00
1MC105-3R3MF	3.3	±20%	0.009	0.015	6.00	7.00
1MC105-4R7MF	4.7	±20%	0.012	0.017	5.00	6.00
1MC105-5R6MF	5.6	±20%	0.015	0.019	4.80	4.50
1MC105-6R8MF	6.8	±20%	0.016	0.022	4.40	5.00
1MC105-8R2MF	8.2	±20%	0.020	0.026	4.20	4.25
1MC105-100MF	10	±20%	0.028	0.060	2.98	3.24
1MC105-120MF	12	±20%	0.033	0.070	2.72	3.15
1MC105-150MF	15	±20%	0.034	0.080	2.47	2.88
1MC105-180MF	18	±20%	0.043	0.090	2.36	2.43
1MC105-220MF	22	±20%	0.051	0.100	2.04	2.07
1MC105-270MF	27	±20%	0.063	0.110	1.95	1.98
1MC105-330MF	33	±20%	0.083	0.120	1.78	1.89
1MC105-390MF	39	±20%	0.098	0.140	1.62	1.8
1MC105-470KF	47	±10%	0.095	0.170	1.45	1.62
1MC105-560KF	56	±10%	0.112	0.190	1.36	1.53
1MC105-680KF	68	±10%	0.138	0.220	1.19	1.49
1MC105-820KF	82	±10%	0.150	0.250	1.11	1.17
1MC105-101KF	100	±10%	0.200	0.350	1.02	1.1
1MC105-121KF	120	±10%	0.243	0.400	0.94	0.99
1MC105-151KF	150	±10%	0.300	0.470	0.81	0.9
1MC105-181KF	180	±10%	0.320	0.630	0.76	0.78
1MC105-221KF	220	±10%	0.451	0.730	0.67	0.77
1MC105-271KF	270	±10%	0.500	0.970	0.62	0.68
1MC105-331KF	330	±10%	0.750	1.150	0.52	0.59
1MC105-391KF	390	±10%	0.794	1.300	0.49	0.54
1MC105-471KF	470	±10%	0.969	1.480	0.44	0.50
1MC105-561KF	560	±10%	1.047	1.900	0.39	0.47
1MC105-681KF	680	±10%	1.245	2.250	0.36	0.43

Part Number	Inductance <sup>1</sup>		DCR <sup>2</sup>			
	$\mu\text{H}$	Tolerance	Typ.( $\Omega$ )	Max.( $\Omega$ )	Irms <sup>3</sup> (A)	Isat <sup>4</sup> (A)
1MC105-821KF	820	$\pm 10\%$	1.420	2.550	0.32	0.41

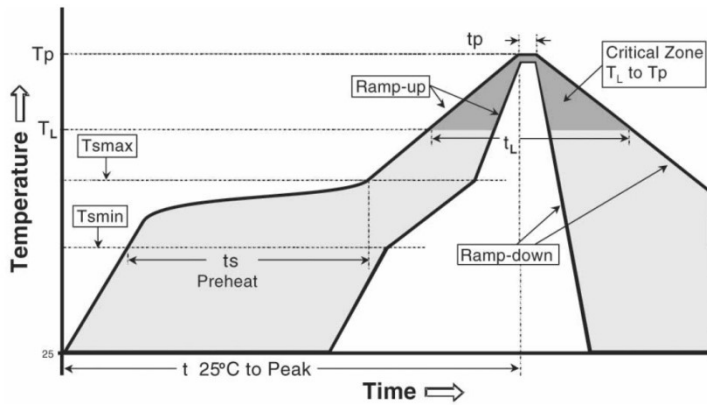
1. Inductance measured @ 100KHz, 0.3V at 25°C temperature.
2. DCR measured @ 25°C.
3. Irms: DC current for an approximate 40°C rise from 20°C ambient temperature.
4. Isat: DC current for approximate 10% roll off at 25°C.
5. Specifications subject to change without notice please check our website for latest information.

## E TAPE AND REEL SPECIFICATIONS



Case Size	Parts per Reel	Reel Dimensions(REF)					Tape Dimensions(REF)					
		A	B	C	D	E	W	P	P <sub>0</sub>	P <sub>1</sub>	H	T
1MC31	3000	330	100	13	19.5	13.5	12	8	4	2	1.8	0.35
1MC32	3000	330	100	13	19.5	13.5	12	8	4	2	2.3	0.35
1MC43	2000	330	100	13	19.5	13.5	12	8	4	2	3.6	0.4
1MC54	1500	330	100	13	19.5	13.5	12	8	4	2	4.8	0.4
1MC75	1000	330	100	13	22.5	16.5	16	12	4	2	5.3	0.4
1MC105	500	330	100	13	22.5	16.5	24	16	4	2	6.1	0.4

**F RECOMMENDED SOLDER REFLOW PROFILE**



Profile Feature	Recommended Conditions
Average ramp-up rate (T <sub>smax</sub> to T <sub>p</sub> )	3°C/second max.
Preheat	
Temperature Min (T <sub>smin</sub> )	150°C
Temperature Max (T <sub>smax</sub> )	200°C
Time (T <sub>smin</sub> to T <sub>smax</sub> )(t <sub>s</sub> )	60-180 seconds
Time maintained above:	
Temperature (T <sub>L</sub> )	217°C
Time (t <sub>L</sub> )	60-150 seconds
Peak Temperature (T <sub>p</sub> )	See Table2
Time within 5°C of actual Peak Temperature (t <sub>p</sub> ) <sup>2</sup>	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max

Table 1

Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350 - 2000	Volume mm <sup>3</sup> >2000
< 1.6mm	260°C	260°C	260°C
1.6mm - 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

Table 2

1. The above profiles are based on IPC/JEDEC J-STD-020C.
2. Exceeding these conditions may cause lowered product reliability.