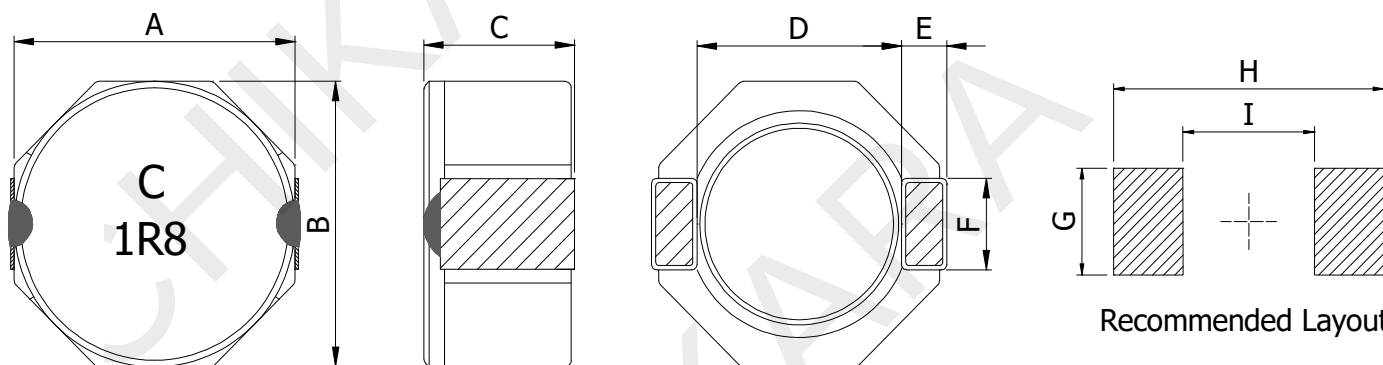


### Features

- Magnetically shielded construction
- Storage temperature range:-40°C to +125°C
- Operating temperature range:-40°C to +125°C  
(including coil's self-temperature rise)
- Moisture sensitivity level:1
- Packaging:1200pcs. Per 13-inch reel
- RoHs&Halogen-free compliant



### Mechanical Dimension(Unit:mm)



| A       | B       | C       | D   | E   | F   | G   | H    | I   |
|---------|---------|---------|-----|-----|-----|-----|------|-----|
| 8.0±0.3 | 8.0±0.3 | 4.0Max. | 6.3 | 1.2 | 2.5 | 2.8 | 10.1 | 6.1 |

### Part Number Description

SP09 - 8038 1R8 N  
① ② ③ ④

|   |                  |
|---|------------------|
| ① | Type             |
| ② | Dimensions       |
| ③ | Inductance value |
| ④ | Tolerance code   |

### Electrical Schematic



### Electrical Characteristic

| Part Number   | Inductance<br>L0(uH) | DCR<br>(mΩ)Typ. | DCR<br>(mΩ)Max. | Isat<br>(A)Max. | Irms<br>(A)Max. |
|---------------|----------------------|-----------------|-----------------|-----------------|-----------------|
| SP09-80381R8N | 1.8±30%              | 12.0            | 15.6            | 7.00            | 6.80            |
| SP09-80382R5N | 2.5±30%              | 14.0            | 17.5            | 6.50            | 6.00            |
| SP09-80383R5N | 3.5±30%              | 17.0            | 24.0            | 5.00            | 5.20            |
| SP09-80384R7N | 4.7±30%              | 22.0            | 29.0            | 4.60            | 4.40            |
| SP09-80386R0N | 6.0±30%              | 24.0            | 32.0            | 4.20            | 4.00            |
| SP09-8038100M | 10±20%               | 43.0            | 48.0            | 3.00            | 3.20            |
| SP09-8038150M | 15±20%               | 61.0            | 67.0            | 2.75            | 2.50            |
| SP09-8038220M | 22±20%               | 86.0            | 105             | 2.30            | 2.00            |
| SP09-8038330M | 33±20%               | 128             | 157             | 1.75            | 1.60            |
| SP09-8038470M | 47±20%               | 163             | 189             | 1.52            | 1.42            |
| SP09-8038680M | 68±20%               | 232             | 290             | 1.30            | 1.08            |
| SP09-8038101M | 100±20%              | 355             | 410             | 1.05            | 0.88            |

- Test frequency and voltage:100KHz,0.1Vrms.
- All test data referenced to 25°C ambient.
- Saturation current(Isat) will cause L0 to drop approximately 35%.
- Heat rated current(Irms) will cause the coil temperature rise approximately Δt of 40°C.



### Soldering Specification

- Reflow profile for SMT components



- Classification of peak package body temperature (Tp)

|                  | Package Thickness | Package Volume      |                         |                      |
|------------------|-------------------|---------------------|-------------------------|----------------------|
|                  |                   | <350mm <sup>3</sup> | 350~2000mm <sup>3</sup> | >2000mm <sup>3</sup> |
| PB-Free Assembly | <1.6mm            | 260°C               | 260°C                   | 260°C                |
|                  | 1.6~2.5mm         | 260°C               | 250°C                   | 245°C                |
|                  | ≥2.5mm            | 250°C               | 245°C                   | 245°C                |

※ Reflow is referred to standard IPC/JEDEC J-STD-020D.