

# NCC Series

## Surface Mount Common Mode Chokes



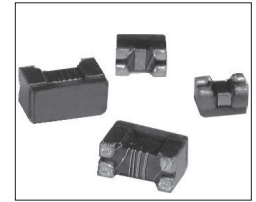
### FEATURES

- HIGH COMMON MODE IMPEDANCE AT HIGH FREQUENCY
- LOW PROFILE SURFACE MOUNT PACKAGE
- SHIELDED PROVIDING EXCELLENT NOISE SUPPRESSION
- SUITABLE FOR HIGH SPEED DIGITAL EQUIPMENT (USB/IEEE)
- Pb-FREE CONSTRUCTION
- BOTH FLOW AND REFLOW SOLDERING APPLICABLE

**RoHS  
Compliant**

includes all homogeneous materials

\*See Part Number System for Details



### CHARACTERISTICS

| Case Size                 | 0805                                                                | 1206            | 1210            | 1812            |
|---------------------------|---------------------------------------------------------------------|-----------------|-----------------|-----------------|
| Impedance Range           | 30~ 370 Ohms                                                        | 30 ~ 2,200 Ohms | 90 ~ 1,000 Ohms | 90 ~ 2,800 Ohms |
| Available Tolerance       | ±25%                                                                |                 |                 |                 |
| Temperature Range         | -40°C ~ +125°C                                                      |                 |                 |                 |
| Withstanding voltage      | 125VDC 30 seconds                                                   |                 |                 |                 |
| Insulation Resistance     | 10MΩ after application 50V for 30 seconds                           |                 |                 |                 |
| Resistance to Solder Heat | 260°C ±5°C for 10 seconds                                           |                 |                 |                 |
| Temperature Cycling       | ±25% of initial value after 10 cycles<br>(-40°C/+20°C/+125°C/+20°C) |                 |                 |                 |

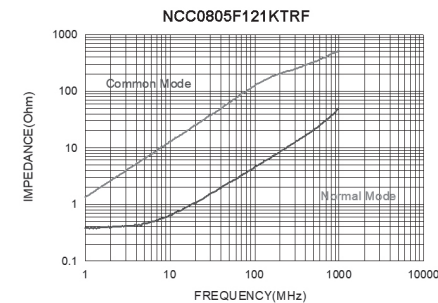
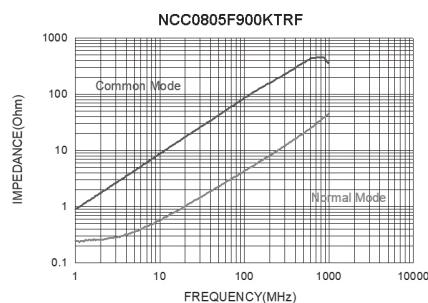
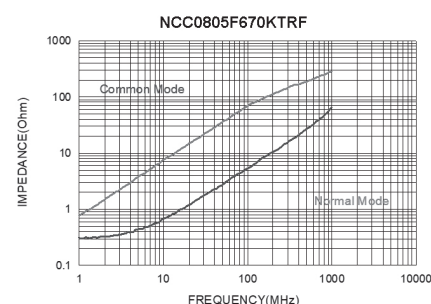
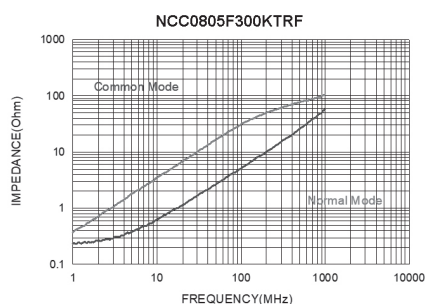
### PART NUMBER SYSTEM

NCC 0805 F 300 K TR E

Series | Case Code | Material (Ferrite) | Impedance value (ohms) | Current Rating | Tape & Reel | Pb-free/RoHS Compliant

### NCC0805 SPECIFICATIONS

| NIC Part Number | Impedance (Ω) | Test Frequency (MHz) | DC Resistance (Ω max.) | DC Current (mA max.) | Voltage Rating (Vdc) | Withstanding Voltage (Vdc) | Insulation Resistance (Ω) |
|-----------------|---------------|----------------------|------------------------|----------------------|----------------------|----------------------------|---------------------------|
| NCC0805F300KTRF | 30 ±25%       | 100                  | 0.20                   | 400                  | 50                   | 125                        | 10Meg                     |
| NCC0805F670KTRF | 67 ±25%       |                      | 0.25                   | 400                  |                      |                            |                           |
| NCC0805F900KTRF | 90 ±25%       |                      | 0.30                   | 400                  |                      |                            |                           |
| NCC0805F121KTRF | 120 ±25%      |                      | 0.30                   | 400                  |                      |                            |                           |
| NCC0805F161JTRF | 160 ±25%      |                      | 0.35                   | 350                  |                      |                            |                           |
| NCC0805F181JTRF | 180 ±25%      |                      | 0.35                   | 350                  |                      |                            |                           |
| NCC0805F221HTRF | 220 ±25%      |                      | 0.40                   | 300                  |                      |                            |                           |
| NCC0805F221MTRF | 220 ±25%      |                      | 0.40                   | 600                  |                      |                            |                           |
| NCC0805F261HTRF | 260 ±25%      |                      | 0.40                   | 300                  |                      |                            |                           |
| NCC0805F301HTRF | 300 ±25%      |                      | 0.45                   | 300                  |                      |                            |                           |
| NCC0805F361FTRF | 360 ±25%      |                      | 0.50                   | 100                  |                      |                            |                           |
| NCC0805F371FTRF | 370 ±25%      |                      | 0.50                   | 100                  |                      |                            |                           |



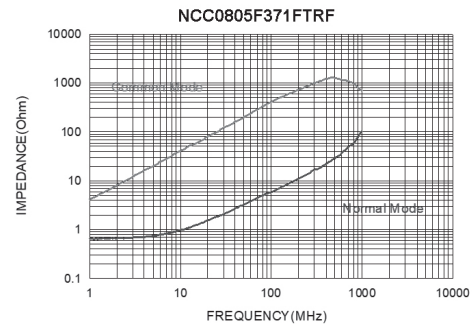
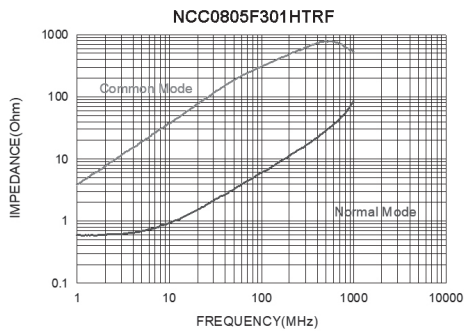
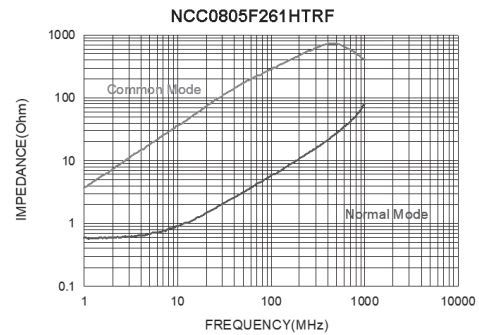
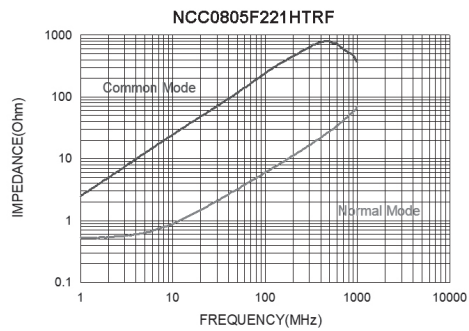
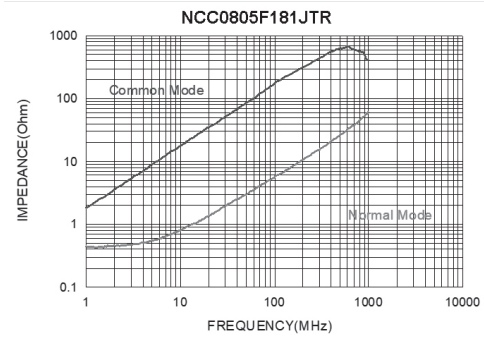
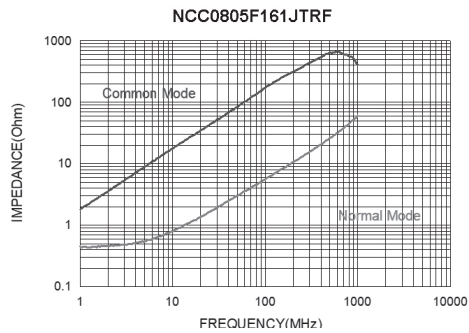
Performance Passives By Design

NIC Components Corp.  
100 Baylis Road, Melville, NY 11747

Page 1

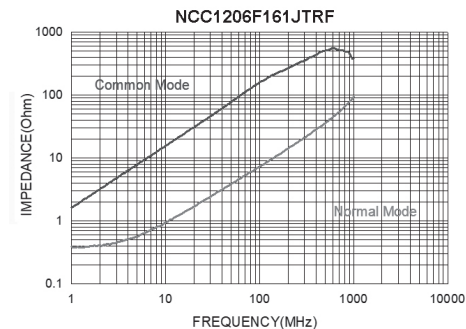
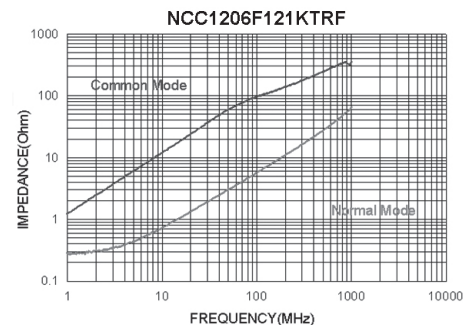
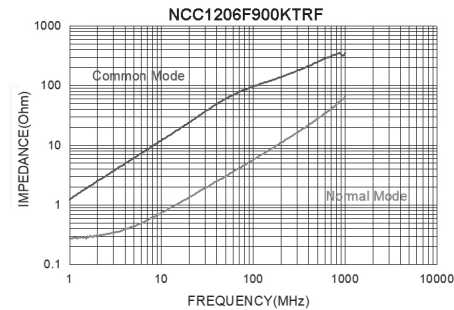
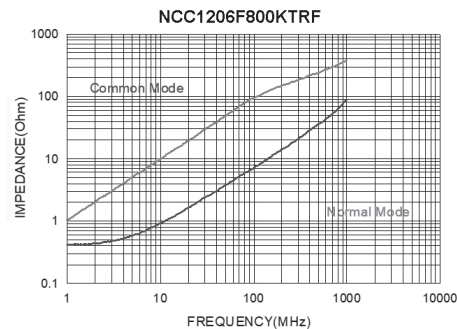
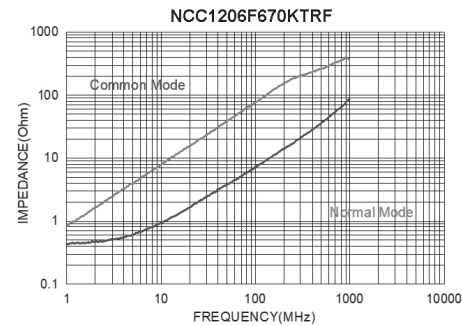
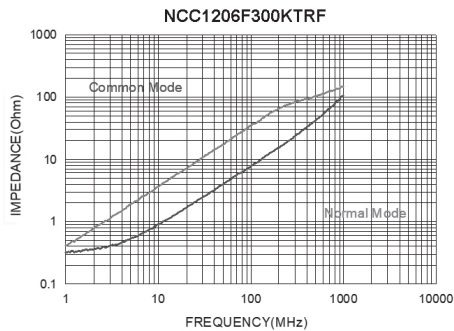
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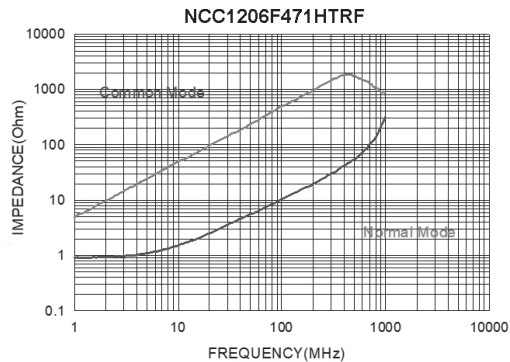
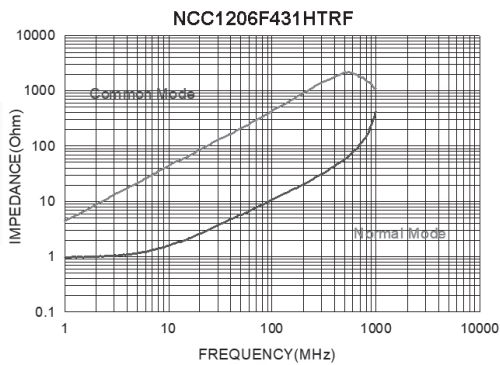
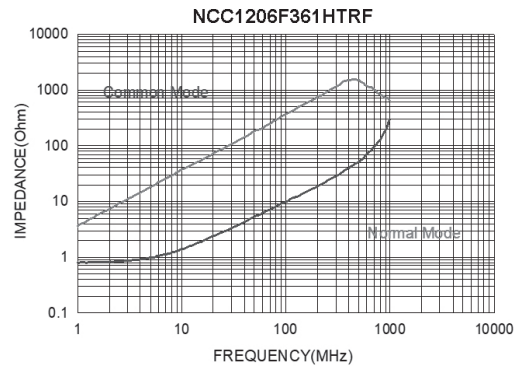
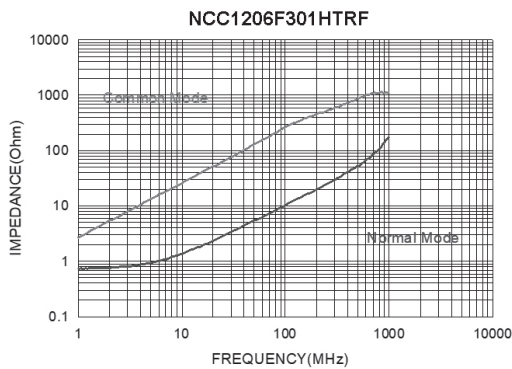
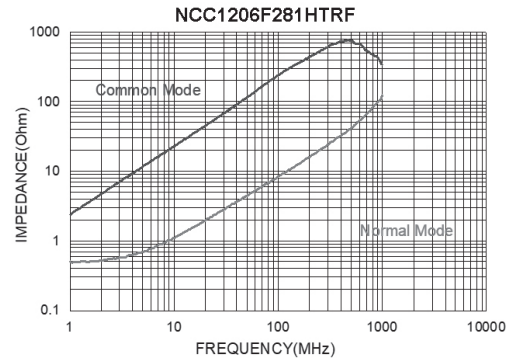
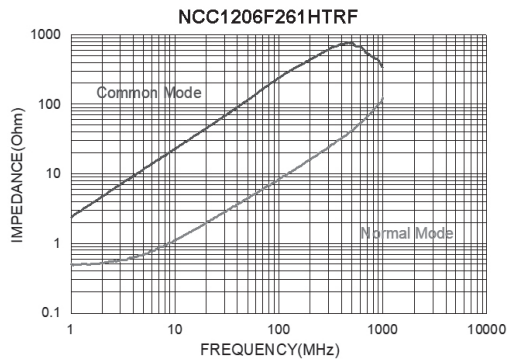
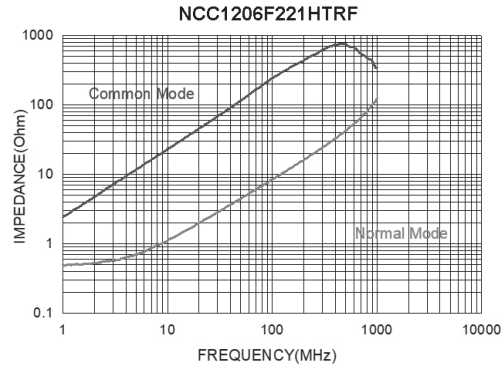
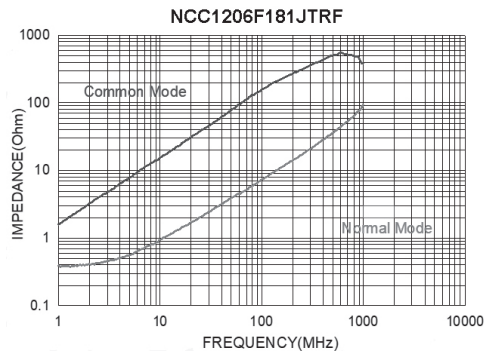
1st Edition 03-20-2023. Specification subject to change without notice. Please check web site for latest information.

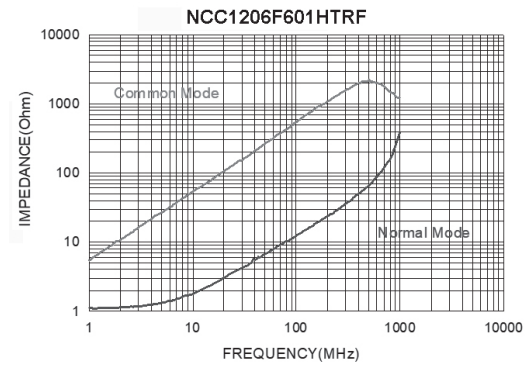
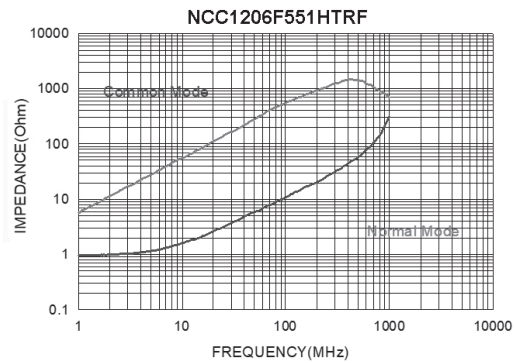


## NCC1206 SPECIFICATIONS

| NIC Part Number | Impedance ( $\Omega$ ) | Test Frequency (MHz) | DC Resistance ( $\Omega$ max.) | DC Current (mA max.) | Voltage Rating (Vdc) | Withstanding Voltage (Vdc) | Insulation Resistance ( $\Omega$ ) |
|-----------------|------------------------|----------------------|--------------------------------|----------------------|----------------------|----------------------------|------------------------------------|
| NCC1206F300KTRF | 30 $\pm$ 25%           | 100                  | 0.20                           | 400                  | 50                   | 125                        | 10Meg                              |
| NCC1206F670KTRF | 67 $\pm$ 25%           |                      | 0.30                           | 400                  |                      |                            |                                    |
| NCC1206F800KTRF | 80 $\pm$ 25%           |                      | 0.30                           | 400                  |                      |                            |                                    |
| NCC1206F900KTRF | 90 $\pm$ 25%           |                      | 0.30                           | 400                  |                      |                            |                                    |
| NCC1206F121KTRF | 120 $\pm$ 25%          |                      | 0.30                           | 400                  |                      |                            |                                    |
| NCC1206F161JTRF | 160 $\pm$ 25%          |                      | 0.35                           | 350                  |                      |                            |                                    |
| NCC1206F181JTRF | 180 $\pm$ 25%          |                      | 0.35                           | 350                  |                      |                            |                                    |
| NCC1206F221HTRF | 220 $\pm$ 25%          |                      | 0.45                           | 300                  |                      |                            |                                    |
| NCC1206F261HTRF | 260 $\pm$ 25%          |                      | 0.45                           | 300                  |                      |                            |                                    |
| NCC1206F281HTRF | 280 $\pm$ 25%          |                      | 0.45                           | 300                  |                      |                            |                                    |
| NCC1206F301HTRF | 300 $\pm$ 25%          |                      | 0.50                           | 300                  |                      |                            |                                    |
| NCC1206F361HTRF | 360 $\pm$ 25%          |                      | 0.60                           | 300                  |                      |                            |                                    |
| NCC1206F431HTRF | 430 $\pm$ 25%          |                      | 0.60                           | 300                  |                      |                            |                                    |
| NCC1206F471HTRF | 470 $\pm$ 25%          |                      | 0.70                           | 300                  |                      |                            |                                    |
| NCC1206F551HTRF | 550 $\pm$ 25%          |                      | 0.75                           | 300                  |                      |                            |                                    |
| NCC1206F601HTRF | 600 $\pm$ 25%          |                      | 0.80                           | 300                  |                      |                            |                                    |
| NCC1206F222GTRF | 2200 $\pm$ 25%         |                      | 1.20                           | 200                  |                      |                            |                                    |

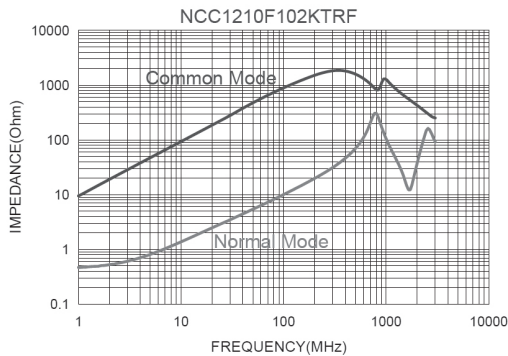
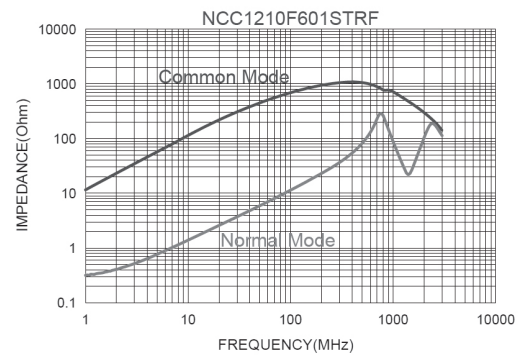
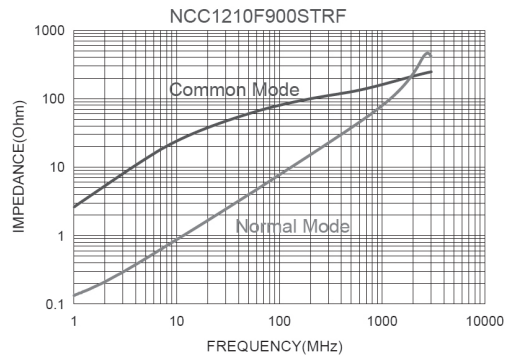






### NCC1210 SPECIFICATIONS

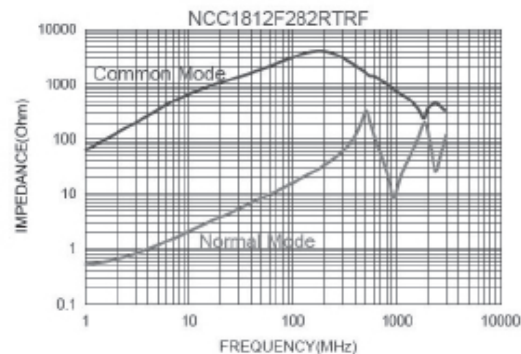
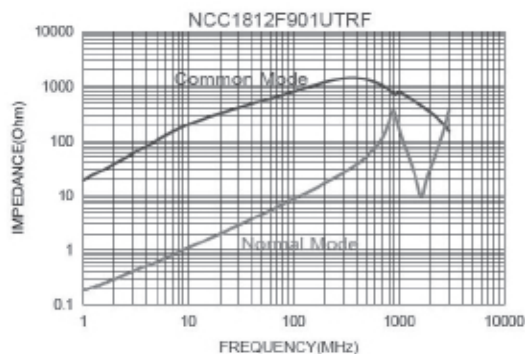
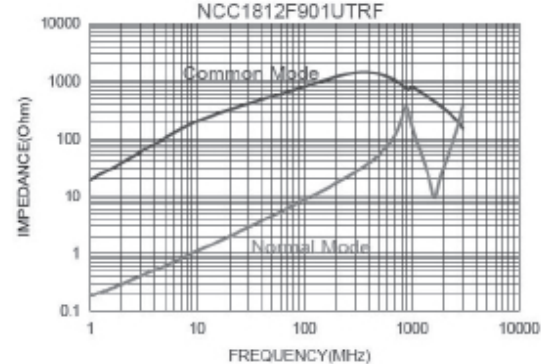
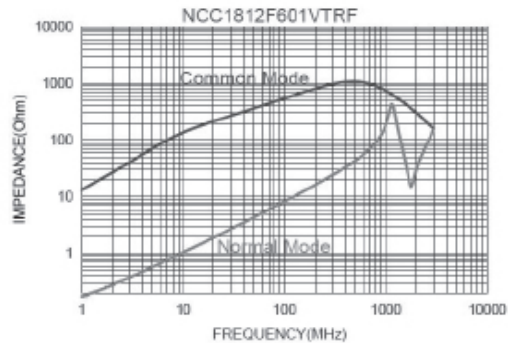
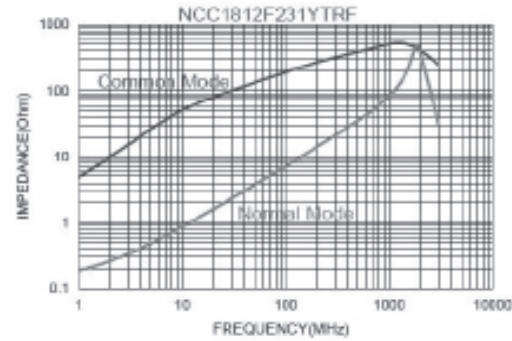
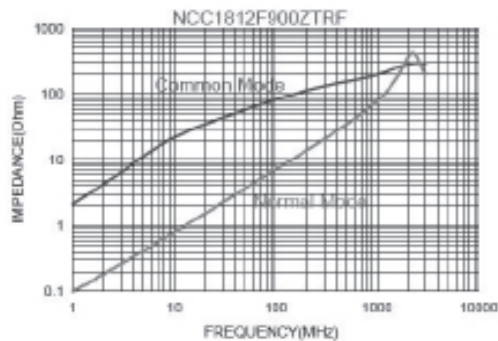
| NIC Part Number | Impedance ( $\Omega$ ) | Test Frequency (MHz) | DC Resistance ( $\Omega$ max.) | DC Current (mA max.) | Voltage Rating (Vdc) | Withstanding Voltage (Vdc) | Insulation Resistance ( $\Omega$ ) |
|-----------------|------------------------|----------------------|--------------------------------|----------------------|----------------------|----------------------------|------------------------------------|
| NCC1210F900STRF | 90 $\pm$ 25%           | 100                  | 0.05                           | 1000                 | 50                   | 125                        | 10Meg                              |
| NCC1210F601STRF | 600 $\pm$ 25%          |                      | 0.20                           | 1000                 |                      |                            |                                    |
| NCC1210F102KTRF | 1000 $\pm$ 25%         |                      | 0.30                           | 400                  |                      |                            |                                    |





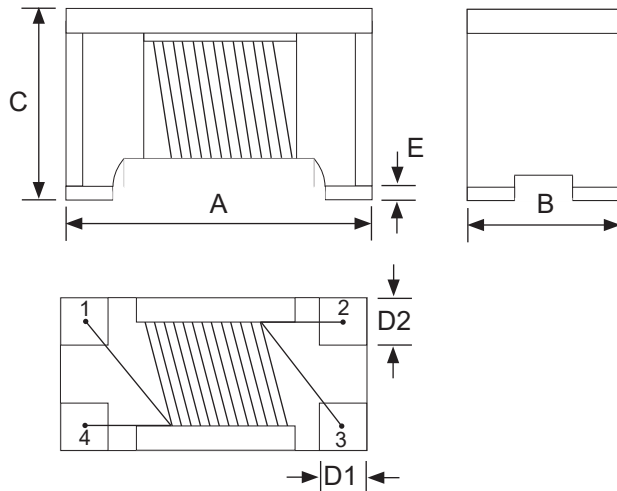
## NCC1812 SPECIFICATIONS

| NIC Part Number | Impedance ( $\Omega$ ) | Test Frequency (MHz) | DC Resistance ( $\Omega$ max.) | DC Current (mA max.) | Voltage Rating (Vdc) | Withstanding Voltage (Vdc) | Insulation Resistance ( $\Omega$ ) |
|-----------------|------------------------|----------------------|--------------------------------|----------------------|----------------------|----------------------------|------------------------------------|
| NCC1812F900ZTRF | 90 $\pm$ 25%           | 100                  | 0.05                           | 4000                 | 50                   | 125                        | 10Meg                              |
| NCC1812F231YTRF | 230 $\pm$ 25%          |                      | 0.05                           | 3500                 |                      |                            |                                    |
| NCC1812F421XTRF | 420 $\pm$ 25%          |                      | 0.055                          | 3200                 |                      |                            |                                    |
| NCC1812F601VTRF | 600 $\pm$ 25%          |                      | 0.06                           | 2500                 |                      |                            |                                    |
| NCC1812F901UTRF | 900 $\pm$ 25%          |                      | 0.07                           | 2300                 |                      |                            |                                    |
| NCC1812F142TTRF | 1400 $\pm$ 25%         |                      | 0.10                           | 2000                 |                      |                            |                                    |
| NCC1812F282RTRF | 2800 $\pm$ 25%         |                      | 0.35                           | 900                  |                      |                            |                                    |

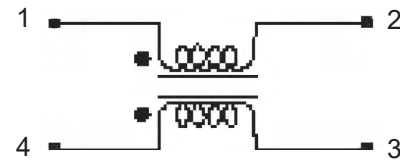


**CASE DIMENSIONS (mm)**

| Type    | A ±0.2 | B ±0.2 | C ±0.2 | D1 ±0.1    | D2 ±0.1    | E ±0.1     |
|---------|--------|--------|--------|------------|------------|------------|
| NCC0805 | 2.0    | 1.2    | 1.2    | 0.50       | 0.51       | 0.15       |
| NCC1206 | 3.2    | 1.6    | 2.0    | 0.50       | 0.50       | 0.15       |
| NCC1210 | 3.2    | 2.5    | 2.2    | 0.80       | 0.90       | 0.15       |
| NCC1812 | 4.5    | 3.2    | 2.8    | 0.90 ±0.15 | 1.05 ±0.15 | 0.15 ±0.10 |

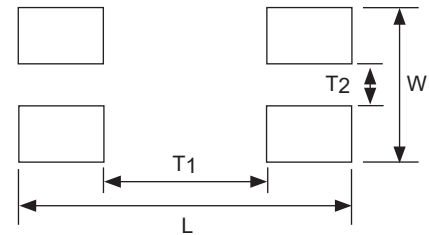


**CIRCUIT SCHEMATIC**

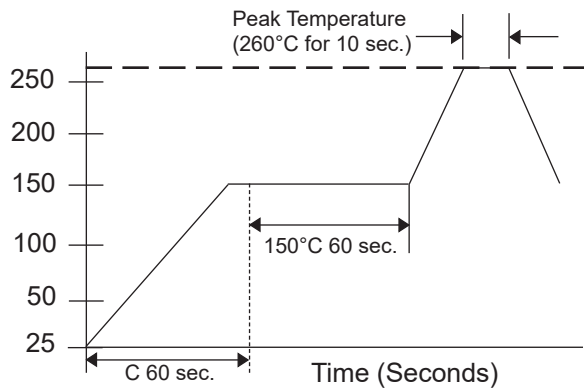


**LAND PATTERN DIMENSIONS (mm)**

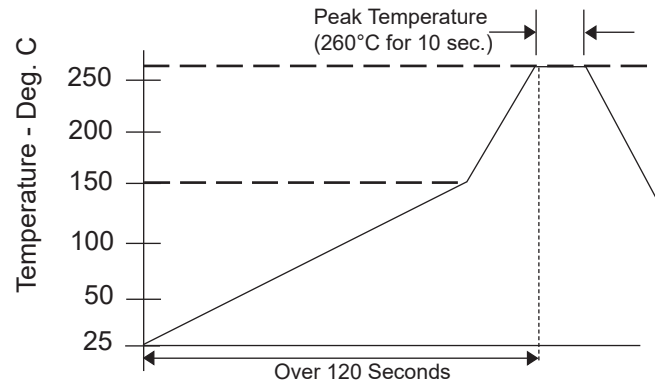
| Case Size | L    | W    | T1   | T2   |
|-----------|------|------|------|------|
| 0805      | 2.60 | 1.25 | 1.10 | 0.45 |
| 1206      | 3.70 | 1.60 | 1.90 | 0.40 |
| 1210      | 4.40 | 3.50 | 1.60 | 0.60 |
| 1812      | 5.00 | 3.60 | 3.00 | 1.20 |



**RECOMMENDED REFLOW SOLDERING PROFILE**



**RECOMMENDED FLOW SOLDERING PROFILE**



| Series  | A ± 0.1 | B ± 0.1 | E ± 0.1 | F ± 0.05 | P <sub>0</sub> ± 0.1 | P <sub>1</sub> ± 0.1 | Dφ ± 0.1 | W ± 0.1 | t <sub>1</sub> ± 0.05 | t <sub>2</sub> ± 0.1 | Reel Quantity |
|---------|---------|---------|---------|----------|----------------------|----------------------|----------|---------|-----------------------|----------------------|---------------|
| NCC0805 | 1.50    | 2.35    | 1.75    | 3.5      | 4.0                  | 4.0                  | 1.5      | 8.0     | 0.22                  | 1.45                 | 2,000         |
| NCC1206 | 1.88    | 3.50    |         |          |                      |                      |          |         |                       | 2.10                 |               |
| NCC1210 | 2.88    | 3.7     |         |          |                      |                      |          |         | 0.26                  | 2.5                  | 500           |
| NCC1812 | 3.6     | 4.9     |         | 5.5      | 8.0                  | 8.0                  |          | 12.0    |                       | 3.0                  |               |

