

# SMD Wire-Wound Chip Inductor (Ceramic or Ferrite Core)



AISC-1008(F) SERIES



2.92 x 2.79 x 2.29mm  
RoHS/RoHS II Compliant  
MSL = MSL - 1

## 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 4.7nH to 8200nH

## APPLICATIONS

- Widely applied in VCO, SAW circuit for GSM, & CDMA communications
- Used in hard disk, notebook computers & other electronic equipment

## Electrical Specifications

| Part Number<br>AISC-1008-<br>Inductance Code | Inductance | Tolerance  | Min.<br>Quality<br>Factor | L/Q Test<br>Freq. | Max. DC<br>Resistance | Max. Rated<br>Current | Min. Self-resonant<br>Frequency |
|----------------------------------------------|------------|------------|---------------------------|-------------------|-----------------------|-----------------------|---------------------------------|
| Units                                        | nH         | -          | -                         | MHz               | $\Omega$              | mA                    | MHz                             |
| Symbol                                       | L          | -          | Q                         | Freq.             | DCR                   | Ir                    | S.R.F                           |
| AISC-1008-R0047                              | 4.7        | J, K, M    | 50                        | 50/1500           | 0.11                  | 1000                  | >6000                           |
| AISC-1008-R010                               | 10         | G, J, K, M | 50                        | 50/500            | 0.08                  | 1000                  | 4100                            |
| AISC-1008-R012                               | 12         | G, J, K, M | 50                        | 50/500            | 0.09                  | 1000                  | 3300                            |
| AISC-1008-R015                               | 15         | G, J, K, M | 50                        | 50/500            | 0.13                  | 1000                  | 2500                            |
| AISC-1008-R018                               | 18         | G, J, K, M | 50                        | 50/350            | 0.11                  | 1000                  | 2500                            |
| AISC-1008-R022                               | 22         | G, J, K, M | 55                        | 50/350            | 0.12                  | 1000                  | 2400                            |
| AISC-1008-R027                               | 27         | G, J, K, M | 55                        | 50/350            | 0.13                  | 1000                  | 1600                            |
| AISC-1008-R033                               | 33         | G, J, K, M | 60                        | 50/350            | 0.14                  | 1000                  | 1600                            |
| AISC-1008-R039                               | 39         | G, J, K, M | 50                        | 50/350            | 0.15                  | 1000                  | 1500                            |
| AISC-1008-R047                               | 47         | G, J, K, M | 65                        | 50/350            | 0.16                  | 1000                  | 1500                            |
| AISC-1008-R056                               | 56         | G, J, K, M | 50                        | 50/350            | 0.18                  | 1000                  | 1300                            |
| AISC-1008-R068                               | 68         | G, J, K, M | 65                        | 50/350            | 0.21                  | 1000                  | 1200                            |
| AISC-1008-R082                               | 82         | G, J, K, M | 60                        | 50/350            | 0.22                  | 1000                  | 800                             |
| AISC-1008-R10                                | 100        | G, J, K, M | 60                        | 25/350            | 0.56                  | 650                   | 1000                            |
| AISC-1008-R12                                | 120        | G, J, K, M | 60                        | 25/350            | 0.63                  | 650                   | 950                             |
| AISC-1008-R15                                | 150        | G, J, K, M | 50                        | 25/100            | 0.62                  | 580                   | 800                             |
| AISC-1008-R18                                | 180        | G, J, K, M | 50                        | 25/100            | 0.7                   | 620                   | 750                             |
| AISC-1008-R22                                | 220        | G, J, K, M | 50                        | 25/100            | 0.8                   | 500                   | 630                             |
| AISC-1008-R27                                | 270        | G, J, K, M | 50                        | 25/100            | 0.91                  | 500                   | 600                             |
| AISC-1008-R33                                | 330        | G, J, K, M | 50                        | 25/100            | 1.05                  | 450                   | 530                             |
| AISC-1008-R39                                | 390        | G, J, K, M | 50                        | 25/100            | 1.12                  | 470                   | 480                             |

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|----------------------------------------------|------------|------------|---------------------------|-------------------|-----------------------|-----------------------|---------------------------------|
| Units                                        | nH         | -          | -                         | MHz               | $\Omega$              | mA                    | MHz                             |
| Symbol                                       | L          | -          | Q                         | Freq.             | DCR                   | Ir                    | S.R.F                           |
| AISC-1008-R47                                | 470        | G, J, K, M | 50                        | 25/100            | 1.19                  | 470                   | 450                             |
| AISC-1008-R56                                | 560        | G, J, K, M | 50                        | 25/100            | 1.33                  | 400                   | 390                             |
| AISC-1008-R62                                | 620        | G, J, K, M | 45                        | 25/100            | 1.4                   | 300                   | 375                             |
| AISC-1008-R68                                | 680        | G, J, K, M | 45                        | 25/100            | 1.47                  | 400                   | 360                             |
| AISC-1008-R75                                | 750        | G, J, K, M | 45                        | 25/100            | 1.54                  | 360                   | 360                             |
| AISC-1008-R82                                | 820        | G, J, K, M | 45                        | 25/100            | 1.61                  | 400                   | 330                             |
| AISC-1008-R91                                | 910        | G, J, K, M | 35                        | 25/50             | 1.68                  | 380                   | 295                             |
| AISC-1008-1R0                                | 1,000      | G, J, K, M | 35                        | 25/50             | 1.8                   | 370                   | 270                             |
| AISC-1008-1R2                                | 1,200      | G, J, K, M | 35                        | 7.9/50            | 2                     | 310                   | 200                             |
| AISC-1008-1R5                                | 1,500      | G, J, K, M | 28                        | 7.9/50            | 2.3                   | 330                   | 150                             |
| AISC-1008-1R8                                | 1,800      | G, J, K, M | 28                        | 7.9/50            | 2.6                   | 300                   | 120                             |
| AISC-1008-2R2                                | 2,200      | G, J, K, M | 28                        | 7.9/50            | 2.8                   | 280                   | 100                             |
| AISC-1008-1R7                                | 2,700      | G, J, K, M | 22                        | 7.9/25            | 3.2                   | 290                   | 90                              |
| AISC-1008-3R3                                | 3,300      | G, J, K, M | 22                        | 7.9/25            | 3.4                   | 290                   | 70                              |
| AISC-1008-3R9                                | 3,900      | G, J, K, M | 17                        | 7.9/25            | 3.6                   | 260                   | 60                              |
| AISC-1008-4R7                                | 4,700      | G, J, K, M | 20                        | 7.9/25            | 4                     | 260                   | 50                              |
| AISC-1008-5R6                                | 5,600      | G, J, K, M | 20                        | 7.9/25            | 5.7                   | 240                   | 40                              |
| AISC-1008-6R8                                | 6,800      | G, J, K, M | 20                        | 7.9/25            | 7.7                   | 200                   | 40                              |
| AISC-1008-8R2                                | 8,200      | G, J, K, M | 20                        | 7.9/25            | 10.7                  | 150                   | 30                              |
| AISC-1008F-R33                               | 330        | J, K, M    | 50                        | 25/100            | 0.17                  | 700                   | 600                             |
| AISC-1008F-1R0                               | 1,000      | J, K, M    | 20                        | 7.9/50            | 0.80                  | 600                   | 250                             |
| AISC-1008F-1R2                               | 1,200      | J, K, M    | 37                        | 7.9/50            | 0.80                  | 650                   | 250                             |
| AISC-1008F-1R5                               | 1,500      | J, K, M    | 35                        | 7.9/50            | 0.76                  | 630                   | 190                             |
| AISC-1008F-1R8                               | 1,800      | J, K, M    | 33                        | 7.9/50            | 0.84                  | 600                   | 170                             |
| AISC-1008F-2R2                               | 2,200      | J, K, M    | 30                        | 7.9/50            | 1.15                  | 520                   | 150                             |
| AISC-1008F-2R7                               | 2,700      | J, K, M    | 25                        | 7.9/50            | 1.30                  | 490                   | 120                             |
| AISC-1008F-3R3                               | 3,300      | J, K, M    | 23                        | 7.9/50            | 1.70                  | 450                   | 100                             |
| AISC-1008F-3R9                               | 3,900      | J, K, M    | 26                        | 7.9/25            | 2.00                  | 420                   | 100                             |
| AISC-1008F-4R7                               | 4,700      | J, K, M    | 31                        | 7.9/7.9           | 1.68                  | 400                   | 60                              |
| AISC-1008F-5R6                               | 5,600      | J, K, M    | 23                        | 7.9/7.9           | 2.65                  | 380                   | 80                              |
| AISC-1008F-6R8                               | 6,800      | J, K, M    | 20                        | 7.9/7.9           | 3.00                  | 360                   | 60                              |
| AISC-1008F-8R2                               | 8,200      | J, K, M    | 20                        | 7.9/7.9           | 3.30                  | 330                   | 40                              |
| AISC-1008F-100                               | 10,000     | J, K, M    | 15                        | 7.9/7.9           | 2.95                  | 300                   | 40                              |



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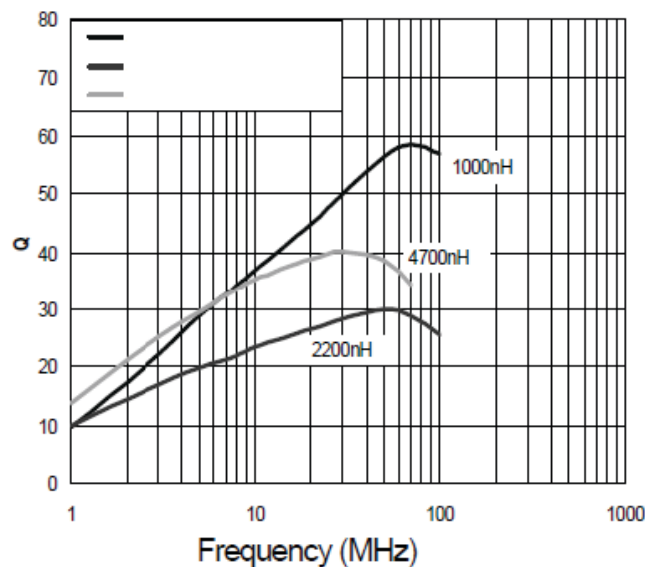
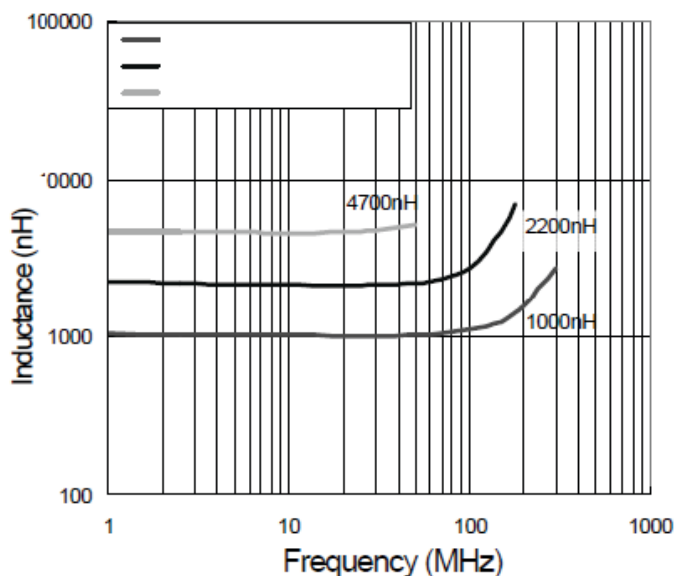
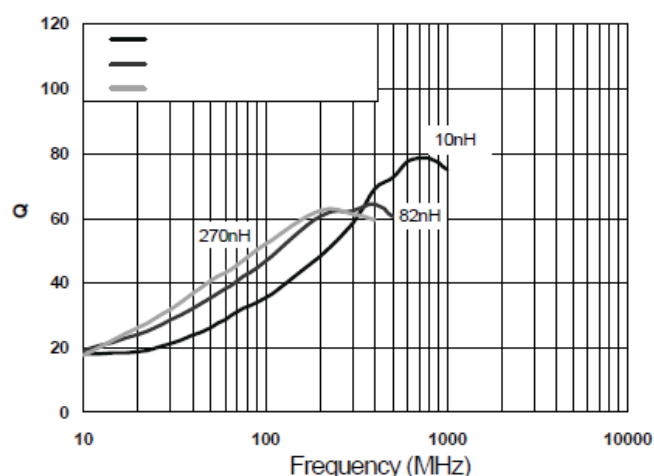
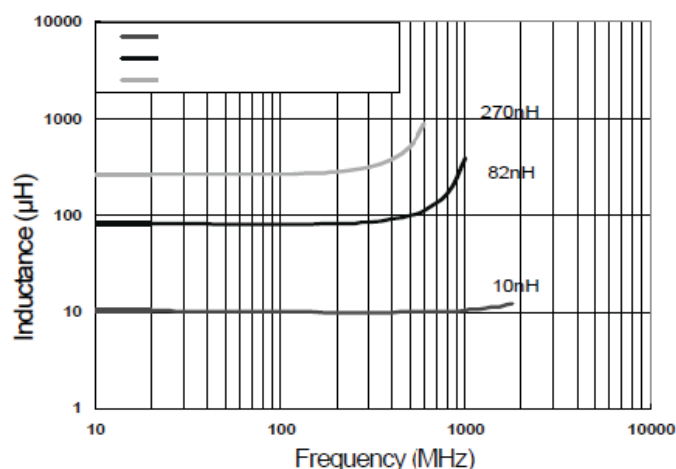
2.92 x 2.79 x 2.29mm  
RoHS/RoHS II Compliant  
MSL = MSL - 1

**Operating Temperature:** -40°C to +125°C for AISC-1008, -40°C to +85°C for AISC-1008F

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

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

## Electrical Characteristics Curves



# SMD Wire-Wound Chip Inductor (Ceramic or Ferrite Core)

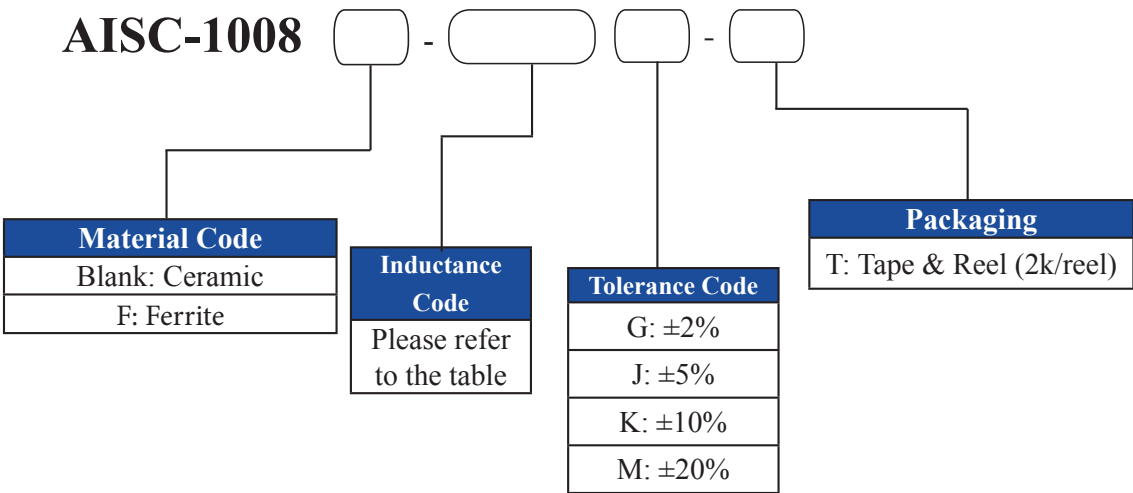


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## Part Number Identification



Marking: No Marking

# SMD Wire-Wound Chip Inductor (Ceramic or Ferrite Core)

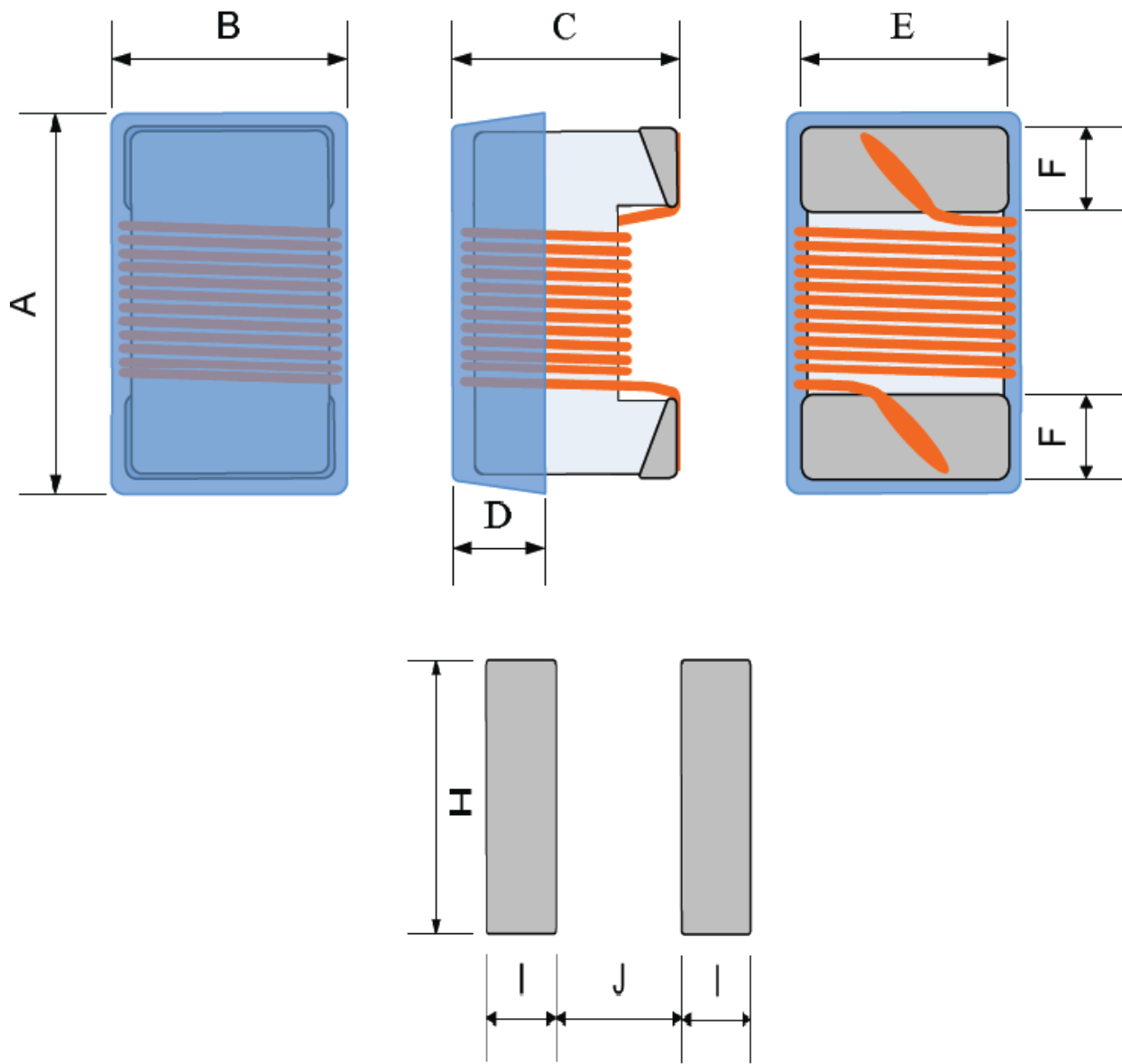


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## Mechanical Dimensions



| A MAX. | B MAX. | C MAX. | D REF. | E       | F       | H REF. | I REF. | J REF. |
|--------|--------|--------|--------|---------|---------|--------|--------|--------|
| 2.92   | 2.79   | 2.29   | 0.51   | 2.1±0.2 | 0.5±0.2 | 2.54   | 1.02   | 1.27   |

Dimensions: mm

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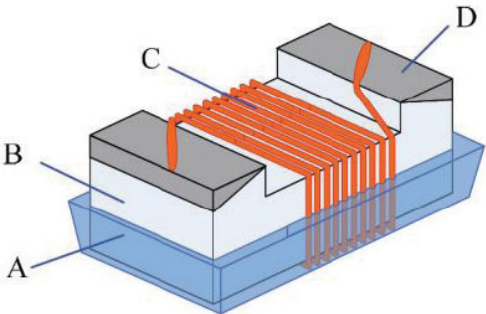


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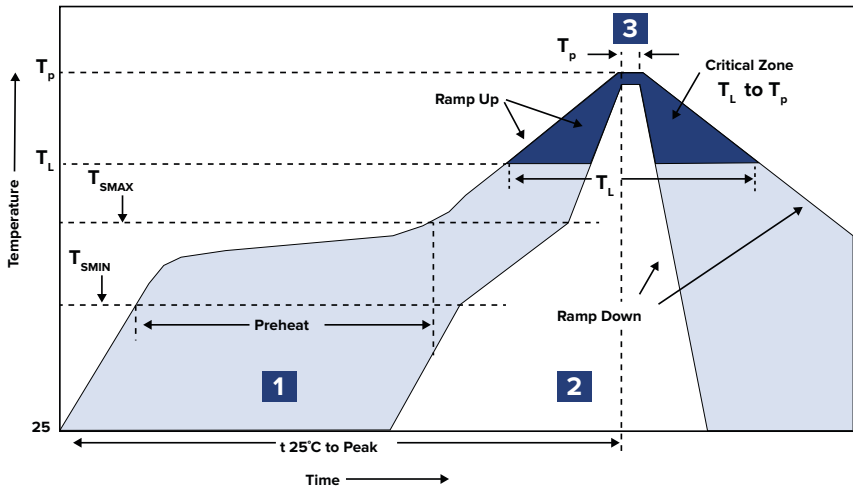
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## Materials



| No | Components | Material                                                                        |
|----|------------|---------------------------------------------------------------------------------|
| A  | Coating    | Ultraviolet epoxy resin                                                         |
| B  | Core       | Ceramic                                                                         |
| C  | Wire       | Polyurethane system enameled copper wire                                        |
| D  | Electrodes | AISC-1008: Mo-Mn with Ni and Au plating<br>AISC-1008F: Ag-Pd with Ni-Sn plating |

## Reflow Profile



| Zone | Description | Temperature                               | Times         |
|------|-------------|-------------------------------------------|---------------|
| 1    | Preheat     | $T_{SMIN} \sim T_{SMAX}$<br>150°C ~ 200°C | 60 ~ 120 sec. |
| 2    | Reflow      | $T_L$<br>217°C                            | 60 ~ 90 sec.  |
| 3    | Peak heat   | $T_P$<br>260°C                            | 10 sec. MAX   |

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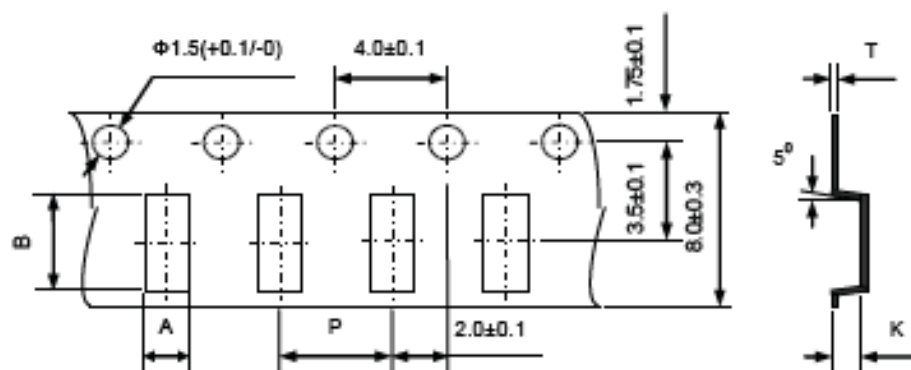
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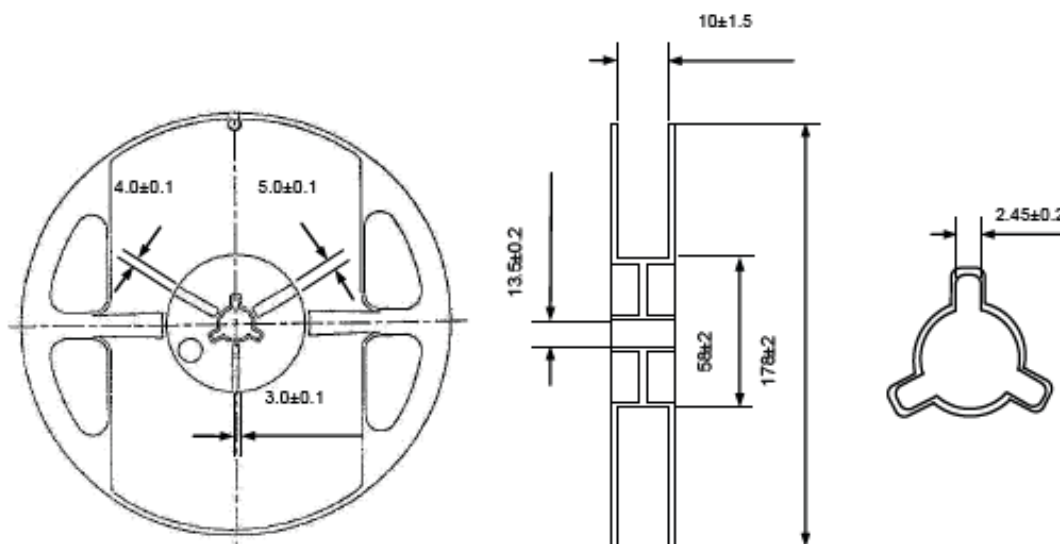
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## Packing

T= tape and reel (2,000pcs/reel)



| A        | P       | B        | K Max    | T        |
|----------|---------|----------|----------|----------|
| 2.73±0.2 | 4.0±0.1 | 2.90±0.2 | 2.34±0.2 | 0.23±0.1 |



Dimensions: mm



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