



**THE DATASHEET OF
AISC-0603-R027J-T**



CERAMIC WIRE WOUND INDUCTORS

AISC-0603

RoHS/RoHS II Compliant



1.80 x 1.12 x 1.02mm

FEATURES:

- Ceramic construction assures the utmost thermal stability & high SRF
- Exceptionally high Q compared to non-wirewound inductors, especially at high frequencies
- Inductance options from 1.8nH to 560nH
- Epoxy coating protects wound wire

APPLICATIONS:

- Widely applied in VCO, SAW circuit for GSM, and CDMA communications

ELECTRICAL SPECIFICATIONS:

| Part Number AISC-0603- Inductance Code | Inductance | Tolerance | Min. Quality Factor | L/Q Test Freq. | Max. DC Resistance | Max. Rated Current | Min. Self-resonant Frequency |
|--|------------|------------------|---------------------------|-------------------|-----------------------|-----------------------|---------------------------------|
| Units | nH | - | - | MHz | Ω | mA | MHz |
| Symbol | L | - | Q | Freq. | DCR | I _r | S.R.F |
| AISC-0603-R0018 | 1.8 | C, S, D J, K | 18 | 250 | 0.043 | 1000 | > 6000 |
| AISC-0603-R0027 | 2.7 | C, S, D J, K | 25 | 250 | 0.043 | 1000 | > 6000 |
| AISC-0603-R0033 | 3.3 | C, S, D J, K | 25 | 250 | 0.059 | 850 | > 6000 |
| AISC-0603-R0036 | 3.6 | C, S, D J, K | 25 | 250 | 0.059 | 850 | > 6000 |
| AISC-0603-R0039 | 3.9 | C, S, D J, K | 25 | 250 | 0.059 | 850 | > 6000 |
| AISC-0603-R0043 | 4.3 | C, S, D J, K | 25 | 250 | 0.059 | 850 | > 6000 |
| AISC-0603-R0047 | 4.7 | C, S, D J, K | 25 | 250 | 0.065 | 800 | > 6000 |
| AISC-0603-R0051 | 5.1 | C, S, D J, K | 21 | 250 | 0.130 | 600 | > 6000 |
| AISC-0603-R0062 | 6.2 | C, S, D J, K | 29 | 250 | 0.095 | 700 | > 6000 |
| AISC-0603-R0068 | 6.8 | C, S, D, G, J, K | 29 | 250 | 0.095 | 700 | > 6000 |
| AISC-0603-R0075 | 7.5 | C, S, D, G, J, K | 33 | 250 | 0.095 | 700 | > 6000 |
| AISC-0603-R0082 | 8.2 | C, S, D, G, J, K | 31 | 250 | 0.095 | 700 | > 6000 |
| AISC-0603-R0087 | 8.7 | C, S, D, G, J, K | 31 | 250 | 0.095 | 700 | > 6000 |
| AISC-0603-R0091 | 9.1 | C, S, D, G, J, K | 30 | 250 | 0.120 | 620 | 6000 |
| AISC-0603-R0095 | 9.5 | C, S, D, G, J, K | 26 | 250 | 0.160 | 540 | 6000 |
| AISC-0603-R010 | 10 | C, S, D, G, J, K | 30 | 250 | 0.130 | 600 | 6000 |
| AISC-0603-R011 | 11 | C, S, D, G, J, K | 35 | 250 | 0.130 | 600 | 6000 |
| AISC-0603-R012 | 12 | C, S, D, G, J, K | 35 | 250 | 0.130 | 600 | 6000 |
| AISC-0603-R013 | 13 | C, S, D, G, J, K | 35 | 250 | 0.130 | 600 | 6000 |
| AISC-0603-R015 | 15 | C, S, D, G, J, K | 37 | 250 | 0.150 | 550 | 6000 |
| AISC-0603-R016 | 16 | C, S, D, G, J, K | 37 | 250 | 0.150 | 550 | 5500 |
| AISC-0603-R018 | 18 | C, S, D, G, J, K | 37 | 250 | 0.150 | 550 | 5500 |
| AISC-0603-R020 | 20 | C, S, D, G, J, K | 37 | 250 | 0.150 | 550 | 4900 |
| AISC-0603-R022 | 22 | C, S, D, G, J, K | 38 | 250 | 0.190 | 490 | 4600 |
| AISC-0603-R023 | 23 | C, S, D, G, J, K | 40 | 250 | 0.190 | 490 | 3800 |
| AISC-0603-R024 | 24 | C, S, D, G, J, K | 40 | 250 | 0.190 | 490 | 3800 |
| AISC-0603-R025 | 25 | C, S, D, G, J, K | 40 | 250 | 0.190 | 490 | 3700 |
| AISC-0603-R027 | 27 | C, S, D, G, J, K | 38 | 250 | 0.190 | 490 | 3700 |
| AISC-0603-R030 | 30 | C, S, D, G, J, K | 38 | 250 | 0.210 | 470 | 3300 |
| AISC-0603-R033 | 33 | C, S, D, G, J, K | 40 | 250 | 0.210 | 470 | 3200 |
| AISC-0603-R036 | 36 | C, S, D, G, J, K | 40 | 250 | 0.220 | 460 | 2900 |
| AISC-0603-R039 | 39 | C, S, D, G, J, K | 40 | 250 | 0.220 | 460 | 2800 |
| AISC-0603-R043 | 43 | C, S, D, G, J, K | 40 | 250 | 0.270 | 400 | 2700 |
| AISC-0603-R047 | 47 | C, S, D, G, J, K | 36 | 200 | 0.270 | 400 | 2600 |
| AISC-0603-R051 | 51 | C, S, D, G, J, K | 35 | 200 | 0.300 | 390 | 2400 |
| AISC-0603-R056 | 56 | C, S, D, G, J, K | 38 | 200 | 0.350 | 360 | 2400 |
| AISC-0603-R062 | 62 | C, S, D, G, J, K | 36 | 200 | 0.380 | 350 | 2300 |



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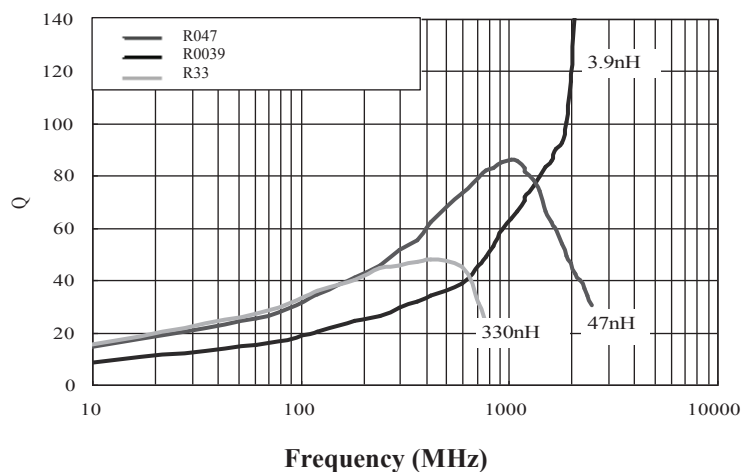
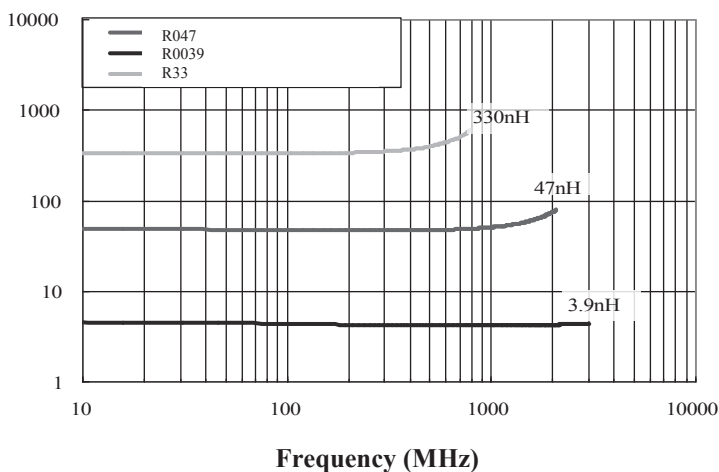
ELECTRICAL SPECIFICATIONS (cont'd):

| Part Number AISC-0603- Inductance Code | Inductance | Tolerance | Min. Quality Factor | L/Q Test Freq. | Max. DC Resistance | Max. Rated Current | Min. Self-resonant Frequency |
|--|------------|------------------|---------------------------|-------------------|-----------------------|-----------------------|---------------------------------|
| Units | nH | - | - | MHz | Ω | mA | MHz |
| Symbol | L | - | Q | Freq. | DCR | Ir | S.R.F |
| AISC-0603-R068 | 68 | C, S, D, G, J, K | 36 | 200 | 0.380 | 350 | 2200 |
| AISC-0603-R072 | 72 | C, S, D, G, J, K | 34 | 150 | 0.430 | 320 | 2100 |
| AISC-0603-R082 | 82 | C, S, D, G, J, K | 34 | 150 | 0.500 | 300 | 2000 |
| AISC-0603-R091 | 91 | C, S, D, G, J, K | 34 | 150 | 0.520 | 300 | 1900 |
| AISC-0603-R10 | 100 | C, S, D, G, J, K | 31 | 150 | 0.660 | 260 | 1800 |
| AISC-0603-R11 | 110 | C, S, D, G, J, K | 32 | 150 | 0.730 | 250 | 1700 |
| AISC-0603-R12 | 120 | C, S, D, G, J, K | 32 | 150 | 0.750 | 240 | 1600 |
| AISC-0603-R15 | 150 | C, S, D, G, J, K | 32 | 150 | 1.120 | 200 | 1400 |
| AISC-0603-R16 | 160 | C, S, D, G, J, K | 32 | 150 | 1.120 | 200 | 1400 |
| AISC-0603-R18 | 180 | C, S, D, G, J, K | 25 | 100 | 1.380 | 180 | 1300 |
| AISC-0603-R20 | 200 | C, S, D, G, J, K | 25 | 100 | 1.900 | 150 | 1250 |
| AISC-0603-R22 | 220 | C, S, D, G, J, K | 25 | 100 | 2.100 | 140 | 1200 |
| AISC-0603-R25 | 250 | C, S, D, G, J, K | 25 | 100 | 2.800 | 120 | 1100 |
| AISC-0603-R27 | 270 | C, S, D, G, J, K | 26 | 100 | 3.000 | 120 | 960 |
| AISC-0603-R33 | 330 | C, S, D, G, J, K | 26 | 100 | 4.200 | 100 | 800 |
| AISC-0603-R39 | 390 | C, S, D, G, J, K | 27 | 100 | 4.500 | 100 | 800 |
| AISC-0603-R42 | 420 | C, S, D, G, J, K | 27 | 100 | 5.400 | 90 | 800 |
| AISC-0603-R47 | 470 | C, S, D, G, J, K | 27 | 100 | 5.700 | 90 | 700 |
| AISC-0603-R56 | 560 | C, S, D, G, J, K | 27 | 100 | 8.100 | 70 | 650 |

Definition of Rated Current (Ir): Ir is direct electric current as chip surface temperature rose just 20°C against chip initial surface temperature (Ta)

Operating Temperature: -40°C to +125°C

Storage Temperature: -10°C to +40°C, 70% RH max.



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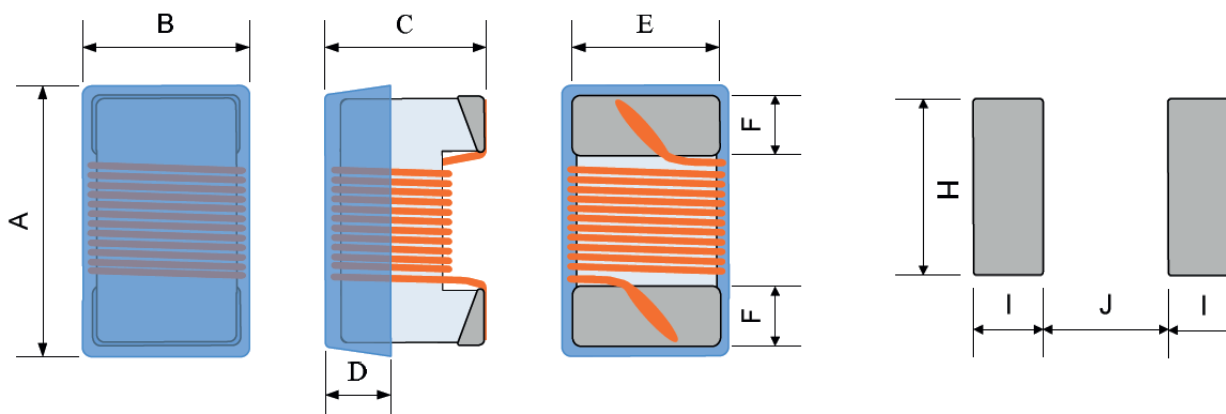
1.80 x 1.12 x 1.02mm

OPTIONS AND PART IDENTIFICATION:

AISC-0603- -

| Inductance Code | Tolerance Code | Packaging |
|---------------------------|-----------------------|---------------|
| Please refer to the Table | C: $\pm 0.2\text{nH}$ | T: 3kpcs/reel |
| | S: $\pm 0.3\text{nH}$ | |
| | D: $\pm 0.5\text{nH}$ | |
| | G: $\pm 2\%$ | |
| | J: $\pm 5\%$ | |
| | K: $\pm 10\%$ | |

MECHANICAL DIMENSIONS:



| A MAX. | B MAX. | C MAX. | D REF. | E REF. | F REF. | H REF. | I REF. | J REF. |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1.8 | 1.12 | 1.02 | 0.38 | 0.80 | 0.30 | 1.02 | 0.64 | 0.64 |

Dimension: mm

MATERIALS:



| No. | Components | Material |
|-----|------------|--|
| A | Coating | Ultraviolet epoxy resin |
| B | Core | Ceramic |
| C | Wire | Polyurethane system enameled copper wire |
| D | Electrodes | Ag-Pd with Ni and Au plating |

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PACKING:

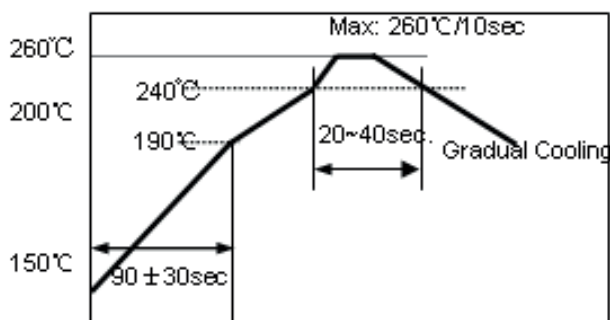
T= tape and reel (3,000pcs/reel)



| A | B | P | K Max | T Max |
|-----------------|-----------------|---------------|-----------------|---------------|
| 1.12 ± 0.05 | 1.80 ± 0.05 | 4.0 ± 0.1 | 0.96 ± 0.05 | 0.3 ± 0.1 |

Dimension: mm

REFLOW PROFILE:



- 1~2 °C/sec. Ramp
- Pre-heating: 150~190°C/90±30 sec.
- Time above 240°C: 20~40sec
- Peak temperature: 260°C Max./10sec.
- Solder paste: Sn/3.0Ag/0.5Cu
- Max.2 times for re-flowing

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