

MS

MS Series SMD Power Inductor

Operation Temperature

-40 85

Feature

\*

High saturation current

\*

Magnetic shielded

\*

Suitable for surface mounting

Application



MS73-3R3NT	3.30	±30%	1KHz	0.038	2.00
MS73-4R7NT	4.70	±30%	1KHz	0.040	1.82
MS73-5R6NT	5.60	±30%	1KHz	0.057	1.82
MS73-6R8NT	6.80	±30%	1KHz	0.058	1.70
MS73-100MT	10	±20%	1KHz	0.072	1.68
MS73-120MT	12	±20%	1KHz	0.098	1.52
MS73-150MT	15	±20%	1KHz	0.130	1.33
MS73-180MT	18	±20%	1KHz	0.140	1.20
MS73-220MT	22	±20%	1KHz	0.190	1.07
MS73-330MT	33	±20%	1KHz	0.240	0.91
MS73-390MT	39	±20%	1KHz	0.320	0.77
MS73-470MT	47	±20%	1KHz	0.360	0.76
MS73-560MT	56	±20%	1KHz	0.470	0.68
MS73-680MT	68	±20%	1KHz	0.520	0.61
MS73-820MT	82	±20%	1KHz	0.690	0.57
MS73-101MT	100	±20%	1KHz	0.790	0.50
MS73-121MT	120	±20%	1KHz	0.890	0.49
MS73-151MT	150	±20%	1KHz	1.270	0.43
MS73-181MT	180	±20%	1KHz	1.450	0.39
MS73-221MT	220	±20%	1KHz	1.650	0.35
MS73-271MT	270	±20%	1KHz	2.310	0.32
MS73-331MT	330	±20%	1KHz	2.620	0.28
MS73-391MT	390	±20%	1KHz	2.940	0.26
MS73-471MT	470	±20%	1KHz	4.180	0.24
MS73-561MT	560	±20%	1KHz	4.670	0.22
MS73-681MT	680	±20%	1KHz	5.730	0.19
MS73-821MT	820	±20%	1KHz	6.540	0.18
MS73-102MT	1000	±20%	1KHz	9.440	0.16

\* MS74 Type

Part No.	Inductance (μH)	Tolerance	Test Freq.	Direct Current Resistance DCR(Ω)Max	Rated DC Current IDC (A)
MS74-1R0NT	1.0	±30%	1KHz	0.022	6.00
MS74-1R5NT	1.5	±30%	1KHz	0.028	3.20
MS74-2R2NT	2.2	±30%	1KHz	0.030	3.00
MS74-3R3NT	3.3	±30%	1KHz	0.035	2.80
MS74-4R7NT	4.7	±30%	1KHz	0.040	2.50
MS74-6R8NT	6.8	±30%	1KHz	0.050	2.10
MS74-8R2NT	8.2	±30%	1KHz	0.060	2.00
MS74-100MT	10	±20%	1KHz	0.055	1.84
MS74-120MT	12	±20%	1KHz	0.058	1.71
MS74-150MT	15	±20%	1KHz	0.081	1.47
MS74-180MT	18	±20%	1KHz	0.091	1.31

MS74-220MT	22	±20%	1KHz	0.110	1.23
MS74-270MT	27	±20%	1KHz	0.150	1.10
MS74-330MT	33	±20%	1KHz	0.170	0.96
MS74-390MT	39	±20%	1KHz	0.230	0.91
MS74-470MT	47	±20%	1KHz	0.260	0.88
MS74-560MT	56	±20%	1KHz	0.350	0.75
MS74-680MT	68	±20%	1KHz	0.380	0.69
MS74-820MT	82	±20%	1KHz	0.430	0.61
MS74-101MT	100	±20%	1KHz	0.610	0.60
MS74-121MT	120	±20%	1KHz	0.660	0.52
MS74-151MT	150	±20%	1KHz	0.880	0.46
MS74-181MT	180	±20%	1KHz	0.980	0.42
MS74-221MT	220	±20%	1KHz	1.170	0.36
MS74-271MT	270	±20%	1KHz	1.640	0.34
MS74-331MT	330	±20%	1KHz	1.860	0.32
MS74-391MT	390	±20%	1KHz	2.850	0.29
MS74-471MT	470	±20%	1KHz	3.010	0.26
MS74-561MT	560	±20%	1KHz	3.620	0.23
MS74-681MT	680	±20%	1KHz	4.630	0.22
MS74-821MT	820	±20%	1KHz	5.200	0.20
MS74-102MT	1000	±20%	1KHz	6.000	0.18
MS74-152MT	1500	±20%	1KHz	8.800	0.16
MS74-182MT	1800	±20%	1KHz	10.000	0.15

\* MS124 Type

Part No.	Inductance (μH)	Tolerance	Test Freq.	Direct Current Resistance DCR(Ω)Max	Rated DC Current IDC (A)
MS124-1R0NT	1.0	±30%	100KHz	0.008	12.00
MS124-1R6NT	1.6	±30%	100KHz	0.009	8.00
MS124-2R2NT	2.2	±30%	100KHz	0.014	7.50
MS124-3R3NT	3.3	±30%	100KHz	0.015	6.80
MS124-3R9NT	3.9	±30%	100KHz	0.018	6.50
MS124-4R7NT	4.7	±30%	100KHz	0.022	5.70
MS124-6R8NT	6.8	±30%	100KHz	0.028	4.90
MS124-100MT	10	±20%	100KHz	0.035	4.50
MS124-120MT	12	±20%	100KHz	0.038	4.00
MS124-150MT	15	±20%	100KHz	0.050	3.20
MS124-180MT	18	±20%	100KHz	0.057	3.10
MS124-220MT	22	±20%	100KHz	0.066	2.90
MS124-270MT	27	±20%	100KHz	0.080	2.80
MS124-330MT	33	±20%	100KHz	0.097	2.70
MS124-390MT	39	±20%	100KHz	0.132	2.10
MS124-470MT	47	±20%	100KHz	0.150	1.90

MS124-560MT	56	±20%	100KHz	0.190	1.80
MS124-680MT	68	±20%	100KHz	0.220	1.50
MS124-820MT	82	±20%	100KHz	0.260	1.30
MS124-101MT	100	±20%	100KHz	0.308	1.20
MS124-121MT	120	±20%	100KHz	0.380	1.10
MS124-151MT	150	±20%	100KHz	0.530	0.95
MS124-181MT	180	±20%	100KHz	0.620	0.85
MS124-221MT	220	±20%	100KHz	0.700	0.80
MS124-271MT	270	±20%	100KHz	0.876	0.60
MS124-331MT	330	±20%	100KHz	0.990	0.50
MS124-471MT	470	±20%	100KHz	1.300	0.40
MS124-152MT	1500	±20%	100KHz	4.000	0.29

\* MS125 Type

Part No.	Inductance (μH)	Tolerance	Test Freq.	Direct Current Resistance DCR(Ω)Max	Rated DC Current IDC (A)
MS125-1R3NT	1.3	±30%	7.96MHz	0.012	8.00
MS125-2R2NT	2.2	±30%	7.96MHz	0.014	7.00
MS125-3R1NT	3.1	±30%	7.96MHz	0.017	6.00
MS125-3R9NT	3.9	±30%	7.96MHz	0.018	5.50
MS125-4R7NT	4.7	±30%	7.96MHz	0.020	5.00
MS125-5R8NT	5.8	±30%	7.96MHz	0.021	4.40
MS125-6R8NT	6.8	±30%	7.96MHz	0.022	3.00
MS125-8R2NT	8.2	±30%	7.96MHz	0.025	4.00
MS125-100MT	10	±20%	1KHz	0.025	4.00
MS125-120MT	12	±20%	1KHz	0.027	3.50
MS125-150MT	15	±20%	1KHz	0.030	3.30
MS125-180MT	18	±20%	1KHz	0.034	3.00
MS125-220MT	22	±20%	1KHz	0.042	2.80
MS125-270MT	27	±20%	1KHz	0.051	2.30
MS125-330MT	33	±20%	1KHz	0.065	2.10
MS125-390MT	39	±20%	1KHz	0.068	2.00
MS125-470MT	47	±20%	1KHz	0.075	1.80
MS125-560MT	56	±20%	1KHz	0.110	1.70
MS125-680MT	68	±20%	1KHz	0.120	1.50
MS125-820MT	82	±20%	1KHz	0.140	1.40
MS125-101MT	100	±20%	1KHz	0.198	1.30
MS125-121MT	120	±20%	1KHz	0.220	1.10
MS125-151MT	150	±20%	1KHz	0.230	1.00
MS125-181MT	180	±20%	1KHz	0.290	0.90
MS125-221MT	220	±20%	1KHz	0.400	0.80
MS125-271MT	270	±20%	1KHz	0.460	0.75
MS125-331MT	330	±20%	1KHz	0.510	0.68

MS125-391MT	390	±20%	1KHz	0.690	0.65
MS125-471MT	470	±20%	1KHz	0.770	0.58
MS125-561MT	560	±20%	1KHz	0.860	0.54
MS125-681MT	680	±20%	1KHz	1.200	0.48
MS125-821MT	820	±20%	1KHz	1.340	0.43
MS125-102MT	1000	±20%	1KHz	1.900	0.40
MS125-472MT	4700	±20%	1KHz	8.280	0.30
MS125-802MT	8000	±20%	1KHz	15.000	0.22
MS125-103MT	10000	±20%	1KHz	20.000	0.12

\* MS127 Type

Part No.	Inductance (μH)	Tolerance	Test Freq.	Direct Current Resistance DCR(Ω)Max	Rated DC Current IDC (A)
MS127-1R0NT	1.0	±30%	100KHz	0.0070	9.80
MS127-1R5NT	1.5	±30%	100KHz	0.0100	9.00
MS127-2R2NT	2.2	±30%	100KHz	0.0115	7.50
MS127-3R3NT	3.3	±30%	100KHz	0.0135	7.50
MS127-4R7NT	4.7	±30%	100KHz	0.0158	6.80
MS127-5R6NT	5.6	±30%	100KHz	0.0176	6.70
MS127-6R8NT	6.8	±30%	100KHz	0.0200	6.60
MS127-8R2NT	8.2	±30%	100KHz	0.0200	5.90
MS127-100MT	10	±20%	1KHz	0.0216	5.40
MS127-120MT	12	±20%	1KHz	0.0243	4.90
MS127-150MT	15	±20%	1KHz	0.0270	4.50
MS127-180MT	18	±20%	1KHz	0.0392	3.90
MS127-220MT	22	±20%	1KHz	0.0432	3.60
MS127-270MT	27	±20%	1KHz	0.0459	3.40
MS127-330MT	33	±20%	1KHz	0.0648	3.00
MS127-390MT	39	±20%	1KHz	0.0729	2.75
MS127-470MT	47	±20%	1KHz	0.1000	2.50
MS127-560MT	56	±20%	1KHz	0.1100	2.35
MS127-680MT	68	±20%	1KHz	0.1400	2.10
MS127-820MT	82	±20%	1KHz	0.1600	1.95
MS127-101MT	100	±20%	1KHz	0.2200	1.70
MS127-121MT	120	±20%	1KHz	0.2500	1.60
MS127-151MT	150	±20%	1KHz	0.2800	1.42
MS127-181MT	180	±20%	1KHz	0.3500	1.30
MS127-221MT	220	±20%	1KHz	0.3900	1.16
MS127-271MT	270	±20%	1KHz	0.5600	1.06
MS127-331MT	330	±20%	1KHz	0.6400	0.95
MS127-391MT	390	±20%	1KHz	0.7000	0.88
MS127-471MT	470	±20%	1KHz	0.9800	0.79
MS127-561MT	560	±20%	1KHz	1.0700	0.73

MS127-681MT	680	±20%	1KHz	1.4600	0.67
MS127-821MT	820	±20%	1KHz	1.6400	0.60
MS127-102MT	1000	±20%	1KHz	1.8200	0.55
MS127-152MT	1500	±20%	1KHz	2.4000	0.50
MS127-182MT	1800	±20%	1KHz	2.8000	0.40
MS127-222MT	2200	±20%	1KHz	2.9500	0.30

\* MS129 Type

Part No.	Inductance (μH)	Tolerance	Test Freq.	Direct Current Resistance DCR(Ω)Max	Rated DC Current IDC (A)
MS129-1R0NT	1.0	±30%	100KHz	0.006	19.90
MS129-1R5NT	1.5	±30%	100KHz	0.007	13.40
MS129-2R2NT	2.2	±30%	100KHz	0.008	12.16
MS129-3R3NT	3.3	±30%	100KHz	0.010	12.00
MS129-4R7NT	4.7	±30%	100KHz	0.011	10.08
MS129-5R6NT	5.6	±30%	100KHz	0.013	9.30
MS129-6R8NT	6.8	±30%	100KHz	0.014	8.56
MS129-8R2NT	8.2	±30%	100KHz	0.017	8.48
MS129-100MT	10	±20%	100KHz	0.018	7.12
MS129-120MT	12	±20%	100KHz	0.023	7.04
MS129-150MT	15	±20%	100KHz	0.028	5.84
MS129-220MT	22	±20%	100KHz	0.041	5.12
MS129-330MT	33	±20%	100KHz	0.068	4.25
MS129-390MT	39	±20%	100KHz	0.078	3.90
MS129-470MT	47	±20%	100KHz	0.080	3.60
MS129-560MT	56	±20%	100KHz	0.091	2.85
MS129-680MT	68	±20%	100KHz	0.098	2.76
MS129-820MT	82	±20%	100KHz	0.138	2.62
MS129-101MT	100	±20%	100KHz	0.140	2.50
MS129-121MT	120	±20%	100KHz	0.169	2.05
MS129-151MT	150	±20%	100KHz	0.245	1.80
MS129-181MT	180	±20%	100KHz	0.270	1.66
MS129-221MT	220	±20%	100KHz	0.306	1.64
MS129-331MT	330	±20%	100KHz	0.488	1.28
MS129-471MT	470	±20%	100KHz	0.599	1.06
MS129-561MT	560	±20%	100KHz	0.887	1.01
MS129-681MT	680	±20%	100KHz	1.003	0.83
MS129-821MT	820	±20%	100KHz	1.108	0.81
MS129-102MT	1000	±20%	100KHz	1.880	0.70

0.5V

Remarks: The test voltage is 0.5V.

IDC

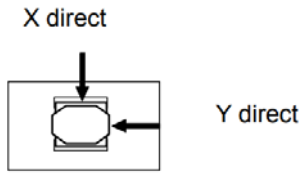
10%

40

20

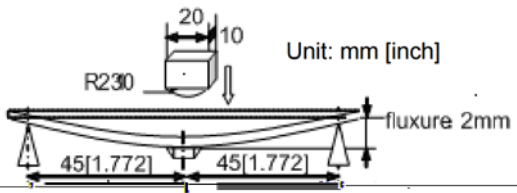
IDC The DC current at which cause a 10% inductance reduction from the initial value or inductor surface temperature to rise by 40 , whichever is smaller. ( Reference ambient temperature 20 ).

**Reliability Test Method**

No.	Items	Requirements	Test Methods and Remarks
1	Insulation Resistance	100M	100 V 60s 100 V DC between inductor coil and core for 60 seconds.
2	Solderability	95% 95% or more of electrode area shall be coated by new solder.	245±5 96.5Sn/3.0Ag/0.5Cu 5±1s Dip pads in flux and dip in solder pot (96.5Sn/3.0Ag/0.5Cu) at 245±5 for (5±1) seconds.
3	Resistance to Soldering Heat	±10% No visible mechanical damage. Inductance change: Within ±10%	260±5 96.5Sn/3.0Ag/0.5Cu 10±1s Dip pads in flux and dip in solder pot (96.5Sn/3.0Ag/0.5Cu) at 260±5 for (10±1) seconds.
4	Terminal Strength	No looseness of shedding of terminals.	10N 10±1s The inductor is welded to the test plate with solder, and then applied 10 N force in the direction of arrow and kept for 10 ± 1s. 
5	High Temperature	± 10% No visible mechanical damage. Inductance change: Within ±10%	+85± 2 , 1000 <sup>+2</sup> <sub>0</sub> h 2 48 Temperature 85±2 , time 1000 <sup>+2</sup> <sub>0</sub> h, test within 48 hours after 2 hours of placement at room temperature.
6	Low Temperature	± 10% No visible mechanical damage. Inductance change: Within ±10%	-40± 2 1000 <sup>+2</sup> <sub>0</sub> h 2 48 Temperature -40 ± 2 , time 1000 <sup>+2</sup> <sub>0</sub> h, test within 48 hours after 2 hours of placement at room temperature.
7	Thermal Shock	±10% No visible mechanical damage. Inductance change: Within ±10%	(-40±3 , (30±3) min ↔ (85±2) / (30±3) min (2~3) min, 32 2 48 The test sample shall be placed at (-40±3) and (85±2) for (30±3) min, different temperature conversion time is 2~3 minutes. The temperature cycle shall be repeated 32 cycles. Test within 48 hours after 2 hours of placement at room temperature.
8	Temperature Characteristic	$P_{c-b}, P_{c-d}$ ±20% Inductance change $P_{c-b}, P_{c-d}$ . Within ±20%	40 85 20 Based on the inductance at 20 and Measured at the ambient of 40 85 .
9	Constant Damp Heat	±10% No visible mechanical damage. Inductance change: Within ±10%	(90~95)%RH, 60±2 1000 <sup>+2</sup> <sub>0</sub> H 2 48 The inductors were stored for 1000 + 240 h at humidity (90~95)%RH, temperature 60±2 , and tested within 48h after 2H at room temperature.



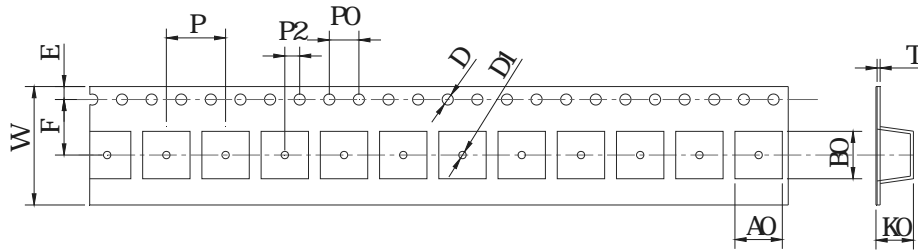
Continue the above table

No.	Items	Requirements	Test Methods and Remarks
10	Vibration	$\pm 10\%$ No visible mechanical damage. Inductance change: Within $\pm 10\%$	10Hz 55Hz 1.5mm 196m/s <sup>2</sup> 1min 10Hz→55Hz→10Hz X/Y/Z 2H 6H The inductor is welded to the test plate with solder and the test plate is fixed to the vibration test fixture so that it is rigidly connected with the vibration table. The test shall be conducted according to the following conditions: Vibration frequency range: 10Hz~55Hz Amplitude: 1.5mm (Acceleration 196m/s <sup>2</sup> ) One cycle time: 1min (10Hz → 55Hz → 10Hz) Vibration time: 2 hours for X/Y/Z axis ( Total of 6 hours)
11	Resistance to Flexure	No visible mechanical damage.	2mm 0.5mm/s 30±1s 1.0mm The inductor is welded to the test plate with solder, and then apply a vertical force (as shown in the figure). The test shall be conducted according to the following conditions: Curvature: 2mm Pressurization speed: 0.5mm/s Holding time: 30 ± 1s Thickness of test plate: 1.0mm 
12	High-temperature Load (Life-span)	$\pm 10\%$ No visible mechanical damage. Inductance change: Within $\pm 10\%$	85 ±2 1000 <sup>±2</sup> h, 2 48 Temperature 85 ± 2 , Time 1000 <sup>±2</sup> h apply a rated current, test within 48 hours after 2 hours of placement at room temperature. 125 125 Note: If the surface temperature of the part over 125 when the current is loaded, the current need to reduce until the surface temperature of the part less than 125 .

Packaging

\*

Tape Dimension

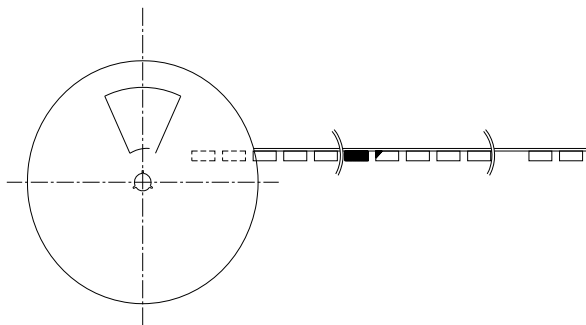


(Unit) mm

Part	W	A0	B0	D	D1	E	F	K0	P0	P2	P	T
MS73	16±0.5	7.6±0.3	7.6±0.3	1.5±0.3	1.5±0.3	1.75±0.3	7.5±0.3	3.9±0.3	4±0.3	2±0.3	12±0.3	0.35±0.1
MS74	16±0.5	7.6±0.3	7.6±0.3	1.5±0.3	1.5±0.3	1.75±0.3	7.5±0.3	5.0±0.3	4±0.3	2±0.3	12±0.3	0.35±0.1
MS124	24±0.5	12.6±0.3	12.6±0.3	1.5±0.3	1.5±0.3	1.75±0.3	11.5±0.3	5.1±0.3	4±0.3	2±0.3	16±0.3	0.375±0.1
MS125	24±0.5	12.7±0.3	12.65±0.3	1.5±0.3	1.5±0.3	1.75±0.3	11.5±0.3	6.25±0.3	4±0.3	2±0.3	16±0.3	0.375±0.1
MS127	24±0.5	12.7±0.3	12.65±0.3	1.5±0.3	1.5±0.3	1.75±0.3	11.5±0.3	8.25±0.3	4±0.3	2±0.3	16±0.3	0.40±0.10
MS129	24±0.5	12.7±0.3	12.65±0.3	1.5±0.3	1.5±0.3	1.75±0.3	11.5±0.3	10±0.3	4±0.3	2±0.3	16±0.3	0.40±0.10

\*

Reel Size & Direction Of Feed



\*

Packing quantity

Part	Reel(PCS)	Box(PCS)	Carton PCS
MS73	1,500	6,000	18,000
MS74	1,000	4,000	12,000
MS124	750	2,250	4,500
MS125	500	1,500	3,000
MS127	500	1,000	2,000
MS129	300	600	1,200

Recommended soldering profile

\*

Applicable soldering process to the products is reflow soldering.

\*

Sn-3.0Ag-0.5Cu

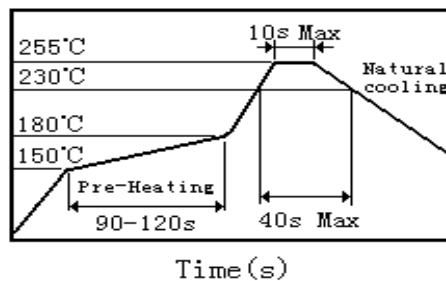
Solder Sn-3.0Ag-0.5Cu

0.2wt%

Flux: Use rosin-based flux, but not strongly acidic flux (with chlorine exceeding 0.2 wt%). Do not use water-soluble flux.

\*

Soldering Profile



Storage Requirements

\*

6

6

Storage Period: In order to ensure that the welding characteristics and packaging materials of the inductor are in good condition, please use this product within 6 months after the company ships it. At the same time, because the welding characteristics of the inductor will change with time, if the storage time exceeds 6 months, please confirm its welding characteristics before use.

\*

-10 to +40

-40 to +85

30~70%RH

Storage Conditions

Temperature: -10 to +40 (Inductors With Taping); -40 to +85 (Inductors Body)

Humidity 30~70%RH