



Wire Wound SMD Power Inductors

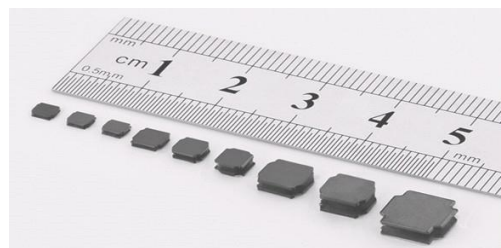
NR Series

Features

- Magnetic-resin shielded construction reduces buzz noise to ultra-low levels
- Metallization on ferrite core results in excellent shock resistance and damage-free durability
- Closed magnetic circuit design reduces leakage flux and Electro Magnetic Interference (EMI)
- 30% higher current rating than conventional inductors of equal size
- Takes up less PCB real estate and save more power

Applications

- LED Lighting



- Next-generation mobile devices with multifunction such as mobile TV and digital movie cameras
- Flat-screen TVs, blue-ray disc recorders, set top box
- Notebooks, desktop computers, servers, graphic cards cards
- Portable gaming devices, personal navigation systems, personal multimedia devices
- Automotive systems
- Telecom base stations

Environmental Data

- Operating temperature range: -40°C to +125°C (ambient plus self-temperature rise)

Description			
NR3015-150M	15.0μH	±20 % (±30 %)	
Model	Inductance Value	Inductance Tolerance	
Global Part Number			
N R	3 0 1 5	1 5 0	M(N)
Product Series	Dimensions	Inductance Value	Tol. ±20% (±30%)



NR252012 Series

Part No.	Inductance	DC Resistance	Min. self-resonant Frequency	Saturation Current	Heating Rating Current
	L(μH) @1MHz, 0.25V	DCR (mΩ) (±30 %)	S.R.F.(MHz)	Isat (A)	Idc (A)
NR252012-R33N	0.33±30%	40	170	4.3	2.67
NR252012-R68N	0.68±30%	73	140	2.7	1.95
NR252012-1R0N	1.0±30%	85	110	2.68	1.93
NR252012-1R5N	1.5±30%	113	97	2.24	1.4
NR252012-2R2N	2.2±30%	165	69	1.85	1.25
NR252012-3R3M	3.3±20%	200	62	1.61	1.04
NR252012-4R7M	4.7±20%	315	47	1.18	0.84
NR252012-5R6M	5.6±20%	330	38	1.1	0.73
NR252012-6R8M	6.8±20%	447	38	0.98	0.69
NR252012-8R2M	8.2±20%	506	36	0.98	0.65
NR252012-100M	10±20%	575	34	0.88	0.62
NR252012-150M	15±20%	900	25	0.62	0.42

NR3015 Series

Part No.	Inductance	DC Resistance	Min. self-resonant Frequency	Saturation Current	Heating Rating Current
	L(μH) @100 kHz, 1V	DCR (Ω) (±30 %)	S.R.F.(MHz)	Isat (A)	Idc (A)
NR3015-1R0N	1.0±30%	0.032	150	2.32	2.23
NR3015-1R5N	1.5±30%	0.053	100	2.3	1.62
NR3015-2R2N	2.2±30%	0.063	86	1.6	1.52
NR3015-3R3N	3.3±30%	0.084	68	1.32	1.29
NR3015-4R7N	4.7±30%	0.131	46	1.1	1.04
NR3015-6R8M	6.8±20%	0.210	39	0.85	0.81
NR3015-100M	10±20%	0.263	41	0.72	0.73
NR3015-150M	15±20%	0.368	30	0.66	0.62
NR3015-220M	22±20%	0.483	23	0.52	0.54
NR3015-270M	27±20%	0.767	22	0.48	0.43
NR3015-330M	33±20%	0.861	20	0.44	0.41
NR3015-470M	47±20%	1.313	14	0.35	0.33
NR3015-680M	68±20%	2.853	5.2	0.28	0.23
NR3015-101M	100±20%	3.287	2.0	0.23	0.21



NR4018 Series

Part No.	Inductance	DC Resistance	Min. self-resonant Frequency	Saturation Current	Heating Rating Current
	L(μH) @100 kHz, 1V	DCR (Ω) (±30 %)	S.R.F.(MHz)	Isat (A)	Idc (A)
NR4018-1R0N	1.0±30%	0.026	80	4.80	1.90
NR4018-1R5N	1.5±30%	0.032	65	3.35	1.71
NR4018-2R2N	2.2±30%	0.047	52	2.70	1.57
NR4018-3R3N	3.3±30%	0.074	44	2.45	1.17
NR4018-4R7N	4.7±30%	0.095	34	1.70	1.14
NR4018-6R8N	6.8±30%	0.116	29	1.45	1.01
NR4018-100M	10±20%	0.189	24	1.30	0.80
NR4018-220M	22±20%	0.378	16	0.80	0.56
NR4018-470M	47±20%	0.683	10	0.57	0.40
NR4018-680M	68±20%	1.050	8.3	0.47	0.30
NR4018-101M	100±20%	1.838	6.5	0.40	0.24

NR4030 Series

Part No.	Inductance	DC Resistance	Min. self-resonant Frequency	Saturation Current	Heating Rating Current
	L(μH) @100 kHz, 1V	DCR (Ω) (±30 %)	S.R.F.(MHz)	Isat (A)	Idc (A)
NR4030-1R0N	1.0±30%	0.015	70	5.26	3.94
NR4030-1R5N	1.5±30%	0.021	62	4.84	3.17
NR4030-2R2N	2.2±30%	0.032	52	4.90	2.80
NR4030-3R3N	3.3±30%	0.042	38	3.30	2.28
NR4030-4R7N	4.7±30%	0.063	31	2.90	1.90
NR4030-6R8N	6.8±30%	0.095	24	2.75	1.52
NR4030-100M	10±20%	0.105	21	1.95	1.43
NR4030-150M	15±20%	0.200	16	1.65	1.05
NR4030-220M	22±20%	0.236	10	1.30	0.95
NR4030-330M	33±20%	0.347	10	1.10	0.80
NR4030-470M	47±20%	0.467	8.4	0.95	0.68
NR4030-101M	100±20%	1.208	5.6	0.60	0.43
NR4030-221M	220±20%	2.658	4.3	0.40	0.35
NR4030-331M	330±20%	3.987	3.0	0.30	0.25
NR4030-471M	470±20%	5.308	1.7	0.25	0.21



NR5020 Series

Part No.	Inductance	DC Resistance	Min. self-resonant Frequency	Saturation Current	Heating Rating Current
	L(μH) @100 kHz, 1V	DCR (Ω) (±30 %)	S.R.F.(MHz)	Isat (A)	Idc (A)
NR5020-1R0N	1.0±30%	0.021	114	4.10	3.61
NR5020-2R2N	2.2±30%	0.034	57	3.20	2.76
NR5020-3R3N	3.3±30%	0.045	46	2.55	2.38
NR5020-4R7M	4.7±20%	0.060	37	2.50	2.09
NR5020-6R8M	6.8±20%	0.087	30	2.05	1.71
NR5020-100M	10±20%	0.116	24	1.70	1.47
NR5020-150M	15±20%	0.173	20	1.35	1.19
NR5020-220M	22±20%	0.237	14	1.15	1.05
NR5020-330M	33±20%	0.410	10	0.92	0.86

NR5040 Series

Part No.	Inductance	DC Resistance	Min. self-resonant Frequency	Saturation Current	Heating Rating Current
	L(μH) @100 kHz, 1V	DCR (Ω) (±30 %)	S.R.F.(MHz)	Isat (A)	Idc (A)
NR5040-1R0N	1.0±30%	0.013	117	7.35	4.66
NR5040-2R2N	2.2±30%	0.020	50	4.90	3.61
NR5040-3R3N	3.3±30%	0.025	32	3.95	3.23
NR5040-4R7N	4.7±30%	0.032	28	3.50	2.85
NR5040-6R8M	6.8±20%	0.045	21	2.90	2.38
NR5040-100M	10±20%	0.067	18	2.35	2.00
NR5040-150M	15±20%	0.090	13	2.00	1.90
NR5040-220M	22±20%	0.135	11	1.60	1.43
NR5040-330M	33±20%	0.197	9.1	1.30	1.14
NR5040-470M	47±20%	0.286	6.7	1.10	0.95
NR5040-680M	68±20%	0.420	5.7	0.90	0.76
NR5040-101M	100±20%	0.588	4.7	0.75	0.67
NR5040-151M	150±20%	0.732	3.9	0.50	0.50
NR5040-181M	180±20%	1.120	3.7	0.50	0.45
NR5040-221M	220±20%	1.512	3.6	0.50	0.39
NR5040-331M	330±20%	3.024	2.9	0.38	0.28
NR5040-471M	470±20%	3.620	2.3	0.35	0.25



NR6028 Series

Part No.	Inductance	DC Resistance	Min. self-resonant Frequency	Saturation Current	Heating Rating Current
	L(μH) @100 kHz, 1V	DCR (Ω) (±30 %)	S.R.F.(MHz)	Isat (A)	Idc (A)
NR6028-1R0N	1.0±30%	0.011	70	5.75	4.94
NR6028-2R2N	2.2±30%	0.021	48	5.10	3.56
NR6028-3R3N	3.3±30%	0.026	41	4.15	3.31
NR6028-4R7N	4.7±30%	0.032	35	3.00	2.93
NR6028-6R8M	6.8±20%	0.049	27	2.60	2.28
NR6028-100M	10±20%	0.076	23	2.04	1.85
NR6028-150M	15±20%	0.131	18	1.75	1.38
NR6028-220M	22±20%	0.147	14	1.45	1.33
NR6028-330M	33±20%	0.194	12	1.35	1.16
NR6028-470M	47±20%	0.331	9.5	1.15	1.01
NR6028-680M	68±20%	0.378	7.7	0.80	0.82
NR6028-101M	100±20%	0.525	7.1	0.65	0.67

NR6045 Series

Part No.	Inductance	DC Resistance	Min. self-resonant Frequency	Saturation Current	Heating Rating Current
	L(μH) @100 kHz, 1V	DCR (Ω) (±30 %)	S.R.F.(MHz)	Isat (A)	Idc (A)
NR6045-1R0N	1.0±30%	0.011	100	9.85	4.88
NR6045-2R2N	2.2±30%	0.015	52	6.75	4.40
NR6045-3R3N	3.3±30%	0.022	32	5.90	3.52
NR6045-4R7N	4.7±30%	0.027	24.0	4.97	3.14
NR6045-6R8M	6.8±20%	0.033	20.0	3.90	2.85
NR6045-100M	10±20%	0.050	15.0	3.20	2.33
NR6045-150M	15±20%	0.071	12.0	2.50	1.95
NR6045-220M	22±20%	0.093	10.0	2.05	1.71
NR6045-330M	33±20%	0.144	7.8	1.65	1.38
NR6045-470M	47±20%	0.210	6.4	1.40	1.14
NR6045-680M	68±20%	0.303	6.4	1.20	0.95
NR6045-101M	100±20%	0.455	4.2	0.95	0.76
NR6045-221M	220±20%	0.876	3.5	0.70	0.56
NR6045-331M	330±20%	1.334	2.8	0.57	0.54



NR8040 Series

Part No.	Inductance	DC Resistance	Min. self-resonant Frequency	Saturation Current	Heating Rating Current
	L(μH) @100 kHz, 1V	DCR (Ω) (±30 %)	S.R.F.(MHz)	Isat (A)	Idc (A)
NR8040-3R3N	3.3±30%	0.018	27	6.50	4.18
NR8040-4R7N	4.7±30%	0.020	24	5.90	3.90
NR8040-6R8M	6.8±20%	0.025	20	4.55	3.42
NR8040-100M	10±20%	0.030	15	3.60	3.14
NR8040-150M	15±20%	0.049	12	2.95	2.47
NR8040-220M	22±20%	0.072	9.5	2.40	2.00
NR8040-330M	33±20%	0.102	7.8	2.05	1.71
NR8040-470M	47±20%	0.143	6.4	1.75	1.47
NR8040-680M	68±20%	0.206	4.9	1.45	1.19
NR8040-101M	100±20%	0.305	4.2	1.15	0.95
NR8040-151M	150±20%	0.431	3.5	1.10	0.81
NR8040-331M	330±20%	0.933	2.8	0.68	0.61

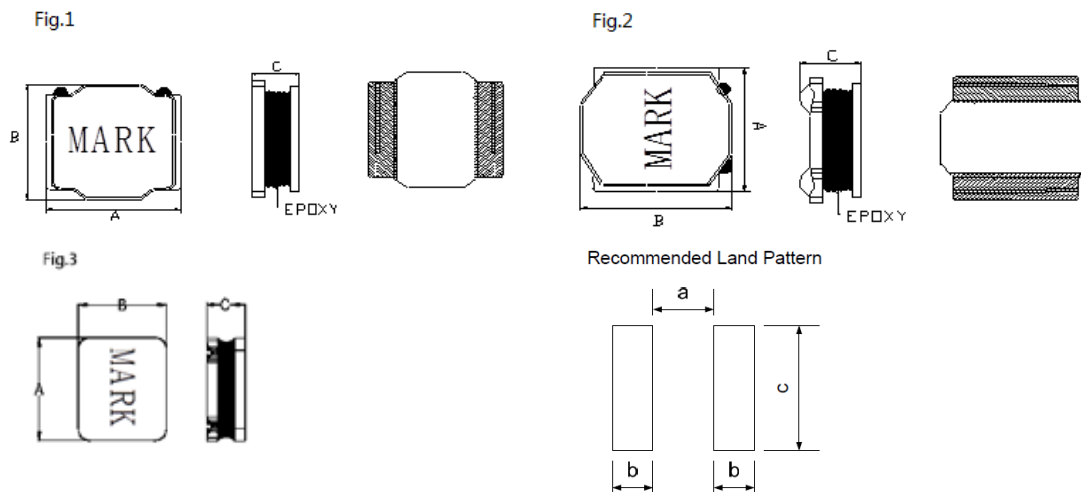
NR1050 Series

Part No.	Inductance	DC Resistance	Min. self-resonant Frequency	Saturation Current	Heating Rating Current
	L(μH) @100 kHz, 1V	DCR (Ω) (±30 %)	S.R.F.(MHz)	Isat (A)	Idc (A)
NR1050-3R3N	3.3±30%	0.027	23	11.6	8.10
NR1050-4R7N	4.7±30%	0.030	20	10.0	6.40
NR1050-100M	10±20%	0.048	12	7.20	5.01
NR1050-150M	15±20%	0.059	10	6.00	4.52
NR1050-220M	22±20%	0.085	8.1	4.30	3.77
NR1050-330M	33±20%	0.118	6.6	4.00	3.20
NR1050-470M	47±20%	0.163	5.4	3.30	2.73
NR1050-680M	68±20%	0.235	4.1	3.00	2.27
NR1050-101M	100±20%	0.338	3.5	2.50	1.89
NR1050-221M	220±20%	0.675	2.5	1.80	1.34
NR1050-331M	330±20%	0.885	2.0	1.40	1.16
NR1050-471M	470±20%	1.430	1.7	1.20	0.92
NR1050-681M	680±20%	1.980	1.5	1.00	0.78
NR1050-102M	1000±20%	3.420	1.1	0.80	0.59

Notes

1. All test data is referenced to 25 °C ambient
2. Operating temperature range - 40 °C to + 125 °C
3. I_{dc}(A):DC current (A) that will cause an approximate ΔT of 40 °C(reference ambient temperature is 25 °C)
4. I_{sat}(A):DC current (A) that will cause L₀ to drop approximately 30 %
5. The part temperature (ambient + temp rise) should not exceed 125 °C under worst case operating conditions. Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

Dimensions



Unit: mm

Series	Shape	A(Max.)	B(Max.)	C(Max.)	a Typ.	b Typ.	c Typ.
NR252012	Fig.3	2.7	2.35	1.2	0.8	1.0	2.0
NR3015	Fig.1	3.2	3.2	1.5	1.5	0.8	2.7
NR4018	Fig.2	4.2	4.2	2.0	1.9	1.1	3.7
NR4030	Fig.2	4.2	4.2	3.0	1.9	1.1	3.7
NR5020	Fig.1	5.2	5.2	2.0	2.3	1.4	4.2
NR5040	Fig.2	5.2	5.2	4.1	2.3	1.4	4.2
NR6028	Fig.1	6.3	6.3	3.0	2.8	1.7	5.7
NR6045	Fig.1	6.3	6.3	4.5	2.8	1.7	5.7
NR8040	Fig.1	8.3	8.3	4.2	3.8	2.2	7.5
NR1050	Fig.3	10.3	10.3	5.0	5.5	2.0	7.5

Packaging

Series	Tape Width	Reel Diameter	Quantity (pcs)
NR252012	8mm	180mm	2000
NR3015	8mm	180mm	2000
NR4018	12mm	330mm	3000
NR4030	12mm	330mm	2000
NR5020	12mm	330mm	3000
NR5040	12mm	330mm	1500
NR6028	12mm	330mm	2000
NR6045	12mm	330mm	1500
NR8040	16mm	330mm	1000
NR1050	24mm	330mm	800

Marking

The inductor is marked with a 3-digit code

Example - -15.0→150

Note : Using Ink for marking



Performance Graphs

Test Instruments

Wayne kerr 3260B/G LCR Meter

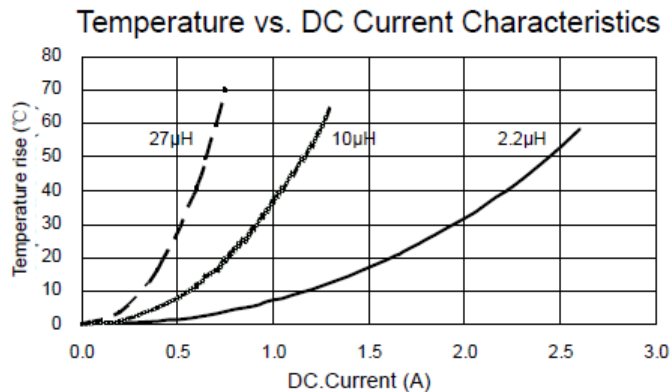
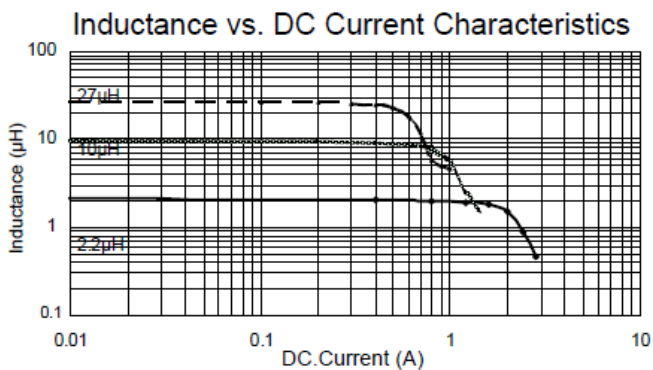
Wayne kerr 3265B Bias Current Source

Test Condition

Temperature: 25 ± 3°C

Humidity: < 70% RH

Frequency: 100 KHz, 1.0V



Solder Reflow Profile:

△ Preheat condition: 150 ~200°C/60~120sec.

△ Allowed time above 217°C: 60~90sec.

△ Max temp: 260°C

△ Max time at max temp: 10sec.

△ Solder paste: Sn/3.0Ag/0.5Cu

△ Allowed Reflow time: 2x max

[Note: The reflow profile in the above table is only for qualification and is not meant to specify board assembly profiles. Actual board assembly profiles must be based on the customer's specific board design, solder paste and process, and should not exceed the parameters as the Reflow profile shows.]

