



**THE DATASHEET OF  
NLFC453232T-101K-PF**



# SMD Inductors(Coils) For Power Line(Wound, Magnetic Shielded)

Conformity to RoHS Directive

## NLFC Series NLFC453232

### FEATURES

- The NLFC series features magnetic shielding and is recommended for power supply line applications.
- 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 330 $\mu$ H, all of the products are available in the E-6 series.
- It is a product conforming to RoHS directive.

### APPLICATIONS

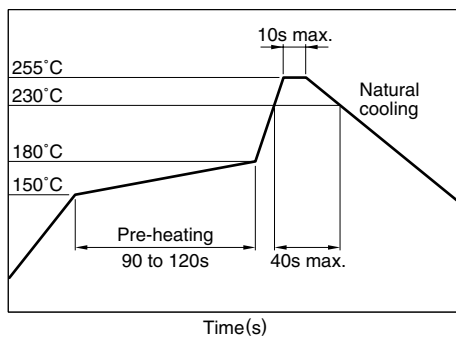
- Electronic equipment used in communication infrastructures including xDSL and mobile base stations.
- Audio-visual equipment including TVs and VCRs.
- Other electronic equipment including HDDs and ODDs.

### SPECIFICATIONS

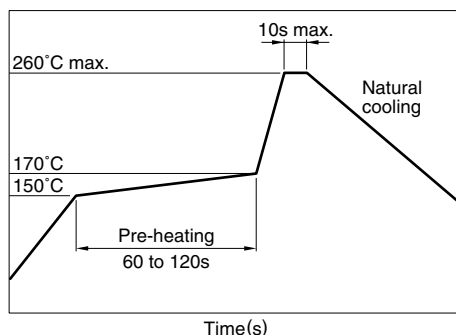
|                             |                                                    |
|-----------------------------|----------------------------------------------------|
| Operating temperature range | -40 to +105°C<br>[Including self-temperature rise] |
| Storage temperature range   | -40 to +105°C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

### 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

|      |        |     |     |     |     |    |
|------|--------|-----|-----|-----|-----|----|
| NLFC | 453232 | T-  | 2R2 | M   | -   | PF |
| (1)  | (2)    | (3) | (4) | (5) | (6) |    |

(1)Series name

(2)Dimensions

|        |                       |
|--------|-----------------------|
| 453232 | 4.5×3.2×3.2mm (L×W×T) |
|--------|-----------------------|

(3)Packaging style

|   |               |
|---|---------------|
| T | Taping (reel) |
|---|---------------|

(4)Inductance value

|     |             |
|-----|-------------|
| 1R0 | 1 $\mu$ H   |
| 100 | 10 $\mu$ H  |
| 101 | 100 $\mu$ H |

(5)Inductance tolerance

|   |      |
|---|------|
| K | ±10% |
| M | ±20% |

(6) Lead-free compatible product

|    |                              |
|----|------------------------------|
| PF | Lead-free compatible product |
|----|------------------------------|

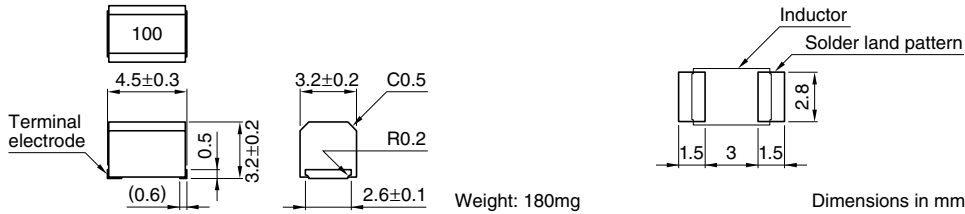
### PACKAGING STYLE AND QUANTITIES

|                 |                 |
|-----------------|-----------------|
| 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

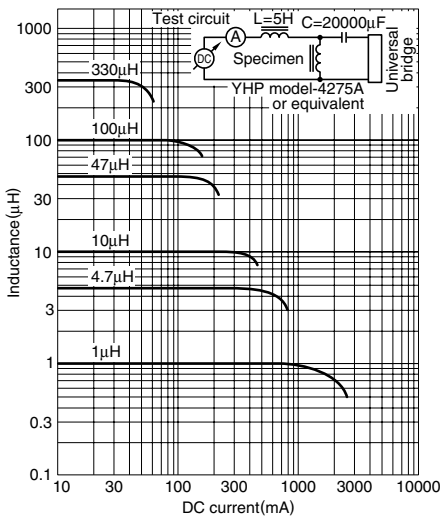
| Inductance (μH) | Inductance tolerance | Q ref. | Test frequency L, Q (MHz) | Self-resonant frequency (MHz)min. | DC resistance (Ω)±30% | Rated current* (mA)max. | Part No.            |
|-----------------|----------------------|--------|---------------------------|-----------------------------------|-----------------------|-------------------------|---------------------|
| 1               | ±20%                 | 10     | 7.96                      | 200                               | 0.05                  | 800                     | NLFC453232T-1R0M-PF |
| 1.5             | ±20%                 | 10     | 7.96                      | 130                               | 0.06                  | 700                     | NLFC453232T-1R5M-PF |
| 2.2             | ±20%                 | 10     | 7.96                      | 80                                | 0.07                  | 600                     | NLFC453232T-2R2M-PF |
| 3.3             | ±20%                 | 10     | 7.96                      | 45                                | 0.09                  | 460                     | NLFC453232T-3R3M-PF |
| 4.7             | ±20%                 | 10     | 7.96                      | 35                                | 0.1                   | 400                     | NLFC453232T-4R7M-PF |
| 6.8             | ±20%                 | 10     | 7.96                      | 28                                | 0.14                  | 300                     | NLFC453232T-6R8M-PF |
| 10              | ±10%                 | 10     | 2.52                      | 22                                | 0.21                  | 250                     | NLFC453232T-100K-PF |
| 15              | ±10%                 | 10     | 2.52                      | 20                                | 0.3                   | 200                     | NLFC453232T-150K-PF |
| 22              | ±10%                 | 10     | 2.52                      | 18                                | 0.46                  | 170                     | NLFC453232T-220K-PF |
| 33              | ±10%                 | 10     | 2.52                      | 14                                | 0.63                  | 140                     | NLFC453232T-330K-PF |
| 47              | ±10%                 | 10     | 2.52                      | 11.5                              | 0.85                  | 120                     | NLFC453232T-470K-PF |
| 68              | ±10%                 | 10     | 2.52                      | 10                                | 1.2                   | 100                     | NLFC453232T-680K-PF |
| 100             | ±10%                 | 10     | 0.796                     | 8                                 | 1.7                   | 90                      | NLFC453232T-101K-PF |
| 150             | ±10%                 | 10     | 0.796                     | 7                                 | 2.3                   | 65                      | NLFC453232T-151K-PF |
| 220             | ±10%                 | 10     | 0.796                     | 5.5                               | 3.8                   | 55                      | NLFC453232T-221K-PF |
| 330             | ±10%                 | 10     | 0.796                     | 4                                 | 6                     | 45                      | NLFC453232T-331K-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.

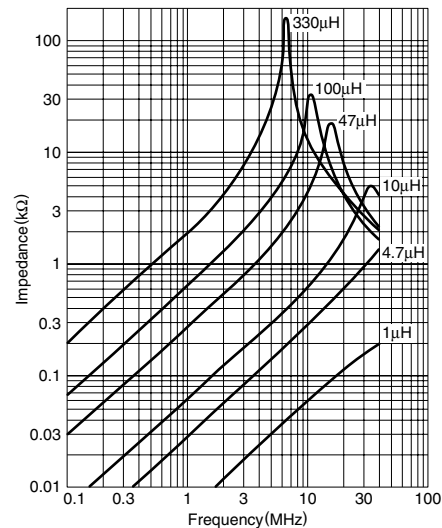
- Test equipment L, Q: YHP4194A IMPEDANCE ANALYZER+YHP16085A+YHP16093B+TF-1, or equivalent  
SRF: HP8753C NETWORK ANALYZER (Z<sub>in</sub>=Z<sub>out</sub>=50Ω), or equivalent  
Rdc: MATSUSHITA VP-2941A DIGITAL MILLIOHM METER, or equivalent

## TYPICAL ELECTRICAL CHARACTERISTICS

### INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS





### IMPEDANCE vs. FREQUENCY CHARACTERISTICS



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