

A FEATURES

- Dual winding shielded inductor can be used as single/dual/coupled inductor or 1:1 transformer
- Operating Temperature range from -40°C to +125°C (Including Self-heating)
- 260°C reflow peak temperature qualified
- Inductance up to 1mH in parallel mode for all case size
- High strength sealing epoxy with stable temperatures character to keep the parts strong at wide range temperatures: (Typical Hardness: ShoreD 86 @25°C, ShoreD 70 @125°C)
- Available for 4 case size, up to 129 size (12.5×12.5×10.0mm) to meet with higher current requirements
- Recommend for SEPIC and Flyback applications
- Custom designs on request

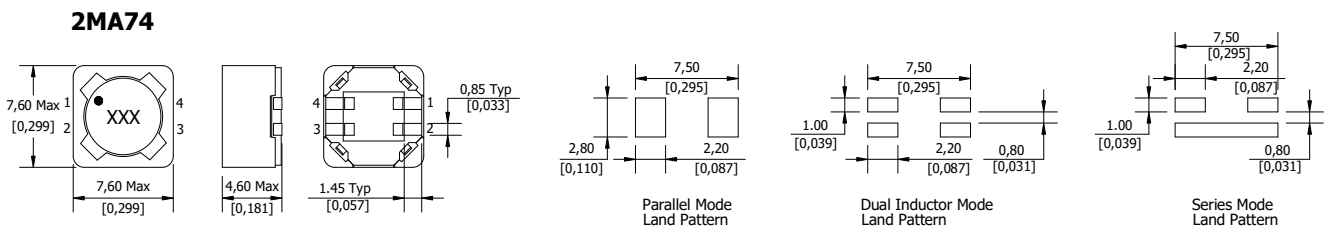


B PART NUMBER SYSTEM

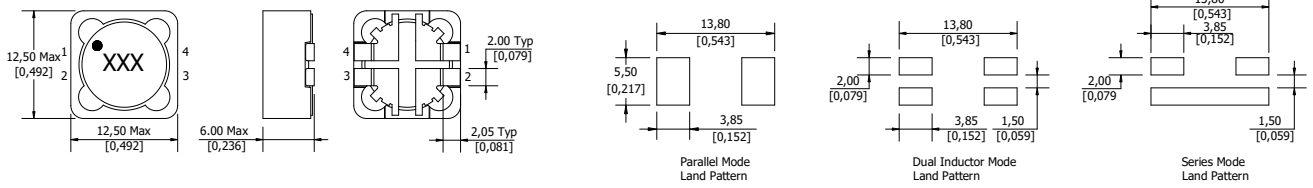
2MA 125 - 100 M F
 ① ② ③ ④ ⑤

①	Series	②	Dimension Code (L*W*H) (mm)	
2MA	Series Code		74 (7.6×7.6×4.6)	125 (12.5×12.5×6.0)
			127 (12.5×12.5×8.0)	129 (12.5×12.5×10.0)
③	Inductance Code	⑤	RoHS Compliant	
e.g.	Calculation			
2R2	2.2μH			
100	10×10 ⁰ μH = 10μH			
101	10×10 ¹ μH = 100μH			
④	Inductance Tolerance			
K	±10%			
M	±20%			
N	±30%			

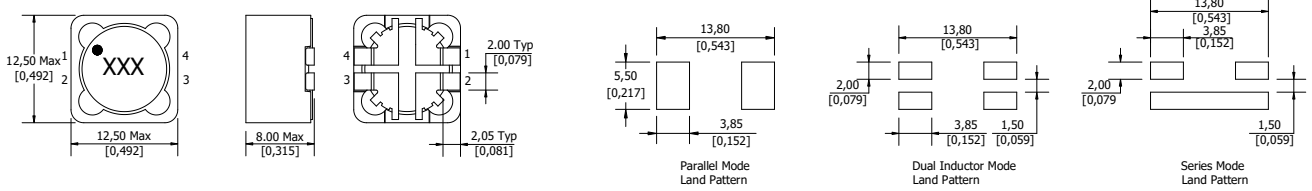
C DRAWINGS AND DIMENSIONS



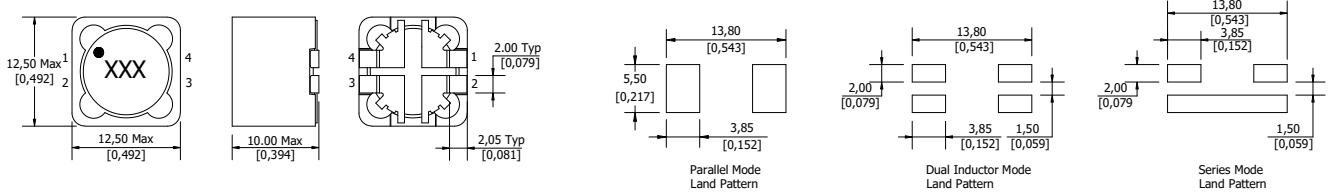
2MA125



2MA127

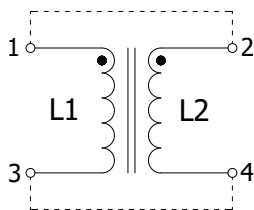


2MA129

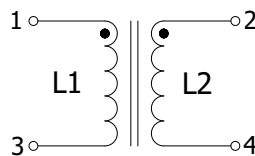


XXX = Inductance value
Dot indicates Pin1.

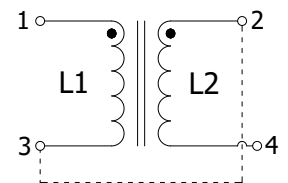
Schematics



Parallel Mode



Dual Inductor Mode



Series Mode

D SPECIFICATIONS

Part Number	Parallel Mode						Series Mode					
	L ¹ (μH)	Tolerance	DCR ² Typ.(Ω)	DCR ² Max.(Ω)	Irms ³ (A)	Isat ⁴ (A)	L ¹ (μH)	Tolerance	DCR ² Typ.(Ω)	DCR ² Max.(Ω)	Irms ³ (A)	Isat ⁴ (A)
2MA74-R33NF	0.33	±30%	0.0074	0.0111	6.20	12.50	1.32	±30%	0.0296	0.0444	3.10	6.25
2MA74-1R0NF	1.00	±30%	0.0100	0.0150	5.33	10.20	4.00	±30%	0.0400	0.0600	2.67	5.10
2MA74-1R5NF	1.50	±30%	0.0115	0.0173	4.96	7.50	6.00	±30%	0.0460	0.0690	2.48	3.75
2MA74-2R2NF	2.20	±30%	0.0130	0.0182	4.66	6.50	8.80	±30%	0.0520	0.0728	2.33	3.25
2MA74-3R3NF	3.30	±30%	0.0183	0.0220	3.94	5.20	13.2	±30%	0.0732	0.0878	1.97	2.60
2MA74-4R7MF	4.70	±20%	0.0254	0.0305	3.34	4.10	18.8	±20%	0.1016	0.1219	1.67	2.05
2MA74-5R6MF	5.60	±20%	0.0350	0.0420	3.00	3.90	22.4	±20%	0.1400	0.1680	1.50	1.95
2MA74-6R8MF	6.80	±20%	0.0418	0.0460	2.60	3.70	27.2	±20%	0.1672	0.1839	1.30	1.85
2MA74-8R2MF	8.20	±20%	0.0441	0.0485	2.53	3.30	32.8	±20%	0.1764	0.1940	1.27	1.65
2MA74-100MF	10.0	±20%	0.0450	0.0490	2.41	2.80	40.0	±20%	0.1800	0.1960	1.21	1.40
2MA74-120MF	12.0	±20%	0.0500	0.0580	2.17	2.50	48.0	±20%	0.2000	0.2320	1.09	1.25
2MA74-150MF	15.0	±20%	0.0637	0.0764	2.11	2.20	60.0	±20%	0.2548	0.3058	1.06	1.10
2MA74-180MF	18.0	±20%	0.0835	0.0910	1.84	2.00	72.0	±20%	0.3340	0.3640	0.92	1.00
2MA74-220MF	22.0	±20%	0.0925	0.1100	1.75	1.90	88.0	±20%	0.3700	0.4400	0.88	0.95
2MA74-270MF	27.0	±20%	0.125	0.150	1.50	1.70	108	±20%	0.5000	0.6000	0.75	0.85
2MA74-330MF	33.0	±20%	0.143	0.170	1.41	1.50	132	±20%	0.5720	0.6800	0.71	0.75
2MA74-390MF	39.0	±20%	0.190	0.228	1.22	1.30	156	±20%	0.7600	0.9120	0.61	0.65
2MA74-470MF	47.0	±20%	0.216	0.259	1.15	1.20	188	±20%	0.8640	1.0368	0.58	0.60
2MA74-560MF	56.0	±20%	0.230	0.276	1.11	1.10	224	±20%	0.9200	1.1040	0.56	0.55
2MA74-680MF	68.0	±20%	0.265	0.318	1.03	1.00	272	±20%	1.060	1.272	0.52	0.50
2MA74-820MF	82.0	±20%	0.345	0.414	0.91	0.90	328	±20%	1.380	1.656	0.46	0.45
2MA74-101MF	100	±20%	0.383	0.460	0.86	0.80	400	±20%	1.532	1.838	0.43	0.40
2MA74-121MF	120	±20%	0.515	0.618	0.74	0.70	480	±20%	2.060	2.472	0.37	0.35
2MA74-151MF	150	±20%	0.591	0.709	0.69	0.65	600	±20%	2.364	2.837	0.35	0.33
2MA74-181MF	180	±20%	0.760	0.912	0.61	0.62	720	±20%	3.040	3.648	0.31	0.31
2MA74-221MF	220	±20%	0.907	1.088	0.56	0.59	880	±20%	3.628	4.354	0.28	0.30
2MA74-271MF	270	±20%	1.210	1.452	0.48	0.55	1080	±20%	4.840	5.808	0.24	0.28
2MA74-331MF	330	±20%	1.410	1.692	0.45	0.49	1320	±20%	5.640	6.768	0.23	0.25
2MA74-391MF	390	±20%	1.525	1.830	0.43	0.45	1560	±20%	6.100	7.320	0.22	0.23
2MA74-471MF	470	±20%	1.740	2.088	0.40	0.41	1880	±20%	6.960	8.352	0.20	0.21
2MA74-561MF	560	±20%	2.220	2.664	0.36	0.38	2240	±20%	8.880	10.656	0.18	0.19
2MA74-681MF	680	±20%	2.580	3.096	0.33	0.36	2720	±20%	10.320	12.384	0.17	0.18
2MA74-821MF	820	±20%	2.930	3.516	0.31	0.30	3280	±20%	11.720	14.064	0.16	0.15
2MA74-102MF	1000	±20%	3.890	4.668	0.27	0.27	4000	±20%	15.560	18.672	0.14	0.14
2MA125-R47NF	0.47	±30%	0.0018	0.0027	17.60	25.00	1.88	±30%	0.0072	0.0108	8.80	12.50
2MA125-1R0NF	1.00	±30%	0.0024	0.0036	13.18	16.50	4.00	±30%	0.0096	0.0144	6.59	8.25
2MA125-1R5NF	1.50	±30%	0.0040	0.0060	10.21	14.40	6.00	±30%	0.0160	0.0240	5.10	7.20
2MA125-2R2NF	2.20	±30%	0.0045	0.0063	9.96	11.70	8.80	±30%	0.0180	0.0252	4.98	5.85
2MA125-3R3NF	3.30	±30%	0.0063	0.0076	9.09	10.40	13.2	±30%	0.0252	0.0302	4.55	5.20
2MA125-4R7MF	4.70	±20%	0.0105	0.0126	7.04	8.72	18.8	±20%	0.0420	0.0504	3.52	4.36
2MA125-5R6MF	5.60	±20%	0.0115	0.0150	6.45	7.26	22.4	±20%	0.0460	0.0600	3.23	3.63

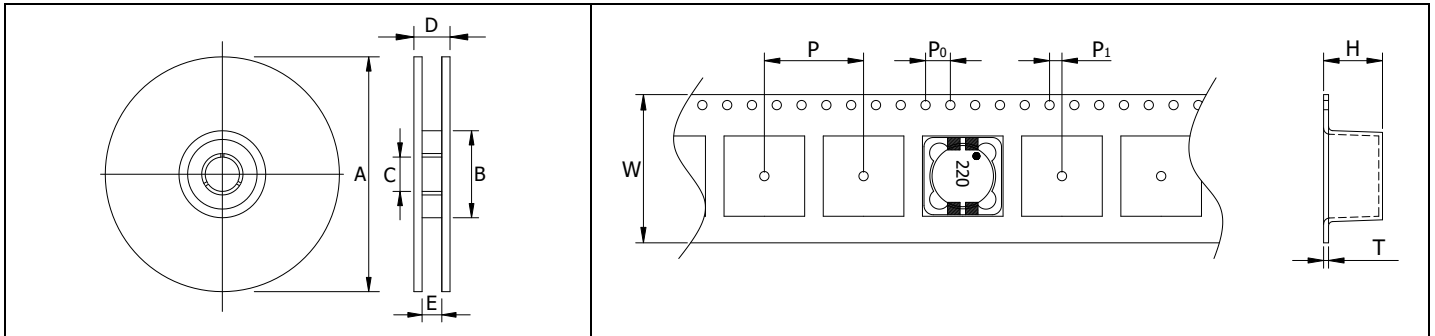
Part Number	Parallel Mode						Series Mode					
	L ¹ (μH)	Tolerance	DCR ² Typ.(Ω)	DCR ² Max.(Ω)	I _{rms} ³ (A)	Isat ⁴ (A)	L ¹ (μH)	Tolerance	DCR ² Typ.(Ω)	DCR ² Max.(Ω)	I _{rms} ³ (A)	Isat ⁴ (A)
2MA125-6R8MF	6.80	±20%	0.0123	0.0180	5.59	7.12	27.2	±20%	0.0492	0.0720	2.80	3.56
2MA125-8R2MF	8.20	±20%	0.0170	0.0210	5.54	6.75	32.8	±20%	0.0680	0.0840	2.77	3.37
2MA125-100MF	10.0	±20%	0.0180	0.0250	5.11	5.87	40.0	±20%	0.0720	0.1000	2.56	2.94
2MA125-120MF	12.0	±20%	0.0230	0.0270	4.81	4.92	48.0	±20%	0.0920	0.1080	2.41	2.46
2MA125-150MF	15.0	±20%	0.0250	0.0300	4.56	4.56	60.0	±20%	0.1000	0.1200	2.28	2.28
2MA125-180MF	18.0	±20%	0.0290	0.0340	4.29	4.35	72.0	±20%	0.1160	0.1360	2.14	2.18
2MA125-220MF	22.0	±20%	0.0310	0.0360	4.17	3.86	88.0	±20%	0.1240	0.1440	2.08	1.93
2MA125-270MF	27.0	±20%	0.0400	0.0510	3.50	3.34	108	±20%	0.1600	0.2040	1.75	1.67
2MA125-330MF	33.0	±20%	0.0540	0.0570	3.31	3.06	132	±20%	0.2160	0.2280	1.66	1.53
2MA125-390MF	39.0	±20%	0.0580	0.0645	3.11	2.93	156	±20%	0.2320	0.2580	1.56	1.46
2MA125-470MF	47.0	±20%	0.0750	0.0820	2.71	2.53	188	±20%	0.3000	0.3280	1.36	1.26
2MA125-560MF	56.0	±20%	0.0850	0.0890	2.65	2.39	224	±20%	0.3400	0.3560	1.32	1.20
2MA125-680MF	68.0	±20%	0.0945	0.1050	2.44	2.30	272	±20%	0.3780	0.4200	1.22	1.15
2MA125-820MF	82.0	±20%	0.120	0.129	2.20	2.05	328	±20%	0.4800	0.5160	1.10	1.03
2MA125-101MF	100	±20%	0.139	0.146	2.07	1.79	400	±20%	0.5560	0.5840	1.03	0.89
2MA125-121MF	120	±20%	0.159	0.170	1.92	1.62	480	±20%	0.6360	0.6800	0.96	0.81
2MA125-151MF	150	±20%	0.185	0.230	1.65	1.50	600	±20%	0.7400	0.9200	0.82	0.75
2MA125-181MF	180	±20%	0.234	0.246	1.59	1.33	720	±20%	0.9360	0.9840	0.80	0.67
2MA125-221MF	220	±20%	0.306	0.335	1.37	1.22	880	±20%	1.224	1.340	0.68	0.61
2MA125-271MF	270	±20%	0.355	0.400	1.25	1.05	1080	±20%	1.420	1.600	0.63	0.52
2MA125-331MF	330	±20%	0.482	0.494	1.12	0.95	1320	±20%	1.928	1.976	0.56	0.48
2MA125-391MF	390	±20%	0.515	0.533	1.08	0.88	1560	±20%	2.060	2.132	0.54	0.44
2MA125-471MF	470	±20%	0.705	0.733	0.92	0.83	1880	±20%	2.820	2.932	0.46	0.41
2MA125-561MF	560	±20%	0.776	0.800	0.88	0.77	2240	±20%	3.104	3.200	0.44	0.38
2MA125-681MF	680	±20%	0.887	0.910	0.83	0.70	2720	±20%	3.548	3.640	0.41	0.35
2MA125-821MF	820	±20%	1.130	1.152	0.74	0.63	3280	±20%	4.520	4.608	0.37	0.31
2MA125-102MF	1000	±20%	1.295	1.335	0.68	0.57	4000	±20%	5.180	5.340	0.34	0.29
2MA127-R47NF	0.47	±30%	0.00195	0.00300	17.90	26.40	1.88	±30%	0.0078	0.0120	8.95	13.20
2MA127-1R0NF	1.00	±30%	0.00261	0.00450	15.50	17.60	4.00	±30%	0.0104	0.0180	7.75	8.80
2MA127-1R5NF	1.50	±30%	0.00341	0.00600	13.50	15.00	6.00	±30%	0.0136	0.0240	6.75	7.50
2MA127-2R2NF	2.20	±30%	0.00400	0.00680	12.70	14.30	8.80	±30%	0.0160	0.0272	6.35	7.15
2MA127-3R3NF	3.30	±30%	0.00680	0.00816	10.40	12.50	13.2	±30%	0.0272	0.0326	5.20	6.25
2MA127-3R9NF	3.90	±30%	0.00850	0.01020	8.77	10.56	15.6	±30%	0.0340	0.0408	4.39	5.28
2MA127-4R7MF	4.70	±20%	0.00940	0.01128	8.25	10.23	18.8	±20%	0.0376	0.0451	4.13	5.12
2MA127-5R6MF	5.60	±20%	0.01080	0.01296	7.47	9.46	22.4	±20%	0.0432	0.0518	3.74	4.73
2MA127-6R8MF	6.80	±20%	0.01200	0.01440	7.34	8.80	27.2	±20%	0.0480	0.0576	3.67	4.40
2MA127-8R2MF	8.20	±20%	0.01600	0.01920	6.32	8.25	32.8	±20%	0.0640	0.0768	3.16	4.13
2MA127-100MF	10.0	±20%	0.01720	0.02000	6.04	7.26	40.0	±20%	0.0688	0.0800	3.02	3.63
2MA127-120MF	12.0	±20%	0.02180	0.02400	5.37	6.50	48.0	±20%	0.0872	0.0960	2.69	3.25
2MA127-150MF	15.0	±20%	0.02400	0.02700	5.04	6.00	60.0	±20%	0.0960	0.1080	2.52	3.00
2MA127-180MF	18.0	±20%	0.03080	0.03696	4.52	5.40	72.0	±20%	0.1232	0.1478	2.26	2.70
2MA127-220MF	22.0	±20%	0.03300	0.03960	4.21	5.00	88.0	±20%	0.1320	0.1584	2.11	2.50
2MA127-270MF	27.0	±20%	0.03500	0.04200	3.74	3.80	108	±20%	0.1400	0.1680	1.87	1.90

Part Number	Parallel Mode						Series Mode					
	L ¹ (μH)	Tolerance	DCR ² Typ.(Ω)	DCR ² Max.(Ω)	I _{rms} ³ (A)	Isat ⁴ (A)	L ¹ (μH)	Tolerance	DCR ² Typ.(Ω)	DCR ² Max.(Ω)	I _{rms} ³ (A)	Isat ⁴ (A)
2MA127-330MF	33.0	±20%	0.04700	0.05640	3.58	3.70	132	±20%	0.1880	0.2256	1.79	1.85
2MA127-390MF	39.0	±20%	0.05300	0.06360	3.35	3.60	156	±20%	0.2120	0.2544	1.68	1.80
2MA127-470MF	47.0	±20%	0.07190	0.08628	2.96	3.45	188	±20%	0.2876	0.3451	1.48	1.73
2MA127-560MF	56.0	±20%	0.08020	0.09624	2.80	2.90	224	±20%	0.3208	0.3850	1.40	1.45
2MA127-680MF	68.0	±20%	0.09000	0.10800	2.62	2.70	272	±20%	0.3600	0.4320	1.31	1.35
2MA127-820MF	82.0	±20%	0.120	0.144	2.23	2.50	328	±20%	0.4800	0.5760	1.12	1.25
2MA127-101MF	100	±20%	0.135	0.162	2.16	2.40	400	±20%	0.5400	0.6480	1.08	1.20
2MA127-121MF	120	±20%	0.182	0.218	1.86	2.00	480	±20%	0.7280	0.8736	0.93	1.00
2MA127-151MF	150	±20%	0.216	0.259	1.71	1.80	600	±20%	0.8640	1.0368	0.86	0.90
2MA127-181MF	180	±20%	0.229	0.275	1.66	1.70	720	±20%	0.9160	1.0992	0.83	0.85
2MA127-221MF	220	±20%	0.323	0.388	1.39	1.50	880	±20%	1.292	1.550	0.70	0.75
2MA127-271MF	270	±20%	0.415	0.498	1.23	1.30	1080	±20%	1.660	1.992	0.62	0.65
2MA127-331MF	330	±20%	0.487	0.584	1.14	1.20	1320	±20%	1.948	2.338	0.57	0.60
2MA127-391MF	390	±20%	0.533	0.640	1.09	1.10	1560	±20%	2.132	2.558	0.55	0.55
2MA127-471MF	470	±20%	0.707	0.848	0.94	1.00	1880	±20%	2.828	3.394	0.47	0.50
2MA127-561MF	560	±20%	0.777	0.932	0.90	0.90	2240	±20%	3.108	3.730	0.45	0.45
2MA127-681MF	680	±20%	1.045	1.254	0.78	0.80	2720	±20%	4.180	5.016	0.39	0.40
2MA127-821MF	820	±20%	1.166	1.399	0.73	0.80	3280	±20%	4.664	5.597	0.37	0.40
2MA127-102MF	1000	±20%	1.334	1.601	0.69	0.70	4000	±20%	5.336	6.403	0.35	0.35
2MA129-R47NF	0.47	±30%	0.0022	0.0033	17.50	27.50	1.88	±30%	0.0084	0.0126	8.75	13.75
2MA129-1R0NF	1.00	±30%	0.0034	0.0051	14.00	25.00	4.00	±30%	0.0136	0.0204	7.00	12.50
2MA129-2R2NF	2.20	±30%	0.0050	0.0060	11.50	20.00	8.80	±30%	0.0200	0.0240	5.75	10.00
2MA129-3R5NF	3.50	±30%	0.0060	0.0090	11.00	16.50	14.0	±30%	0.0240	0.0360	5.50	8.25
2MA129-4R7MF	4.70	±20%	0.0070	0.0110	9.30	13.00	18.8	±20%	0.0280	0.0440	4.65	6.50
2MA129-6R8MF	6.80	±20%	0.0090	0.0140	8.40	12.80	27.2	±20%	0.0360	0.0560	4.20	6.40
2MA129-7R5MF	7.50	±20%	0.0110	0.0150	7.80	10.60	30.0	±20%	0.0440	0.0600	3.90	5.30
2MA129-100MF	10.0	±20%	0.0130	0.0180	7.60	10.50	40.0	±20%	0.0520	0.0720	3.80	5.25
2MA129-120MF	12.0	±20%	0.0150	0.0190	7.10	8.80	48.0	±20%	0.0600	0.0760	3.55	4.40
2MA129-150MF	15.0	±20%	0.0210	0.0260	6.00	8.00	60.0	±20%	0.0840	0.1040	3.00	4.00
2MA129-220MF	22.0	±20%	0.0230	0.0280	5.30	6.50	88.0	±20%	0.0920	0.1120	2.65	3.25
2MA129-270MF	27.0	±20%	0.0300	0.0400	4.60	5.80	108	±20%	0.1200	0.1600	2.30	2.90
2MA129-330MF	33.0	±20%	0.0370	0.0450	4.20	5.50	132	±20%	0.1480	0.1800	2.10	2.75
2MA129-390MF	39.0	±20%	0.0440	0.0560	4.10	5.00	156	±20%	0.1760	0.2240	2.05	2.50
2MA129-470MF	47.0	±20%	0.0460	0.0630	3.80	4.50	188	±20%	0.1840	0.2520	1.90	2.25
2MA129-560MF	56.0	±20%	0.0540	0.0680	3.40	3.70	224	±20%	0.2160	0.2720	1.70	1.85
2MA129-680MF	68.0	±20%	0.0690	0.0890	3.20	3.60	272	±20%	0.2760	0.3560	1.60	1.80
2MA129-820MF	82.0	±20%	0.0905	0.1050	2.70	3.40	328	±20%	0.3620	0.4200	1.35	1.70
2MA129-101MF	100	±20%	0.100	0.110	2.50	3.10	400	±20%	0.4000	0.4400	1.25	1.55
2MA129-121MF	120	±20%	0.130	0.156	2.30	2.60	480	±20%	0.5200	0.6240	1.15	1.30
2MA129-151MF	150	±20%	0.139	0.174	2.30	2.40	600	±20%	0.5560	0.6960	1.15	1.20
2MA129-181MF	180	±20%	0.153	0.191	2.20	2.30	720	±20%	0.6120	0.7640	1.10	1.15
2MA129-221MF	220	±20%	0.193	0.300	1.90	2.20	880	±20%	0.7720	1.2000	0.95	1.10
2MA129-271MF	270	±20%	0.248	0.330	1.70	2.10	1080	±20%	0.9920	1.3200	0.85	1.05

Part Number	Parallel Mode						Series Mode					
	L ¹ (μH)	Tolerance	DCR ² Typ.(Ω)	DCR ² Max.(Ω)	I _{rms} ³ (A)	Isat ⁴ (A)	L ¹ (μH)	Tolerance	DCR ² Typ.(Ω)	DCR ² Max.(Ω)	I _{rms} ³ (A)	Isat ⁴ (A)
2MA129-331MF	330	±20%	0.363	0.430	1.50	1.70	1320	±20%	1.452	1.720	0.75	0.85
2MA129-471MF	470	±20%	0.437	0.560	1.40	1.50	1880	±20%	1.748	2.240	0.70	0.75
2MA129-561MF	560	±20%	0.520	0.650	1.20	1.40	2240	±20%	2.080	2.600	0.60	0.70
2MA129-681MF	680	±20%	0.660	0.825	1.10	1.30	2720	±20%	2.640	3.300	0.55	0.65
2MA129-821MF	820	±20%	0.815	1.000	1.00	1.10	3280	±20%	3.260	4.000	0.50	0.55
2MA129-102MF	1000	±20%	0.930	1.200	0.88	1.00	4000	±20%	3.720	4.800	0.44	0.50

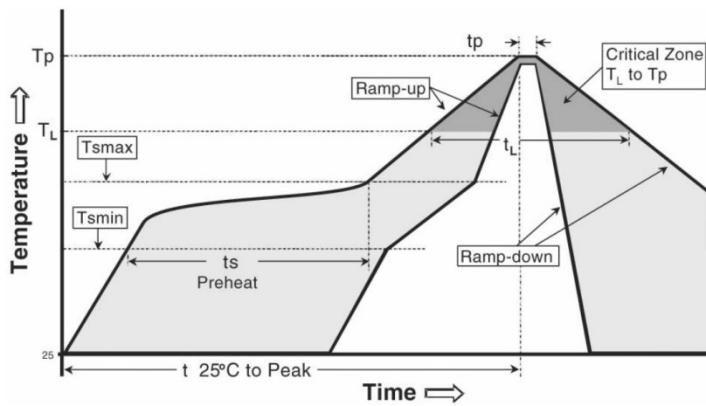
1. Inductance measured @ 100KHz, 0.3V at 25°C temperature.
2. DCR measured @ 25°C.
3. I_{rms} for an approximate 40°C rise from 20°C ambient temperature.
4. Isat for approximate 10% roll off at 25°C.
5. Available for custom designs on request
6. Specifications subject to change without notice please 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 ₀	P ₁	H	T
2MA74	1000	330	100	13	22.5	16.5	16	12	4	2	4.7	0.4
2MA125	500	330	100	13	30	24.5	24	16	4	2	6.2	0.45
2MA127	500	330	100	13	30	24.5	24	16	4	2	8.2	0.45
2MA129	350	330	100	13	30	24.5	24	16	4	2	10.2	0.45

F RECOMMENDED SOLDER REFLOW PROFILE



Profile Feature	Recommended Conditions
Average ramp-up rate (T _{smax} to T _p)	3°C/second max.
Preheat	
Temperature Min (T _{smin})	150°C
Temperature Max (T _{smax})	200°C
Time (T _{smin} to T _{smax})(t _s)	60-180 seconds
Time maintained above:	
Temperature (T _l)	217°C
Time (t _l)	60-150 seconds
Peak Temperature (T _p)	See Table2
Time within 5°C of actual Peak Temperature (t _p) ²	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 ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >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.