SMD POWER INDUCTOR
- VRS SERIES -

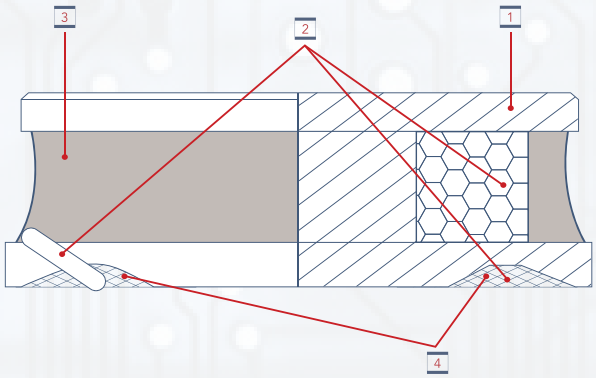
FEATURES

- Operating Temperature: -40°C ~ 125°C
- Ultra-thin design
- Magnetic shielding structure
- Suitable for surface mounting

APPLICATIONS

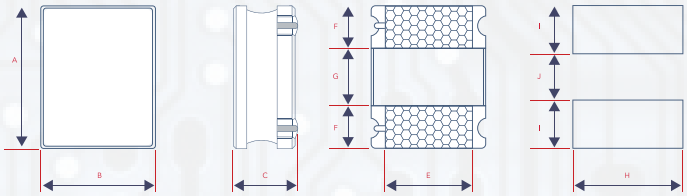
- Portable communication equipment, Notebook
- DC/DC Conversion
- DC Switching power supply circuit

CONSTRUCTION



NO.	COMPONENT	MATERIAL	
1	CORE	Ni - Zn Ferrite Core	
2	WINDING	Enameled Wire	
3	SHIELD	Magnetic Glue	
4	ELECTRODE	Bottom Layer	Ag
		Electroplated Coating	Ni
		Electroplated Coating	Sn
		Surface Layer	Sn/Cu

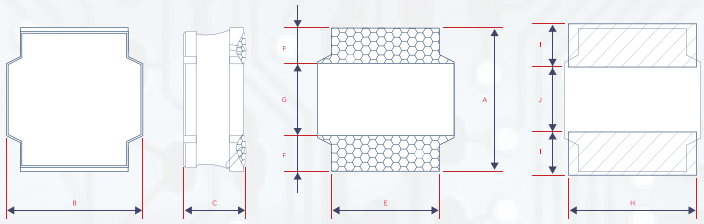
DIMENSIONS



UNIT: mm

PART	A	B	C	E (TYP.)	F (TYP.)	G (TYP.)	H (TYP.)	I (TYP.)	J (TYP.)
2512	2.5 ± 0.2	2.1 ± 0.2	1.25 MAX	1.6	0.85	0.80	2.1	0.85	0.80

NOTE: No marking on the top of inductors



UNIT: mm

PART	A	B	C (MAX)	E (TYP.)	F (TYP.)	G (TYP.)	H (TYP.)	I (TYP.)	J (TYP.)
3015	3.0±0.2	3.0±0.2	1.5	2.80	0.85	1.3	3.0	0.9	1.3
4018	4.0±0.2	4.0±0.2	1.8	2.6±0.3	1.2	1.6	3.6	1.4	1.6
4020	4.0±0.2	4.0±0.2	2.0	3.4	1.2	1.6	3.6	1.4	1.6
4026	4.0±0.2	4.0±0.2	2.6	3.4	1.2	1.6	3.6	1.4	1.6
4030	4.0±0.2	4.0±0.2	3.0	3.4	1.2	1.6	3.6	1.4	1.6
5020	5.0±0.2	5.0±0.2	2.1	4.0	1.2	2.1	4.4	1.6	2.4
5040	5.0±0.2	5.0±0.2	4.2	4.0	1.5	2.0	4.4	1.6	2.4
6020	6.0±0.2	6.0±0.2	2.0	5.0	1.5	3.0	5.7	1.9	2.6
6028	6.0±0.2	6.0±0.2	2.8	5.0	1.5	3.0	5.7	1.9	2.6
6045	6.0±0.2	6.0±0.2	4.5	5.0	1.5	3.0	5.7	1.9	2.6
8040	8.0±0.2	8.0±0.2	4.3	6.4	2.3	4.0	7.5	2.4	3.6

Note: 3015 printed on the top of the letter; other specifications printed on the top of the nominal value of inductance

PART NUMBERING

VRS	2512	1R0	M	T
SERIES	SIZE	INDUCTANCE	TOLERANCE	PACKAGING CODE
VRS Series SMD Power Inductor	2512 4018 4020 4026 4030 5020 5040 6020 6028 6045 8040	R10: 0.1 uH 1R0: 1.0 uH 100: 10 uH 101: 100 uH 102: 1000 uH	M: ±20% N: ±30%	T: Tape & Reel

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ELECTRICAL CHARACTERISTICS

- VRS 2512 TYPE

PART NO.	INDUCTANCE (µH)	TOLERANCE	TEST FREQUENCY	DIRECT CURRENT RESISTANCE DCR (Ω) MAX	SATURATION CURRENT (A)	IRMS TEMPERATURE RISE CURRENT (A)
VRS2512-R33NT	0.33	±30%	100KHz	0.049	4.00	3.35
VRS2512-R47NT	0.47	±30%	100KHz	0.061	3.82	2.15
VRS2512-R68NT	0.68	±30%	100KHz	0.074	3.28	1.96
VRS2512-1R0MT	1.0	±20%	100KHz	0.090	2.59	1.93
VRS2512-1R5MT	1.5	±20%	100KHz	0.147	2.24	1.40
VRS2512-2R2MT	2.2	±20%	100KHz	0.216	1.85	1.15
VRS2512-3R3MT	3.3	±20%	100KHz	0.264	1.61	1.04
VRS2512-4R7MT	4.7	±20%	100KHz	0.377	1.12	0.84
VRS2512-5R6MT	5.6	±20%	100KHz	0.538	1.11	0.73
VRS2512-6R8MT	6.8	±20%	100KHz	0.581	0.98	0.69
VRS2512-8R2MT	8.2	±20%	100KHz	0.658	0.98	0.65
VRS2512-100MT	10	±20%	100KHz	0.690	0.79	0.62

- VRS 3015 TYPE

PART NO.	INDUCTANCE (µH)	TOLERANCE	TEST FREQUENCY	DIRECT CURRENT RESISTANCE DCR (Ω) MAX	SATURATION CURRENT (A)	IRMS TEMPERATURE RISE CURRENT (A)
VRS3015-R22NT	0.22	±30%	100KHz	0.016 ± 30%	5.00	3.50
VRS3015-R47NT	0.47	±30%	100KHz	0.020 ± 30%	3.90	2.60
VRS3015-R68NT	0.68	±30%	100KHz	0.025 ± 30%	3.00	2.45
VRS3015-1R0MT	1.00	±20%	100KHz	0.030 ± 20%	2.32	2.35
VRS3015-1R5MT	1.50	±20%	100KHz	0.040 ± 20%	2.30	1.70
VRS3015-2R2MT	2.20	±20%	100KHz	0.060 ± 20%	1.60	1.60
VRS3015-2R7MT	2.70	±20%	100KHz	0.075 ± 20%	1.52	1.43
VRS3015-3R3MT	3.30	±20%	100KHz	0.080 ± 20%	1.32	1.36
VRS3015-4R7MT	4.70	±20%	100KHz	0.120 ± 20%	1.10	1.09
VRS3015-5R6MT	5.60	±20%	100KHz	0.140 ± 20%	0.95	0.86
VRS3015-6R2MT	6.20	±20%	100KHz	0.160 ± 20%	1.00	0.86
VRS3015-6R8MT	6.80	±20%	100KHz	0.160 ± 20%	0.87	0.85
VRS3015-8R2MT	8.20	±20%	100KHz	0.220 ± 20%	0.80	0.80
VRS3015-100MT	10.00	±20%	100KHz	0.230 ± 20%	0.72	0.77
VRS3015-150MT	15.00	±20%	100KHz	0.360 ± 20%	0.66	0.65
VRS3015-180MT	18.00	±20%	100KHz	0.430 ± 20%	0.56	0.59
VRS3015-220MT	22.00	±20%	100KHz	0.520 ± 20%	0.52	0.57
VRS3015-330MT	33.00	±20%	100KHz	0.840 ± 20%	0.44	0.43
VRS3015-390MT	39.00	±20%	100KHz	1.100 ± 20%	0.40	0.40
VRS3015-470MT	47.00	±20%	100KHz	1.340 ± 20%	0.35	0.35

- VRS 4018 TYPE

PART NO.	INDUCTANCE (µH)	TOLERANCE	TEST FREQUENCY	DIRECT CURRENT RESISTANCE DCR (Ω) MAX	SATURATION CURRENT (A)	IRMS TEMPERATURE RISE CURRENT (A)
VRS4018-R24NT	0.24	±30%	100KHz	0.014 ± 30%	9.00	5.00
VRS4018-R47NT	0.47	±30%	100KHz	0.021 ± 30%	6.50	4.00
VRS4018-R68NT	0.68	±30%	100KHz	0.020 ± 30%	4.90	3.30
VRS4018-1R0NT	1.0	±30%	100KHz	0.030 ± 30%	4.30	2.00
VRS4018-1R5 NT	1.50	±30%	100KHz	0.040 ± 30%	3.35	1.80

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ELECTRICAL CHARACTERISTICS

- VRS 4018 TYPE - CONT.

PART NO.	INDUCTANCE (µH)	TOLERANCE	TEST FREQUENCY	DIRECT CURRENT RESISTANCE DCR (Ω) MAX	SATURATION CURRENT (A)	IRMS TEMPERATURE RISE CURRENT (A)
VRS4018-2R2MT	2.20	±20%	100KHz	0.045 ± 30%	2.70	1.65
VRS4018-2R7 MT	2.70	±20%	100KHz	0.058 ± 30%	2.30	1.45
VRS4018-3R3 MT	3.30	±20%	100KHz	0.070 ± 30%	2.45	1.23
VRS4018-4R7 MT	4.70	±20%	100KHz	0.090 ± 30%	1.70	1.20
VRS4018-5R6 MT	5.60	±20%	100KHz	0.107 ± 30%	1.60	1.50
VRS4018-6R8 MT	6.80	±20%	100KHz	0.110 ± 30%	1.45	1.06
VRS4018-8R2 MT	8.20	±20%	100KHz	0.160 ± 30%	1.35	0.90
VRS4018-100 MT	10.00	±20%	100KHz	0.180 ± 30%	1.30	0.84
VRS4018-120 MT	12.00	±20%	100KHz	0.190 ± 30%	1.10	1.00
VRS4018-150 MT	15.00	±20%	100KHz	0.250 ± 30%	0.94	0.65
VRS4018-220 MT	22.00	±20%	100KHz	0.360 ± 30%	0.80	0.59
VRS4018-330 MT	33.00	±20%	100KHz	0.530 ± 30%	0.65	0.49
VRS4018-390 MT	39.00	±20%	100KHz	0.670 ± 30%	0.60	0.45
VRS4018-470 MT	47.00	±20%	100KHz	0.650 ± 30%	0.57	0.42
VRS4018-560 MT	56.00	±20%	100KHz	0.900 ± 30%	0.51	0.38
VRS4018-680 MT	68.00	±20%	100KHz	1.000 ± 30%	0.47	0.32
VRS4018-820 MT	81.00	±20%	100KHz	1.300 ± 30%	0.43	0.28
VRS4018-101 MT	100.00	±20%	100KHz	1.500 ± 30%	0.40	0.25

- VRS 4020 TYPE

PART NO.	INDUCTANCE (µH)	TOLERANCE	TEST FREQUENCY	DIRECT CURRENT RESISTANCE DCR (Ω) MAX	SATURATION CURRENT (A)	IRMS TEMPERATURE RISE CURRENT (A)
VRS4020-1R0MT	1.0	±20%	100KHz	0.029 ± 30%	4.78	2.15
VRS4020-1R5MT	1.5	±20%	100KHz	0.035 ± 30%	4.45	1.98
VRS4020-2R2MT	2.2	±20%	100KHz	0.040 ± 30%	3.40	1.85
VRS4020-3R3MT	3.3	±20%	100KHz	0.070 ± 30%	3.20	1.40
VRS4020-4R7MT	4.7	±20%	100KHz	0.075 ± 30%	2.35	1.34
VRS4020-5R1MT	5.1	±20%	100KHz	0.085 ± 30%	2.30	1.27
VRS4020-5R6MT	5.6	±20%	100KHz	0.090 ± 30%	2.20	1.22
VRS4020-6R8MT	6.8	±20%	100KHz	0.125 ± 30%	2.20	1.04
VRS4020-8R2MT	8.2	±20%	100KHz	0.155 ± 30%	1.75	1.04
VRS4020-100MT	10.0	±20%	100KHz	0.165 ± 30%	1.60	0.90
VRS4020-150MT	15.0	±20%	100KHz	0.230 ± 30%	1.35	0.77
VRS4020-220MT	22.0	±20%	100KHz	0.350 ± 30%	1.05	0.62
VRS4020-270MT	27.0	±20%	100KHz	0.545 ± 30%	1.02	0.50
VRS4020-330MT	33.0	±20%	100KHz	0.550 ± 30%	0.85	0.49
VRS4020-390MT	39.0	±20%	100KHz	0.650 ± 30%	0.82	0.46
VRS4020-470MT	47.0	±20%	100KHz	0.710 ± 30%	0.74	0.44
VRS4020-560MT	56.0	±20%	100KHz	0.800 ± 30%	0.66	0.41
VRS4020-680MT	68.0	±20%	100KHz	1.060 ± 30%	0.61	0.36
VRS4020-820MT	82.0	±20%	100KHz	1.170 ± 30%	0.50	0.34
VRS4020-101MT	100.0	±20%	100KHz	1.550 ± 30%	0.48	0.31

ELECTRICAL CHARACTERISTICS

- VRS 4026 TYPE

PART NO.	INDUCTANCE (µH)	TOLERANCE	TEST FREQUENCY	DIRECT CURRENT RESISTANCE DCR (Ω) MAX	SATURATION CURRENT (A)	IRMS TEMPERATURE RISE CURRENT (A)
VRS4026-1R0NT	1.0	±30%	100KHz	0.017 ± 30%	3.10	2.80
VRS4026-1R5NT	1.5	±30%	100KHz	0.022 ± 30%	2.40	2.30
VRS4026-2R2MT	2.2	±20%	100KHz	0.030 ± 30%	2.10	2.00
VRS4026-3R3MT	3.3	±20%	100KHz	0.037 ± 30%	1.80	1.70
VRS4026-4R7MT	4.7	±20%	100KHz	0.055 ± 30%	1.45	1.60
VRS4026-6R8MT	6.8	±20%	100KHz	0.065 ± 30%	1.30	1.50
VRS4026-100MT	10	±20%	100KHz	0.085 ± 30%	1.00	1.30
VRS4026-150MT	15	±20%	100KHz	0.110 ± 30%	0.90	1.10
VRS4026-220MT	22	±20%	100KHz	0.200 ± 30%	0.60	0.90
VRS4026-330MT	33	±20%	100KHz	0.270 ± 30%	0.54	0.80
VRS4026-470MT	47	±20%	100KHz	0.400 ± 30%	0.40	0.65
VRS4026-101MT	100	±20%	100KHz	0.770 ± 30%	0.33	0.33

- VRS 4030 TYPE

PART NO.	INDUCTANCE (µH)	TOLERANCE	TEST FREQUENCY	DIRECT CURRENT RESISTANCE DCR (Ω) MAX	SATURATION CURRENT (A)	IRMS TEMPERATURE RISE CURRENT (A)
VRS4030-1R0NT	1.0	±30%	100KHz	0.016 ± 30%	5.26	4.15
VRS4030-1R5NT	1.5	±30%	100KHz	0.020 ± 30%	4.84	3.34
VRS4030-2R2MT	2.2	±30%	100KHz	0.030 ± 30%	4.90	3.00
VRS4030-3R3MT	3.3	±30%	100KHz	0.040 ± 30%	3.30	2.40
VRS4030-3R9MT	3.9	±20%	100KHz	0.057 ± 30%	3.00	2.10
VRS4030-4R7MT	4.7	±20%	100KHz	0.060 ± 30%	2.90	2.00
VRS4030-6R8MT	6.8	±20%	100KHz	0.090 ± 30%	2.20	1.60
VRS4030-8R2MT	8.2	±20%	100KHz	0.090 ± 30%	2.10	1.60
VRS4030-100MT	10.0	±20%	100KHz	0.100 ± 30%	1.95	1.50
VRS4030-150MT	15.0	±20%	100KHz	0.190 ± 30%	1.65	1.11
VRS4030-220MT	22.0	±20%	100KHz	0.250 ± 30%	1.30	1.00
VRS4030-330MT	33.0	±20%	100KHz	0.330 ± 30%	1.10	0.84
VRS4030-470MT	47.0	±20%	100KHz	0.600 ± 30%	0.95	0.72
VRS4030-680MT	68.0	±20%	100KHz	0.868 ± 30%	0.72	0.52
VRS4030-820MT	82.0	±20%	100KHz	1.060 ± 30%	0.66	0.47
VRS4030-101MT	100	±20%	100KHz	1.150 ± 30%	0.60	0.45
VRS4030-121MT	120.0	±20%	100KHz	1.350 ± 30%	0.57	0.55
VRS4030-151MT	150.0	±20%	100KHz	2.350 ± 30%	0.50	0.35

- VRS 5020 TYPE

PART NO.	INDUCTANCE (µH)	TOLERANCE	TEST FREQUENCY	DIRECT CURRENT RESISTANCE DCR (Ω) MAX	SATURATION CURRENT (A)	IRMS TEMPERATURE RISE CURRENT (A)
VRS5020-1R0NT	1.0	±30%	100KHz	0.020 ± 30%	4.40	3.80
VRS5020-2R2NT	2.2	±30%	100KHz	0.033 ± 30%	3.20	2.90
VRS5020-3R3MT	3.3	±20%	100KHz	0.043 ± 30%	2.55	2.50
VRS5020-4R7MT	4.7	±20%	100KHz	0.058 ± 30%	2.50	2.20
VRS5020-5R6MT	5.6	±20%	100KHz	0.068 ± 30%	2.30	2.05
VRS5020-6R8MT	6.8	±20%	100KHz	0.075 ± 30%	2.05	1.80
VRS5020-8R2MT	8.2	±20%	100KHz	0.096 ± 30%	1.85	1.65

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ELECTRICAL CHARACTERISTICS

- VRS 5020 TYPE - CONT.

PART NO.	INDUCTANCE (µH)	TOLERANCE	TEST FREQUENCY	DIRECT CURRENT RESISTANCE DCR (Ω) MAX	SATURATION CURRENT (A)	IRMS TEMPERATURE RISE CURRENT (A)
VRS5020-100MT	10	±20%	100KHz	0.120 ± 30%	1.70	1.55
VRS5020-150MT	15	±20%	100KHz	0.165 ± 30%	1.35	1.25
VRS5020-180MT	18	±20%	100KHz	0.200 ± 30%	1.25	1.15
VRS5020-220MT	22	±20%	100KHz	0.220 ± 30%	1.15	1.10
VRS5020-330MT	33	±20%	100KHz	0.350 ± 30%	0.92	0.90
VRS5020-390MT	39	±20%	100KHz	0.410 ± 30%	0.80	0.80
VRS5020-470MT	47	±20%	100KHz	0.520 ± 30%	0.77	0.77
VRS5020-560MT	56	±20%	100KHz	0.600 ± 30%	0.77	0.70
VRS5020-680MT	68	±20%	100KHz	0.680 ± 30%	0.65	0.64
VRS5020-820MT	82	±20%	100KHz	0.860 ± 30%	0.55	0.55
VRS5020-101MT	100	±20%	100KHz	1.100 ± 30%	0.53	0.53

- VRS 5040 TYPE

PART NO.	INDUCTANCE (µH)	TOLERANCE	TEST FREQUENCY	DIRECT CURRENT RESISTANCE DCR (Ω) MAX	SATURATION CURRENT (A)	IRMS TEMPERATURE RISE CURRENT (A)
VRS5040-1R0NT	1.0	±30%	100KHz	0.012 ± 30%	7.35	4.90
VRS5040-1R5NT	1.5	±30%	100KHz	0.014 ± 30%	6.00	4.50
VRS5040-1R8NT	1.8	±30%	100KHz	0.016 ± 30%	5.50	4.30
VRS5040-2R2NT	2.2	±30%	100KHz	0.018 ± 30%	4.90	3.80
VRS5040-3R3NT	3.3	±30%	100KHz	0.024 ± 30%	3.95	3.40
VRS5040-4R7NT	4.7	±30%	100KHz	0.030 ± 30%	3.50	3.00
VRS5040-5R6NT	5.6	±30%	100KHz	0.040 ± 30%	3.00	2.80
VRS5040-6R8MT	6.8	±20%	100KHz	0.045 ± 30%	2.90	2.50
VRS5040-8R2MT	8.2	±20%	100KHz	0.055 ± 30%	2.70	2.30
VRS5040-100MT	10.0	±20%	100KHz	0.066 ± 30%	2.35	2.10
VRS5040-150MT	15.0	±20%	100KHz	0.090 ± 30%	2.00	2.00
VRS5040-220MT	22.0	±20%	100KHz	0.130 ± 30%	1.60	1.50
VRS5040-330MT	33.0	±20%	100KHz	0.200 ± 30%	1.30	1.20
VRS5040-390MT	39.0	±20%	100KHz	0.230 ± 30%	1.20	1.10
VRS5040-470MT	47.0	±20%	100KHz	0.300 ± 30%	1.00	1.00
VRS5040-560MT	56.0	±20%	100KHz	0.330 ± 30%	0.95	0.85
VRS5040-680MT	68.0	±20%	100KHz	0.420 ± 30%	0.90	0.80
VRS5040-820MT	82.0	±20%	100KHz	0.500 ± 30%	0.80	0.75
VRS5040-101MT	100.0	±20%	100KHz	0.620 ± 30%	0.75	0.70
VRS5040-151MT	150.0	±20%	100KHz	0.850 ± 30%	0.65	0.60
VRS5040-181MT	180.0	±20%	100KHz	1.150 ± 30%	0.50	0.43
VRS5040-221MT	220.0	±20%	100KHz	1.200 ± 30%	0.46	0.42
VRS5040-331MT	330.0	±20%	100KHz	1.750 ± 30%	0.40	0.36
VRS5040-391MT	390.0	±20%	100KHz	2.500 ± 30%	0.35	0.32
VRS5040-471MT	470.0	±20%	100KHz	2.850 ± 30%	0.32	0.30
VRS5040-561MT	560.0	±20%	100KHz	3.200 ± 30%	0.30	0.28
VRS5040-681MT	680.0	±20%	100KHz	3.750 ± 30%	0.27	0.25
VRS5040-821MT	820.0	±20%	100KHz	5.700 ± 30%	0.24	0.22
VRS5040-102MT	1000.0	±20%	100KHz	6.500 ± 30%	0.21	0.19

ELECTRICAL CHARACTERISTICS

- VRS 6020 TYPE - CONT.

PART NO.	INDUCTANCE (µH)	TOLERANCE	TEST FREQUENCY	DIRECT CURRENT RESISTANCE DCR (Ω) MAX	SATURATION CURRENT (A)	IRMS TEMPERATURE RISE CURRENT (A)
VRS6020-1R0NT	1.0	±30%	100KHz	0.020 ± 30%	4.15	3.50
VRS6020-1R5NT	1.5	±30%	100KHz	0.022 ± 30%	4.00	3.20
VRS6020-2R2NT	2.2	±30%	100KHz	0.028 ± 30%	3.75	2.75
VRS6020-3R3NT	3.3	±30%	100KHz	0.035 ± 30%	3.15	2.60
VRS6020-4R7NT	4.7	±30%	100KHz	0.058 ± 30%	3.00	2.00
VRS6020-6R8NT	6.8	±30%	100KHz	0.079 ± 30%	2.20	1.80
VRS6020-100MT	10	±20%	100KHz	0.105 ± 30%	1.75	1.40
VRS6020-150MT	15	±20%	100KHz	0.145 ± 30%	1.20	1.20
VRS6020-220MT	22	±20%	100KHz	0.204 ± 30%	1.05	1.00
VRS6020-330MT	33	±20%	100KHz	0.300 ± 30%	0.95	0.84
VRS6020-470MT	47	±20%	100KHz	0.430 ± 30%	0.70	0.65
VRS6020-680MT	68	±20%	100KHz	0.660 ± 30%	0.62	0.60
VRS6020-101MT	100	±20%	100KHz	1.200 ± 30%	0.50	0.45

- VRS 6028 TYPE - CONT.

PART NO.	INDUCTANCE (µH)	TOLERANCE	TEST FREQUENCY	DIRECT CURRENT RESISTANCE DCR (Ω) MAX	SATURATION CURRENT (A)	IRMS TEMPERATURE RISE CURRENT (A)
VRS6028-1R0NT	1.0	±30%	100KHz	0.014 ± 30%	5.75	5.20
VRS6028-1R5NT	1.5	±30%	100KHz	0.016 ± 30%	5.00	4.58
VRS6028-2R2NT	2.2	±30%	100KHz	0.020 ± 30%	5.10	3.75
VRS6028-3R3NT	3.3	±30%	100KHz	0.023 ± 30%	3.60	3.48
VRS6028-3R9NT	3.9	±30%	100KHz	0.028 ± 30%	3.00	3.20
VRS6028-4R7NT	4.7	±30%	100KHz	0.031 ± 30%	2.70	3.08
VRS6028-6R8NT	6.8	±30%	100KHz	0.048 ± 30%	2.30	2.40
VRS6028-8R2NT	8.2	±30%	100KHz	0.055 ± 30%	2.30	2.25
VRS6028-100MT	10	±20%	100KHz	0.065 ± 30%	1.90	1.95
VRS6028-150MT	15	±20%	100KHz	0.095 ± 30%	1.60	1.45
VRS6028-220MT	22	±20%	100KHz	0.135 ± 30%	1.30	1.40
VRS6028-270MT	27	±20%	100KHz	0.155 ± 30%	1.50	1.32
VRS6028-330MT	33	±20%	100KHz	0.220 ± 30%	1.10	1.22
VRS6028-390MT	39	±20%	100KHz	0.225 ± 30%	1.25	1.10
VRS6028-470MT	47	±20%	100KHz	0.300 ± 30%	0.95	1.06
VRS6028-680MT	68	±20%	100KHz	0.420 ± 30%	0.76	0.86
VRS6028-820MT	82	±20%	100KHz	0.520 ± 30%	0.64	0.70
VRS6028-101MT	100	±20%	100KHz	0.570 ± 30%	0.62	0.70
VRS6028-151MT	150	±20%	100KHz	0.760 ± 30%	0.50	0.50
VRS6028-221MT	220	±20%	100KHz	1.200 ± 30%	0.38	0.38
VRS6028-331MT	330	±20%	100KHz	1.800 ± 30%	0.32	0.32
VRS6028-471MT	470	±20%	100KHz	2.300 ± 30%	0.28	0.28

ELECTRICAL CHARACTERISTICS

- VRS 6045 TYPE

PART NO.	INDUCTANCE (μH)	TOLERANCE	TEST FREQUENCY	DIRECT CURRENT RESISTANCE DCR (Ω) MAX	SATURATION CURRENT (A)	IRMS TEMPERATURE RISE CURRENT (A)
VRS6045-1R0NT	1.0	±30%	100KHz	0.014 ± 30%	8.50	5.14
VRS6045-1R3NT	1.3	±30%	100KHz	0.016 ± 30%	8.00	5.05
VRS6045-1R5NT	1.5	±30%	100KHz	0.016 ± 30%	8.35	5.05
VRS6045-1R8NT	1.8	±30%	100KHz	0.018 ± 30%	7.00	4.95
VRS6045-2R2NT	2.2	±30%	100KHz	0.021 ± 30%	6.00	4.60
VRS6045-3R0NT	2.0	±30%	100KHz	0.024 ± 30%	5.00	3.80
VRS6045-3R3NT	3.3	±30%	100KHz	0.024 ± 30%	5.00	3.70
VRS6045-3R9MT	3.9	±20%	100KHz	0.028 ± 30%	4.50	3.50
VRS6045-4R7MT	4.7	±20%	100KHz	0.031 ± 30%	4.00	3.30
VRS6045-5R6MT	5.6	±20%	100KHz	0.035 ± 30%	3.80	3.15
VRS6045-6R3MT	6.3	±20%	100KHz	0.035 ± 30%	3.80	3.15
VRS6045-6R8MT	6.8	±20%	100KHz	0.038 ± 30%	3.80	3.00
VRS6045-8R2MT	8.2	±20%	100KHz	0.043 ± 30%	3.50	2.70
VRS6045-100MT	10	±20%	100KHz	0.047 ± 30%	3.20	2.45
VRS6045-120MT	12	±20%	100KHz	0.058 ± 30%	2.80	2.20
VRS6045-150MT	15	±20%	100KHz	0.077 ± 30%	2.50	2.05
VRS6045-220MT	22	±20%	100KHz	0.115 ± 30%	2.05	1.80
VRS6045-330MT	33	±20%	100KHz	0.145 ± 30%	1.65	1.45
VRS6045-390MT	39	±20%	100KHz	0.210 ± 30%	1.50	1.25
VRS6045-470MT	47	±20%	100KHz	0.220 ± 30%	1.40	1.20
VRS6045-560MT	56	±20%	100KHz	0.260 ± 30%	1.30	1.10
VRS6045-680MT	68	±20%	100KHz	0.330 ± 30%	1.20	1.00
VRS6045-820MT	82	±20%	100KHz	0.450 ± 30%	1.05	0.90
VRS6045-101MT	100	±20%	100KHz	0.500 ± 30%	0.95	0.80
VRS6045-121MT	120	±20%	100KHz	0.466 ± 30%	0.88	0.79
VRS6045-151MT	150	±20%	100KHz	0.800 ± 30%	0.80	0.70
VRS6045-181MT	180	±20%	100KHz	0.950 ± 30%	0.75	0.65
VRS6045-221MT	220	±20%	100KHz	1.200 ± 30%	0.70	0.59
VRS6045-331MT	330	±20%	100KHz	1.700 ± 30%	0.57	0.57
VRS6045-471MT	470	±20%	100KHz	1.800 ± 30%	0.50	0.42
VRS6045-681MT	680	±20%	100KHz	3.550 ± 30%	0.42	0.33
VRS6045-102MT	1000	±20%	100KHz	4.500 ± 30%	0.30	0.20

- VRS 8040 TYPE

PART NO.	INDUCTANCE (μH)	TOLERANCE	TEST FREQUENCY	DIRECT CURRENT RESISTANCE DCR (Ω) MAX	SATURATION CURRENT (A)	IRMS TEMPERATURE RISE CURRENT (A)
VRS8040-R90NT	0.90	±30%	100KHz	0.006 ± 30%	11.00	7.80
VRS8040-1R0NT	1.0	±30%	100KHz	0.006 ± 30%	11.00	7.80
VRS8040-1R4NT	1.4	±30%	100KHz	0.010 ± 30%	9.00	7.00
VRS8040-1R5NT	1.5	±30%	100KHz	0.010 ± 30%	8.15	5.65
VRS8040-2R0NT	2.0	±30%	100KHz	0.009 ± 30%	7.40	6.30
VRS8040-2R2NT	2.2	±30%	100KHz	0.009 ± 30%	7.40	6.30
VRS8040-2R8NT	2.8	±30%	100KHz	0.014 ± 30%	5.80	5.10

ELECTRICAL CHARACTERISTICS

- VRS 8040 TYPE

PART NO.	INDUCTANCE (μH)	TOLERANCE	TEST FREQUENCY	DIRECT CURRENT RESISTANCE DCR (Ω) MAX	SATURATION CURRENT (A)	IRMS TEMPERATURE RISE CURRENT (A)
VRS8040-3R3MT	3.3	±20%	100KHz	0.015 ± 30%	5.30	4.90
VRS8040-3R6MT	3.6	±20%	100KHz	0.015 ± 30%	5.30	4.90
VRS8040-3R8MT	3.8	±20%	100KHz	0.015 ± 30%	5.30	4.90
VRS8040-4R7MT	4.7	±20%	100KHz	0.018 ± 30%	4.70	4.10
VRS8040-5R6MT	5.6	±20%	100KHz	0.021 ± 30%	6.00	3.85
VRS8040-6R8MT	6.8	±20%	100KHz	0.025 ± 30%	4.00	3.70
VRS8040-8R2MT	8.2	±20%	100KHz	0.028 ± 30%	4.20	3.45
VRS8040-100MT	10	±20%	100KHz	0.034 ± 30%	3.40	3.10
VRS8040-120MT	12	±20%	100KHz	0.041 ± 30%	3.50	2.80
VRS8040-150MT	15	±20%	100KHz	0.050 ± 30%	2.70	2.40
VRS8040-180MT	18	±20%	100KHz	0.066 ± 30%	2.70	2.30
VRS8040-220MT	22	±20%	100KHz	0.066 ± 30%	2.20	2.20
VRS8040-270MT	27	±20%	100KHz	0.083 ± 30%	2.00	2.00
VRS8040-330MT	33	±20%	100KHz	0.100 ± 30%	1.90	1.70
VRS8040-390MT	39	±20%	100KHz	0.120 ± 30%	1.70	1.60
VRS8040-470MT	47	±20%	100KHz	0.150 ± 30%	1.50	1.40
VRS8040-560MT	56	±20%	100KHz	0.180 ± 30%	1.55	1.45
VRS8040-680MT	68	±20%	100KHz	0.230 ± 30%	1.20	1.10
VRS8040-750MT	75	±20%	100KHz	0.211 ± 30%	1.35	1.20
VRS8040-800MT	80	±20%	100KHz	0.230 ± 30%	1.30	1.15
VRS8040-820MT	82	±20%	100KHz	0.225 ± 30%	1.30	1.20
VRS8040-101MT	100	±20%	100KHz	0.290 ± 30%	1.00	1.00
VRS8040-121MT	120	±20%	100KHz	0.334 ± 30%	1.05	0.95
VRS8040-151MT	150	±20%	100KHz	0.480 ± 30%	0.95	0.85
VRS8040-221MT	220	±20%	100KHz	0.660 ± 30%	0.85	0.80
VRS8040-331MT	330	±20%	100KHz	1.020 ± 30%	0.68	0.64
VRS8040-471MT	470	±20%	100KHz	1.500 ± 30%	0.60	0.60
VRS8040-681MT	680	±20%	100KHz	2.040 ± 30%	0.50	0.45
VRS8040-102MT	1000	±20%	100KHz	2.800 ± 30%	0.40	0.35
VRS8040-152MT	1500	±20%	100KHz	4.300 ± 30%	0.32	0.26

REMARKS: The test voltage is 0.5V
ISAT: The DC current at which the inductance drops 30% from its value without current, load current time within 1s.
IRMS: The DC current that increases the surface temperature of the inductor by 40°C

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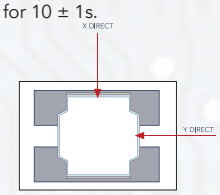
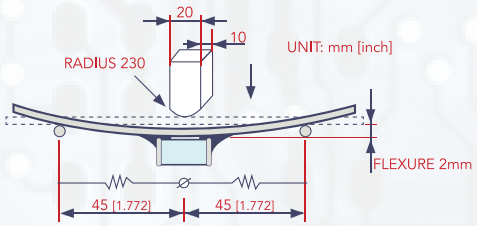
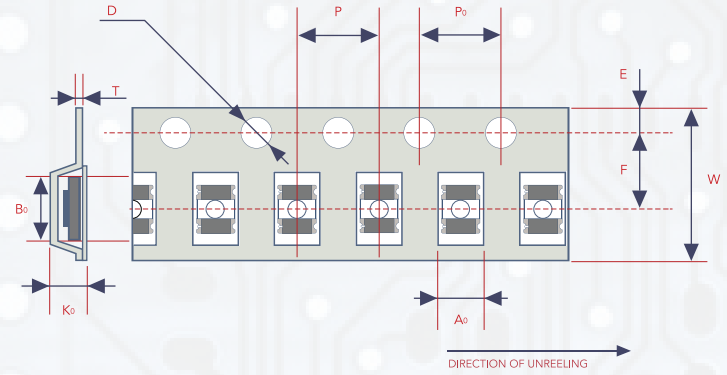
RELIABILITY TEST METHOD

NO.	ITEMS	REQUIREMENT	TEST METHODS
1	Insulation Resistance	≥100 MΩ	- 100 V DC Between inductor coil and core for 60 seconds
2	Solderability	95% or more of electrode area shall be coated by new solder	- Dip pads in flux and dip in solder pot (96.5 Sn / 3.0 Ag / 0.5 Cu) at 245 ± 5°C for (5±1) seconds.
3	Resistance to Soldering Heat	No visible mechanical damage. Inductance change: Within ±10%	- Dip pads in flux and dip in solder pot (96.5 Sn / 3.0 Ag / 0.5 Cu) at 260 ± 5°C for (10±1) seconds.
4	Terminal Strength	No looseness of shedding of terminals	- 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	No visible mechanical damage. Inductance change: Within ±10%	- Temperature 125 ± 2°C, time 1000 $^{+240}$ h, test within 48 hours after 2 hours of placement at room temperature.
6	Low Temperature	No visible mechanical damage. Inductance change: Within ±10%	- Temperature -40°C ± 2°C, time 1000^{+240} h, test within 48 hours after 2 hours of placement at room temperature.
7	Thermal Shock	No visible mechanical damage. Inductance change: Within ±10%	- The test sample shall be placed at (-40 ± 3)°C and (125 ± 2)°C 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 Characteristics	Inductance change P_{c-b},P_{c-d}: Within ±20%	- Based on the inductance at 20°C and Measured at the ambient of -40°C ~ +125°C
9	Constant Damp Heat	No visible mechanical damage. Inductance change: Within ±10%	- The inductors were stored for 1000^{+240} h at humidity (90~95)% RH, temperature 60±2°C, and tested within 48h after 2H at room temperature.
10	Vibration	No visible mechanical damage. Inductance change: Within ±10%	- 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/s2) - 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.	- 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)	No visible mechanical damage. Inductance change: Within ±10%	- Temperature 85 °C ± 2 °C, Time 1000^{+240} h, apply a rated current, test within 48 hours after 2 hours of placement at room temperature. Note: If the surface temperature of the part over 125°C when the current is loaded, the current need to reduce until the surface temperature of the part less than 125 °C.

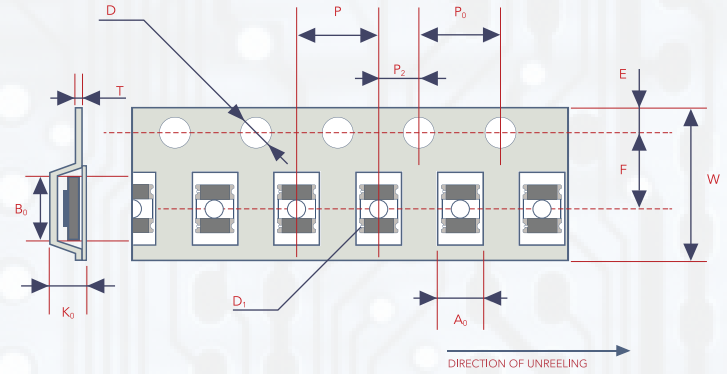
PACKAGING

- Tape Dimension



UNIT: mm

PART	W	A	A_0	B_0	D	D_1	E	F	K_0	P_0	P_2	P	T
2512	8 ± 0.3	2.4 ± 0.2	2.65 ± 0.2	1.5 ± 0.2	---	1.75 ± 0.2	2.5 ± 0.2	3.5 ± 0.2	1.4 ± 0.2	4.0 ±0.2	2.0 ±0.2	4.0 ± 0.3	0.25 ±0.05



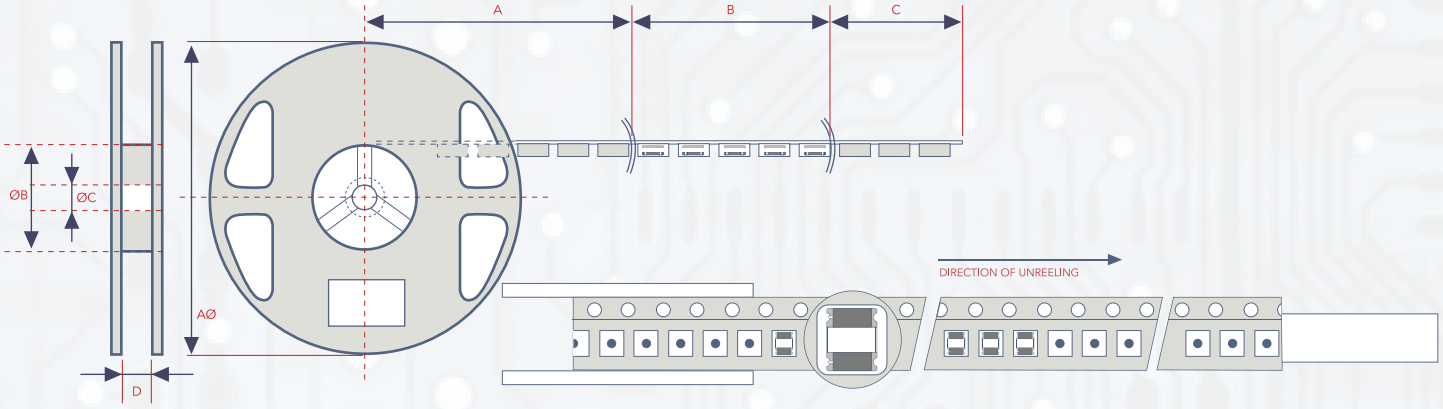
UNIT: mm

PART	W	A_0	B_0	D	D_1	E	F	K_0	P_0	P_2	P	T
3015	8.0±0.3	3.3±0.1	3.3±0.1	1.5±0.1	---	1.75±0.1	3.5±0.1	1.9±0.1	4.0±0.1	2.0±0.1	4.0±0.1	0.25±0.1
4018	12±0.5	4.3±0.3	4.3±0.3	1.5±0.3	1.5±0.3	1.75±0.3	5.5±0.3	2.1±0.3	4.0±0.3	2.0±0.3	8.0±0.3	0.30±0.1
4020	12±0.5	4.3±0.3	4.3±0.3	1.5±0.3	1.5±0.3	1.75±0.3	5.5±0.3	2.1±0.3	4.0±0.3	2.0±0.3	8.0±0.3	0.30±0.1
4026	12±0.3	4.3±0.3	4.3±0.3	1.5±0.3	1.5±0.3	1.75±0.3	5.5±0.3	2.8±0.3	4.0±0.3	2.0±0.3	8.0±0.3	0.30±0.1
4030	12±0.3	4.3±0.3	4.3±0.3	1.5±0.3	1.5±0.3	1.75±0.3	5.5±0.3	3.1±0.1	4.0±0.3	2.0±0.3	8.0±0.3	0.30±0.1
5020	12±0.3	5.3±0.3	5.3±0.3	1.5±0.3	1.5±0.3	1.75±0.3	5.5±0.3	2.2±0.3	4.0±0.3	2.0±0.3	8.0±0.3	0.30±0.1
5040	12±0.3	5.5±0.3	5.5±0.3	1.5±0.3	1.5±0.3	1.75±0.3	5.5±0.3	4.4±0.3	4.0±0.3	2.0±0.3	8.0±0.3	0.40±0.1
6020	12±0.3	6.3±0.3	6.3±0.3	1.5±0.3	1.5±0.3	1.75±0.3	5.5±0.3	2.2±0.3	4.0±0.3	2.0±0.3	8.0±0.3	0.30±0.1
6028	16±0.5	6.4±0.3	6.4±0.3	1.5±0.3	1.5±0.3	1.75±0.3	7.5±0.3	3.4±0.3	4.0±0.3	2.0±0.3	8.0±0.3	0.35±0.1
6045	16±0.5	6.4±0.3	6.4±0.3	1.5±0.3	1.5±0.3	1.75±0.3	7.5±0.3	4.7±0.3	4.0±0.3	2.0±0.3	8.0±0.3	0.40±0.1
8040	16±0.5	8.4±0.3	8.4±0.3	1.5±0.3	1.5±0.3	1.75±0.3	7.5±0.3	4.7±0.3	4.0±0.3	2.0±0.3	12±0.3	0.40±0.1

RoHS Pb HF

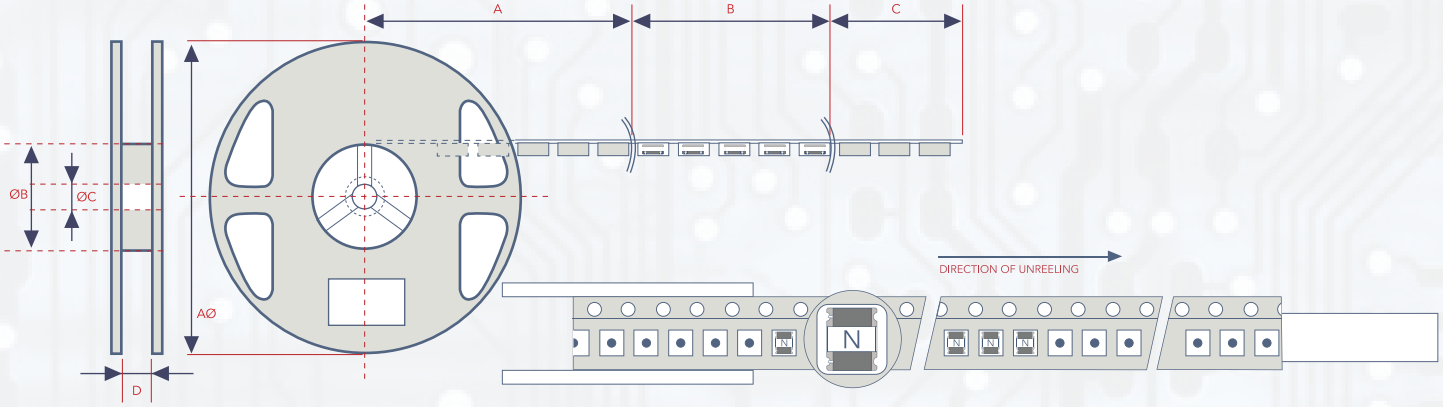
PACKAGING

- Reel Size & Direction of Feed

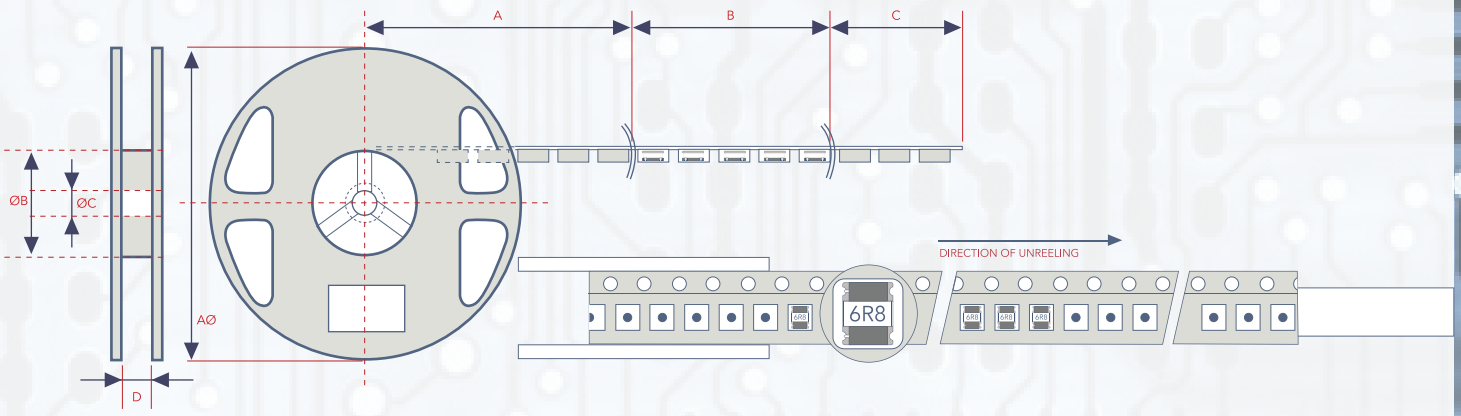


PART	ØA	ØB	ØC	D	A	B	C
2512	178	58	13	8.4	Blank Portions	Chip Cavity	Leader

UNIT: mm



PART	ØA	ØB	ØC	D	A	B	C
3015	178	58	13	8.4	Blank Portions	Chip Cavity	Leader



PART	ØA	ØB	ØC	D	A	B	C
4018	330	100	13	12.4	Blank Portions	Chip Cavity	Leader
4020	330	100	13	12.4			
4026	330	100	13	12.4			
4030	330	100	13	12.4			
5020	330	100	13	12.4			
5040	330	100	13	12.4			
6020	330	100	13	12.4			
6028	330	100	13	16.4			
6045	330	100	13	16.4			
8040	330	100	13	16.4			

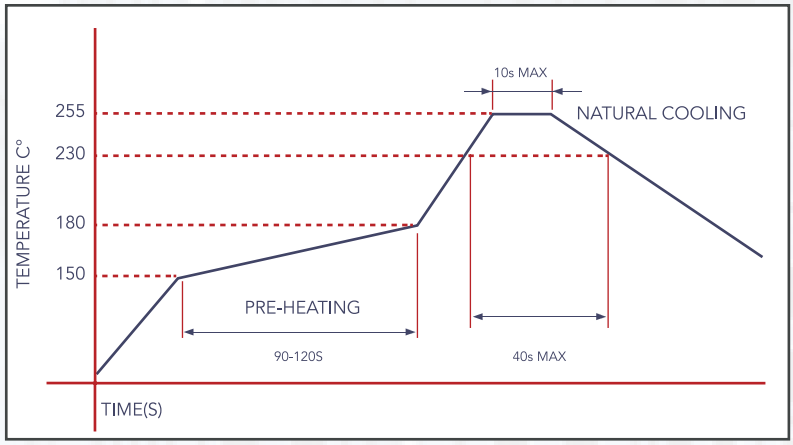
PACKAGING

- Packing Quantity

PART	REEL SIZE
2512	3,000
3015	2,000
4018	3,000
4020	3,000
4026	2,500
4030	2,000
5020	2,500
5040	2,000
6020	2,500
6028	2,000
6045	1,500
8040	1,000

RECOMMENDED SOLDERING PROFILE

- Applicable soldering process to the products is reflow soldering.
- Solder: Sn-3.0Ag-0.5Cu
- 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

- 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.
- Storage Conditions:

  Temperature: -10 to +40°C (Inductors With Taping); -40 to +85°C (Inductors Body)
  Humidity: 30~70%RH

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