

# SMD Inductors(Coils) For Signal Line(Wound)

Conformity to RoHS Directive

## NL Series NL453232

### FEATURES

- The product has good heat durability that withstands lead-free compatible reflow soldering conditions.
- Lead-free material is used for the plating on the terminal.
- The product uses metal terminals, which realize excellent connection reliability.
- From 1 $\mu$ H to 1000 $\mu$ H, all of the products in the E-12 series are J( $\pm$ 5%) tolerance products.
- It is a product conforming to RoHS directive.

### APPLICATIONS

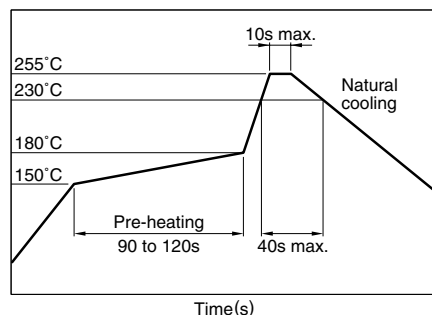
- Electronic equipment used in communication infrastructures including xDSL and mobile base stations.
- Audio-visual equipment including TVs and VCRs.
- Other electronic equipment including HDDs and ODDs.

### SPECIFICATIONS

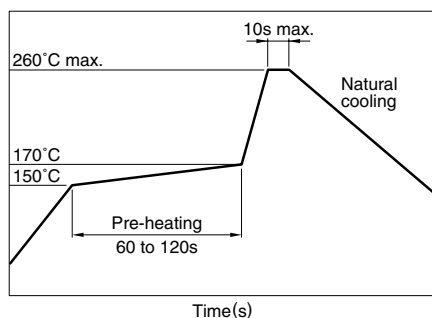
Operating temperature range	-40 to +105°C [Including self-temperature rise]
Storage temperature range	-40 to +105°C

### RECOMMENDED SOLDERING CONDITIONS

#### REFLOW SOLDERING



#### FLOW SOLDERING



### IRON SOLDERING

Tip temperature	300 to 350°C
Heating time	3 seconds/soldering
Soldering rod specifications	Output: 30W Tip diameter: 1mm

- Based on the above conditions, use a maximum product temperature of 260°C and a maximum accumulated heating time of 10 seconds as a guideline.
- Please contact us for details.

### PRODUCT IDENTIFICATION

NL	453232	T-	2R2	J	-	PF
(1)	(2)	(3)	(4)	(5)	(6)	

(1)Series name

(2)Dimensions

453232	4.5×3.2×3.2mm (L×W×T)
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(3)Packaging style

T	Taping (reel)
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(4)Inductance value

1R0	1 $\mu$ H
100	10 $\mu$ H
101	100 $\mu$ H
102	1000 $\mu$ H

(5)Inductance tolerance

J	$\pm$ 5%
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(6) Lead-free compatible product

PF	Lead-free compatible product
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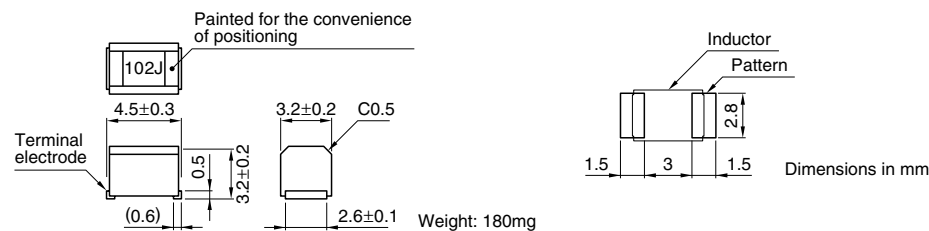
### PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	500 pieces/reel

- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

- All specifications are subject to change without notice.

## SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



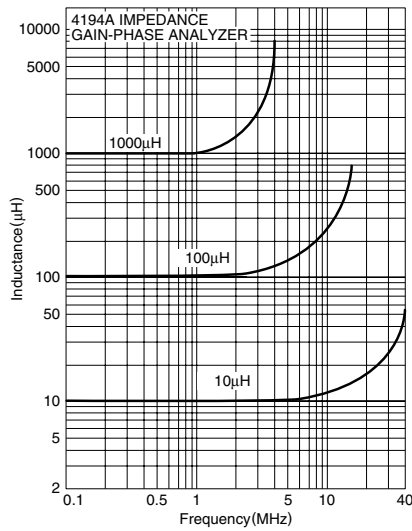
## ELECTRICAL CHARACTERISTICS

Inductance (μH)	Inductance tolerance	Q min.	Test frequency L, Q (MHz)	Self-resonant frequency (MHz)min.	DC resistance (Ω)max.	Rated current* (mA)max.	Part No.
1	±5%	50	7.96	100	0.5	450	NL453232T-1R0J-PF
1.2	±5%	50	7.96	80	0.55	430	NL453232T-1R2J-PF
1.5	±5%	50	7.96	70	0.6	410	NL453232T-1R5J-PF
1.8	±5%	50	7.96	60	0.65	390	NL453232T-1R8J-PF
2.2	±5%	50	7.96	55	0.7	380	NL453232T-2R2J-PF
2.7	±5%	50	7.96	50	0.75	370	NL453232T-2R7J-PF
3.3	±5%	50	7.96	45	0.8	355	NL453232T-3R3J-PF
3.9	±5%	50	7.96	40	0.9	330	NL453232T-3R9J-PF
4.7	±5%	50	7.96	35	1	315	NL453232T-4R7J-PF
5.6	±5%	50	7.96	33	1.1	300	NL453232T-5R6J-PF
6.8	±5%	50	7.96	27	1.2	285	NL453232T-6R8J-PF
8.2	±5%	50	7.96	25	1.4	270	NL453232T-8R2J-PF
10	±5%	50	2.52	20	1.6	250	NL453232T-100J-PF
12	±5%	50	2.52	18	2	225	NL453232T-120J-PF
15	±5%	50	2.52	17	2.5	200	NL453232T-150J-PF
18	±5%	50	2.52	15	2.8	190	NL453232T-180J-PF
22	±5%	50	2.52	13	3.2	180	NL453232T-220J-PF
27	±5%	50	2.52	12	3.6	170	NL453232T-270J-PF
33	±5%	50	2.52	11	4	160	NL453232T-330J-PF
39	±5%	50	2.52	10	4.5	150	NL453232T-390J-PF
47	±5%	50	2.52	10	5	140	NL453232T-470J-PF
56	±5%	50	2.52	9	5.5	135	NL453232T-560J-PF
68	±5%	50	2.52	9	6	130	NL453232T-680J-PF
82	±5%	50	2.52	8	7	120	NL453232T-820J-PF
100	±5%	40	0.796	8	8	110	NL453232T-101J-PF
120	±5%	40	0.796	6	8	110	NL453232T-121J-PF
150	±5%	40	0.796	5	9	105	NL453232T-151J-PF
180	±5%	40	0.796	5	9.5	102	NL453232T-181J-PF
220	±5%	40	0.796	4	10	100	NL453232T-221J-PF
270	±5%	40	0.796	4	12	92	NL453232T-271J-PF
330	±5%	40	0.796	3.5	14	85	NL453232T-331J-PF
390	±5%	40	0.796	3	16	80	NL453232T-391J-PF
470	±5%	40	0.796	3	26	62	NL453232T-471J-PF
560	±5%	30	0.796	3	30	50	NL453232T-561J-PF
680	±5%	30	0.796	3	30	50	NL453232T-681J-PF
820	±5%	30	0.796	2.5	35	30	NL453232T-821J-PF
1000	±5%	30	0.252	2.5	40	30	NL453232T-102J-PF

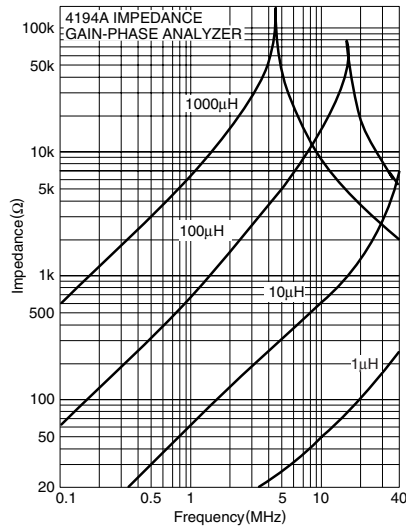
\* Rated current: Value obtained when current flows and the temperature has risen to 20°C or when DC current flows and the initial value of inductance has fallen by 10%, whichever is smaller.

- Test equipment L, Q: YHP4194A IMPEDANCE ANALYZER (16085A+16093B+TDK TF-1)  
SRF: HP8753C NETWORK ANALYZER (Z<sub>in</sub>=Z<sub>out</sub>=50Ω)  
Rdc: MATSUSHITA VP-2941A DIGITAL MILLIOHM METER

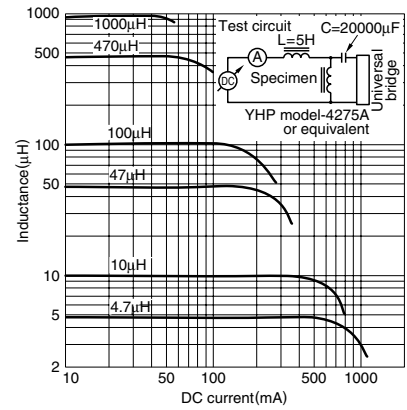
### TYPICAL ELECTRICAL CHARACTERISTICS INDUCTANCE vs. FREQUENCY CHARACTERISTICS



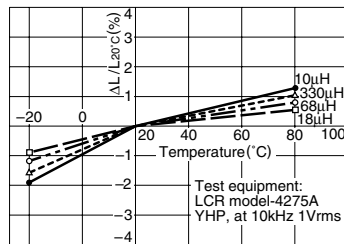
### IMPEDANCE vs. FREQUENCY CHARACTERISTICS



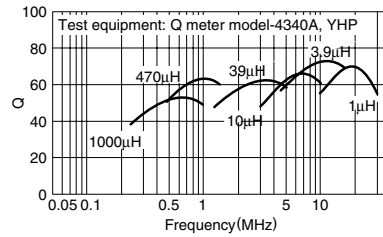
### INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS



### INDUCTANCE CHANGE vs. TEMPERATURE CHARACTERISTICS



### Q vs. FREQUENCY CHARACTERISTICS



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