

FEATURES

- RoHS compliant
- Highly accurate dimensions
- Terminals are highly resistant to external forces
- Highly reliable in environments of sudden temperature change and humidity
- Superior EMI characteristics with ultra low radiation comparing to conventional shielded power inductors
- Operate temperature range -40℃ ~ +125℃ (Including self temp. rise)



APPLICATIONS

- LCD TV
- Monitor
- Ap router
- STB and smart phone
- Touch panel
- DSC
- Game console and other electronic devices

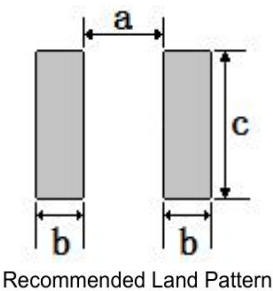
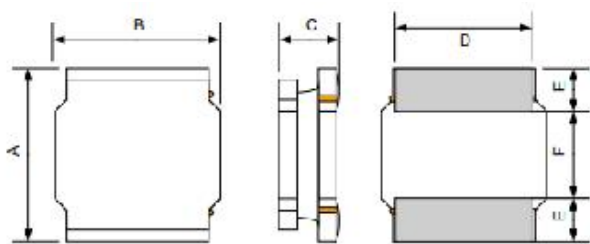
PRODUCT IDENTIFICATION

NR 3012 S 2R2 M T

① ② ③ ④ ⑤ ⑥

- ① Series Name Wire Wound SMD Power Inductors
- ② Size Code: L*W*T
- ③ Feature Type: Standard
- ④ Initial inductance value: 2R2 = 2.2uH
- ⑤ Inductance Tolerance: M±20%
- ⑥ Packing: Tape & Reel

Shape and Dimensions (Unit:mm)



Recommended Land Pattern

Series	A	B	C	D	E	F	a Typ.	b Typ.	c Typ.
NR3012S	3.0±0.2	3.0±0.2	1.2 Max.	2.5±0.2	0.75±0.2	1.5±0.2	1.50	0.80	2.7

Electrical Characteristics List

NO.	Part Number	Inductance	DC Resistance		Isat(A)		Irms(A)	
		100KHz/1.0V	Max.	Typ.	Max.	Typ.	Max.	Typ.
	Units	(uH)	Ω	Ω	A	A	A	A
1	NR3012S1R0NT	1.0 \pm 30%	0.052	0.043	2.20	2.80	2.20	2.70
2	NR3012S1R5NT	1.5 \pm 30%	0.059	0.052	1.62	1.90	1.80	2.00
3	NR3012S2R2MT	2.2 \pm 20%	0.098	0.088	1.20	1.60	1.55	1.70
4	NR3012S3R3MT	3.3 \pm 20%	0.130	0.118	1.05	1.20	1.36	1.45
5	NR3012S4R7MT	4.7 \pm 20%	0.156	0.135	0.90	1.00	1.24	1.30
6	NR3012S6R8MT	6.8 \pm 20%	0.247	0.218	0.75	0.90	0.98	1.10
7	NR3012S100MT	10.0 \pm 20%	0.345	0.314	0.60	0.75	0.80	0.85
8	NR3012S150MT	15.0 \pm 20%	0.468	0.425	0.45	0.62	0.70	0.75
9	NR3012S220MT	22.0 \pm 20%	0.839	0.726	0.42	0.52	0.53	0.59
10	NR3012S330MT	33.0 \pm 20%	1.138	0.086	0.36	0.46	0.46	0.50
11	NR3012S470MT	47.0 \pm 20%	1.885	1.761	0.27	0.35	0.35	0.40

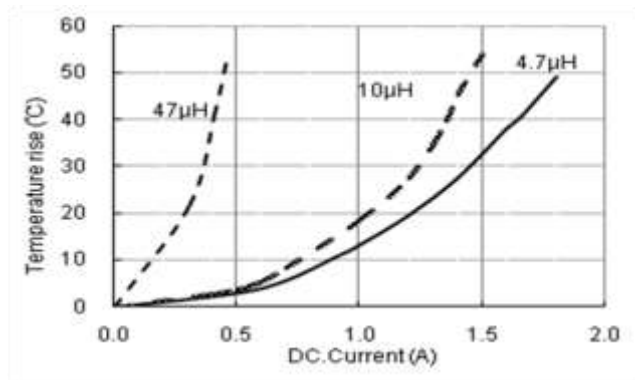
Notes:

- ※1: All test data is referenced to 20°C ambient;
- ※2: Rated current: Isat or Irms, whichever is smaller;
- ※*3: Isat: DC current at which the inductance drops approximate 30% from its value without current;
- ※*4: Irms: DC current that causes the temperature rise ($\Delta T = 40^{\circ}C$) from 20°C ambient.

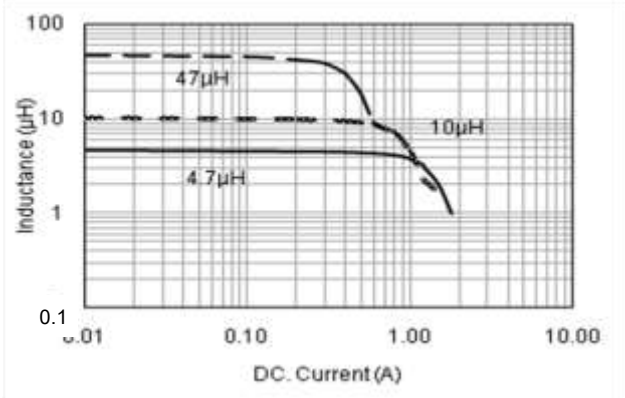
TYPICAL ELECTRICAL CHARACTERISTICS

NR3012S Series

Temperature vs. DC Current Characteristics



Inductance vs. DC Current Characteristics



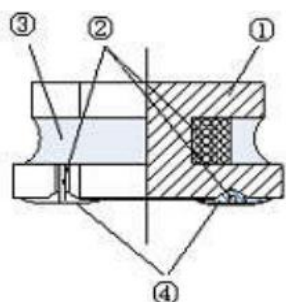
Reliability Test

TEST ITEM	SPECIFICATION	TEST CONDITION
Withstanding voltage test	After test, inductors shall have no evidence of electrical and mechanical damage.	AC voltage of 100v and AC current of 1mA applied between inductor's terminal and core for 3 secs.
Resistance to soldering heat	1. Inductor shall have no evidence of electrical and mechanical damage. 2. Inductance shall not change more than $\pm 5\%$. 3. Q shall not change more than 20%.	a. Temp: 260 ± 5 b. Time: 10 ± 1.0 se
Solderability test	The terminal shall be at least 95% covered with solder.	After fluxing, the terminal shall be dipped in a melted solder bath at $245 \pm 5^\circ\text{C}$ for 4 ± 1.0 secs.
High temperature & high humidity test	The anti-erosion quality of the surface and the specimen's inductance shall not change from the initial value within $\pm 10\%$	a. Test condition 1) Temp.: 85°C , R.H.: 85% 2) Time: 144 ± 2 hours b. Measurement method The experimental component should be put at normal condition for 2 hours then to measure again after test
Salt spray test		a. Test condition 1) Temp.: $35 \pm 2^\circ\text{C}$ 2) Time: 48 ± 2 hours 3) Salt solution PH: 6.5~7.2 b. Measurement method The experimental component should be put at normal condition for 2 hours then to measure again after test
Vibration test	1. Inductance shall be within 10% of the initial value. 2. Appearance: no damage	a. Frequency: 10 to 55 b. Amplitude: 1.5 c. Direction and time X, Y and Z directions for 2 hours each.

TEST ITEM	SPECIFICATION	TEST CONDITION
Free fall test	No mechanical damage shall be noticed.	Drop 5 times on a concrete floor from 1m the height
Temperature Cycling test	1. Inductance shall be within 10% of the initial value 2. Appearance: No damage	a. Test condition 1) Temp.: -55°C , time: 30 ± 3 min 2) Temp.: $+125^{\circ}\text{C}$, time: 30 ± 3 min 3) Cycles times: 12 cycles b. Measurement method The experimental component should be put at normal condition for 2 hours then to measure again after test
High Temperature resistance test		a. Test condition 1) Applied rated current 2) Temp.: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 3) Test time: $1000 \pm 24/-0$ H b. Measurement method The experimental component should be put at normal condition for 24 hours then to measure again after test.
Low temperature resistance test		a. Test condition 1) Temp.: $-55^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 2) Test time: $1000 \pm 24/-0$ H b. Measurement method The experimental component should be put at normal condition for 24 hours then to measure again after test.

We have suggested the storage period of lead-free product should not over 6 months.

Structure (The structure of product.)



NO	Components	Material
①	Core	Ni-Zn Ferrite
②	Wire	Polyurethane system enameled copper wire
③	Magnetic Glue	Epoxy resin and magnetic powder
④	Plating	AgNiSn or FeNiCu + Sn Alloy

