

## Inductors

## NRS6045T680MMGKV



## ■ Features

- Item Summary  
68uH±20%, 0.95A, 6.0x6.0x4.5mm
- Lifecycle Stage  
New PN available
- AEC-Q200 qualified
- Standard packaging quantity (minimum)  
Taping Embossed 1500pcs

## ■ Products characteristics table

|   |   |
|---|---|
| Inductance  | 68 uH ± 20 %                                      |
| Case Size (mm)                                    | 6.0x6.0   |
| Rated Current (max)                               | 0.95 A  |
| Saturation Current (max)                          | 1.1 A (ΔL=30%)                                    |
| Saturation Current (typ)                          | 1.3 A (ΔL=30%)                                    |
| Temperature Rise Current (max)                    | 0.95 A (ΔT=40°C)                                  |
| Temperature Rise Current (typ)                    | 1.1 A (ΔT=40°C)                                   |
| DC Resistance (max)                               | 0.3952 Ω  |
| DC Resistance (typ)                               | 0.304 Ω   |
| LQ Measuring Frequency                            | 100 kHz   |
| Self Resonant Frequency (min)                     | 4 MHz   |
| Operating Temp. Range                             | -40 to +125 °C<br>(Including-self-generated heat) |
| Temperature characteristic<br>(Inductance change) | ± 20 %  |
| RoHS Compliance (10 subst.)                       | Yes   |
| REACH Compliance (223 subst.)                     | Yes   |
| Halogen Free                                      | Yes   |
| Soldering   | Reflow  |

## ■ External Dimensions

|              |              |
|--------------|--------------|
| Dimension L  | 6.0 ±0.2 mm  |
| Dimension W  | 6.0 ±0.2 mm  |
| Dimension H  | Max 4.5 mm   |
| Dimension e  | 1.35 ±0.2 mm |
| Dimension f  | 4.0 ±0.2 mm  |
| Dimension ΔI | Typ 2.3 mm   |

## ■ Recommended Land Patterns

【推奨ランドパターン】  
実装上の注意  
・実装状態を確認の上ご使用くださいますようお願いいたします。  
・本製品のはんだ付けはリフローはんだ工法に限ります。

【Recommended Land Patterns】  
Surface Mounting  
・Mounting and soldering conditions should be checked beforehand.  
・Applicable soldering process to these products is reflow soldering only.



SMD Power Inductors for Industrial / Automotive Comfort and Safety Applications  
(NR series S type)(AEC-Q200 qualified)

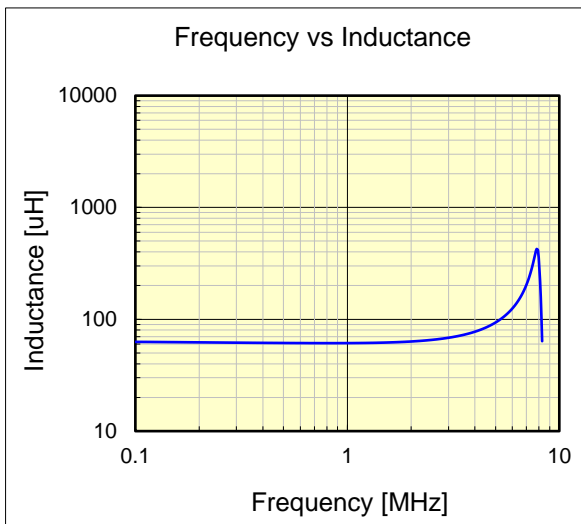
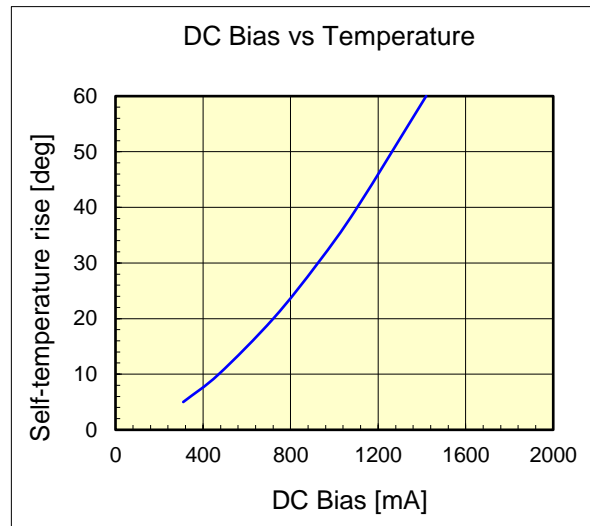
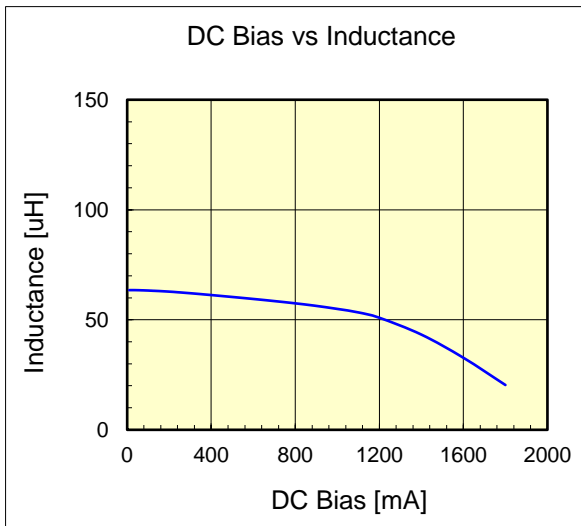
**NRS6045T680MMGKV**



**AEC-Q200 qualified**

| Dimension | unit : mm   | unit : inch       |
|-----------|-------------|-------------------|
| Length :  | 6.0 +/- 0.2 | (0.236 +/- 0.008) |
| Width :   | 6.0 +/- 0.2 | (0.236 +/- 0.008) |
| Height :  | 4.5 max.    | (0.177 max.)      |

|  |                |                          |
|--|----------------|--------------------------|
| Inductance :   | 68             | uH (test freq at 0.1MHz) |
| DC Resistance :  | 0.304 / 0.3952 | ohm (typ / max)          |
| Saturation Current :   | 1,100          | mA (max)                 |
| Temp. rise Current :   | 950            | mA (max)                 |
| Saturation current typical : 30% reduction from initial L value. |                |                          |
| Temp rise Current typical : Temperature will rise by 40 deg C    |                |                          |



The data is reference only. Electrical characteristics vary depending on environment or measurement condition. TAIYO YUDEN reserves the right to make change to the data at any time without notice. Before making final selection, please check product specification.

The products are tested based on the test conditions and methods defined in AEC-Q200. Please consult with TAIYO YUDEN for the details of the product specification and AEC-Q200 test results, etc., and please review and approve TAIYO YUDEN's product specification before ordering.

Please read this notice before using the TAIYO YUDEN products.



## REMINDERS

- Please conduct validation and verification of our products in actual condition of mounting and operating environment before using our products.
- The product listed in this spec sheet is intended for use in general electronic equipment (e.g., AV equipment, OA equipment, home electric appliances, office equipment, information and communication equipment including, without limitation, mobile phone, and PC). Please be sure to contact TAIYO YUDEN for further information before using the products for any equipment which may directly cause loss of human life or bodily injury (e.g., transportation equipment including, without limitation, automotive powertrain control system, train control system, and ship control system, traffic signal equipment, disaster prevention equipment, medical equipment classified as Class I, II or III by IMDRF, highly public information network equipment including, without limitation, telephone exchange, and base station).  
Please do not incorporate our products into any equipment requiring high levels of safety and/or reliability (e.g., aerospace equipment, aviation equipment, medical equipment classified as Class IV by IMDRF, nuclear control equipment, undersea equipment, military equipment).  
When our products are used even for high safety and/or reliability-required devices or circuits of general electronic equipment, it is strongly recommended to perform a thorough safety evaluation prior to use of our products and to install a protection circuit as necessary.  
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