

1. Part No. Expression

S P S 4 0 1 8 B 3 R 3 M F

(a) (b) (c) (d) (e) (f)

(a) Series Code

(b) Dimension Code

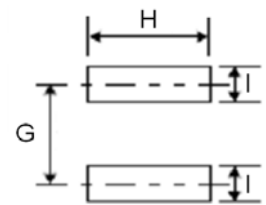
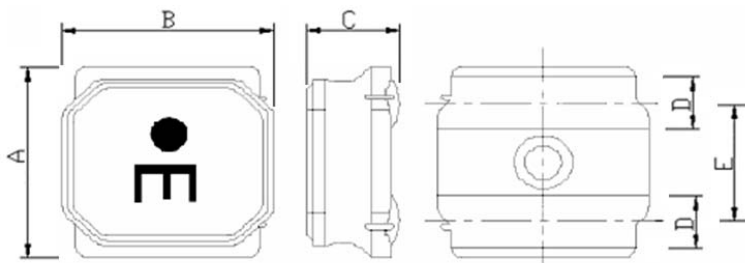
(c) Material Code

(d) Inductance Code

(e) Tolerance Code

(f) RoHS Compliance

2. Configuration & Dimensions



Recommended PCB Pattern

Note:

Marking: Inductance Symbol

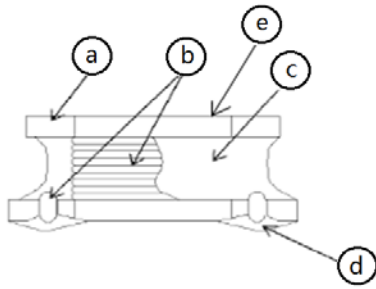
Unit: mm

| A | B | C | D | E | G | H | I |
|---------|---------|----------|---------|---------|----------|----------|----------|
| 4.0±0.2 | 4.0±0.2 | 1.8 Max. | 1.1±0.2 | 2.5±0.2 | 2.8 Ref. | 3.7 Ref. | 1.2 Ref. |

3. Schematic



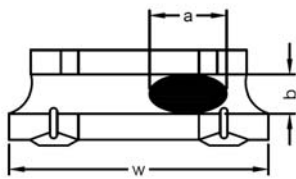
4. Material List



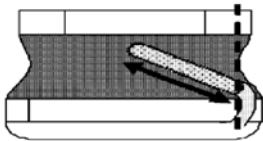
- a) Core
- b) Wire
- c) Glue
- d) Terminal
- e) Ink

**Void appearance tolerance limit & size of voids occurring to coating resin is specified below.

Appearance of exposed wire tolerance limit:



1. Width direction (dimension a) : Acceptable when $a \leq w/2$;
Nonconforming when $a > w/2$
2. Length direction (dimension b): Dimension b is not specified
3. The total area of exposed wire occurring to each sides is not greater than 50% of coating resin area and is acceptable



External appearance criterion for exposed wire.

Exposed end of the winding wire at the secondary side should be 2mm and below.

5. General Specification

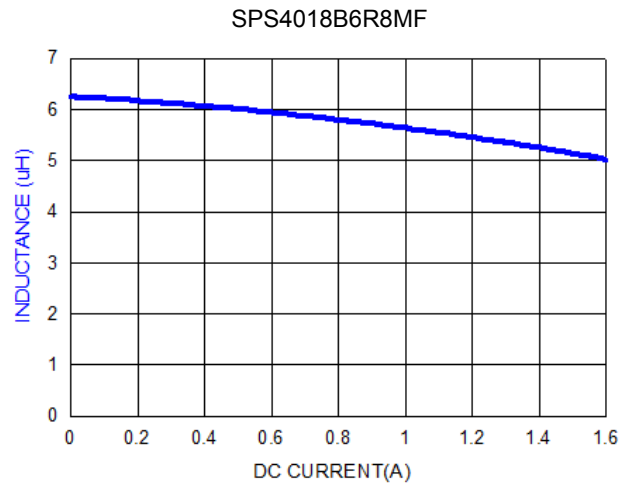
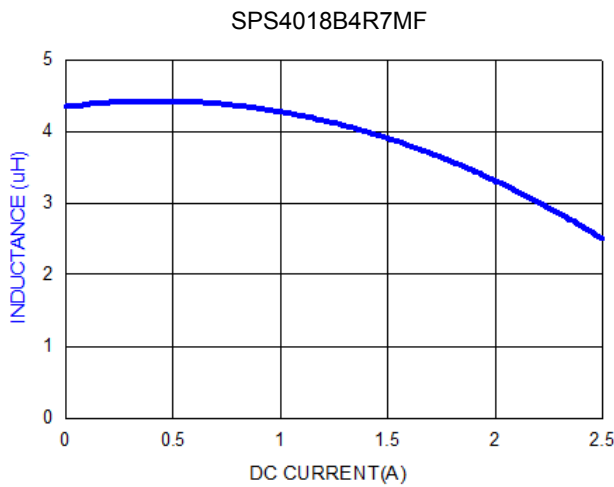
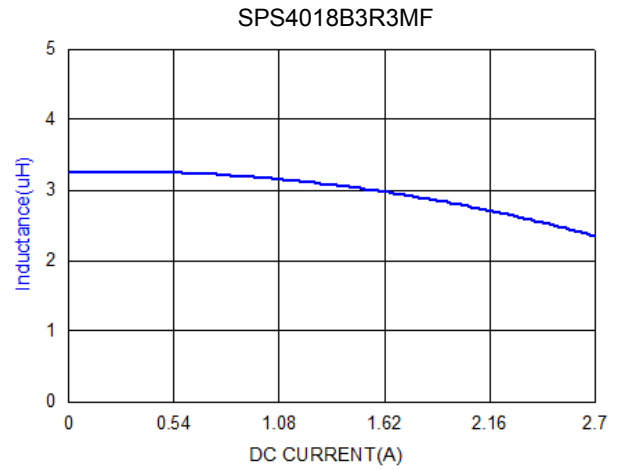
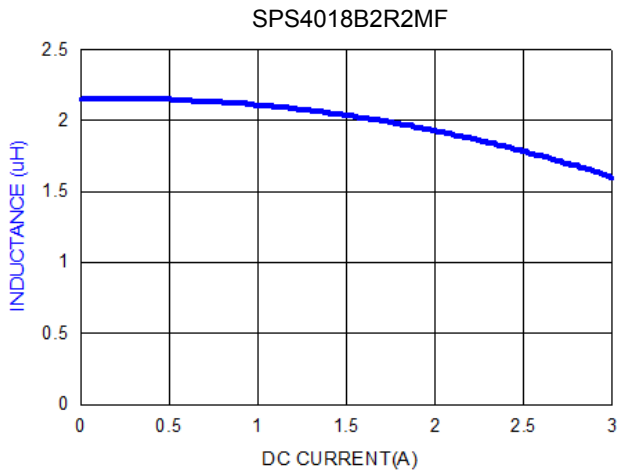
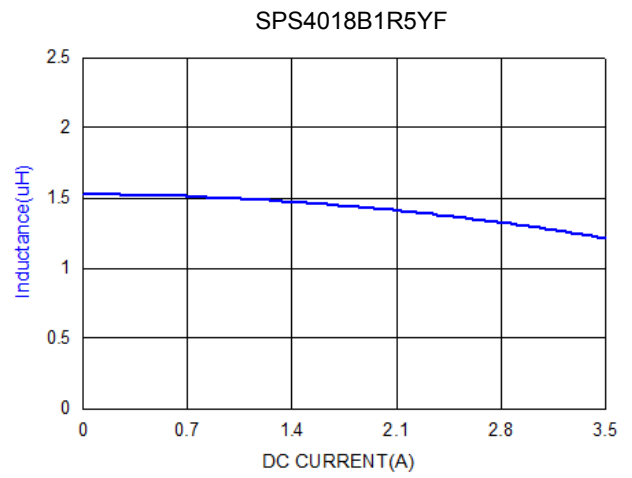
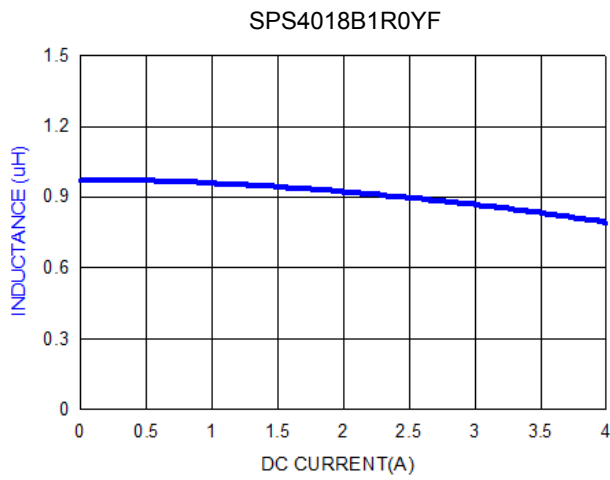
- a) Heat Rated Current (Irms) will cause the coil temperature rise approximately $\Delta T \leq 40^\circ\text{C}$
- b) Saturation Current (Isat) will cause L0 to drop $\Delta L \leq 30\%$
- c) Operating Temperature: -40°C to $+125^\circ\text{C}$
- d) Storage Temperature: -40°C to $+125^\circ\text{C}$
- e) Humidity Range : $85 \pm 2\%$ RH
- f) Storage Condition (component in its packaging)
 - i) Temperature: Less than 40°C
 - ii) Humidity: 60% RH

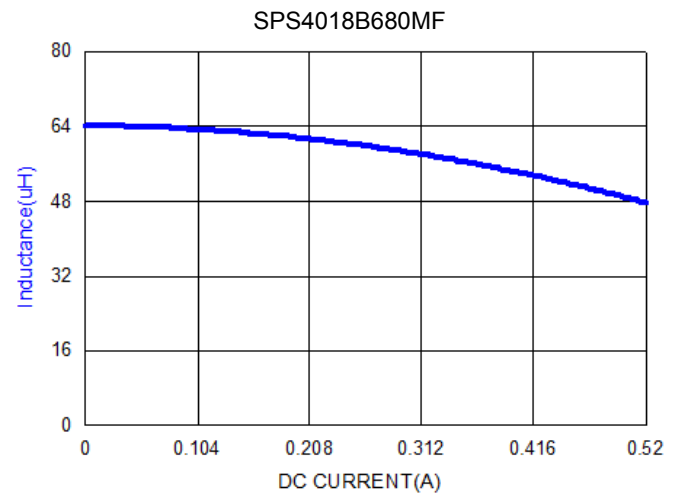
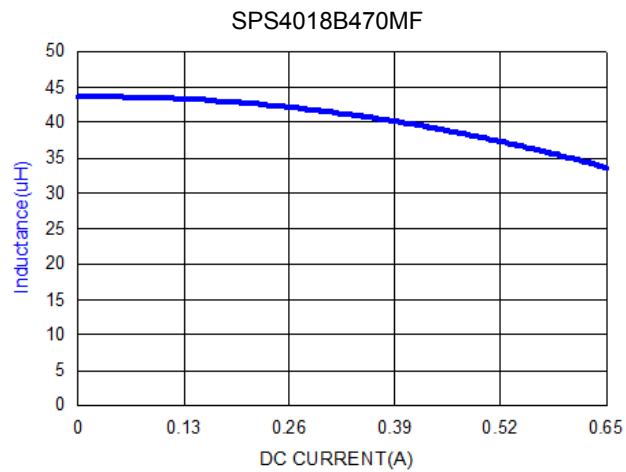
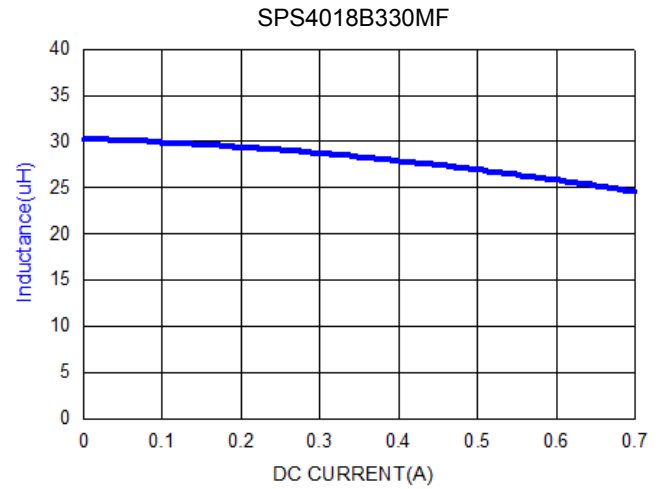
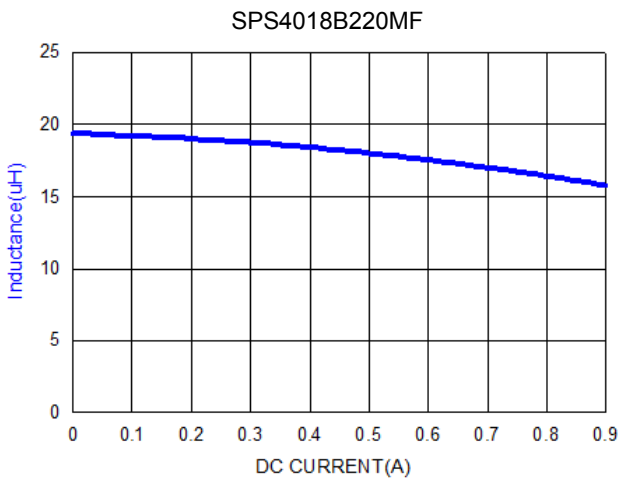
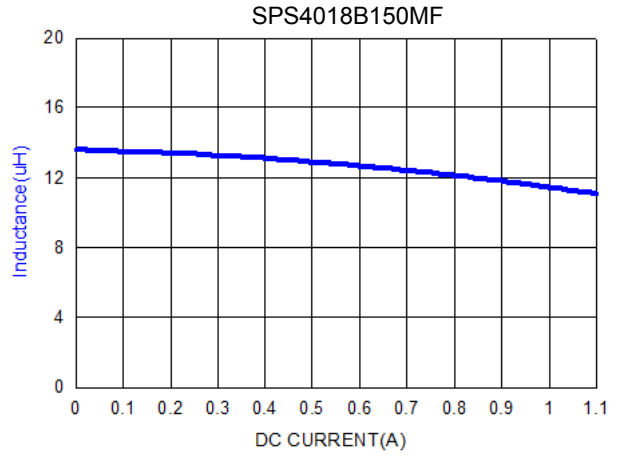
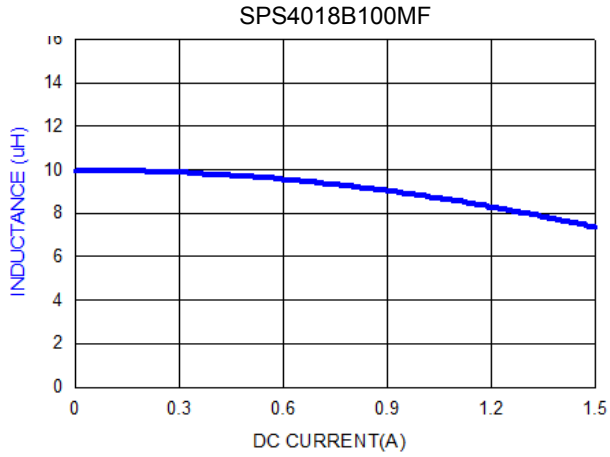
6. Electrical Characteristics

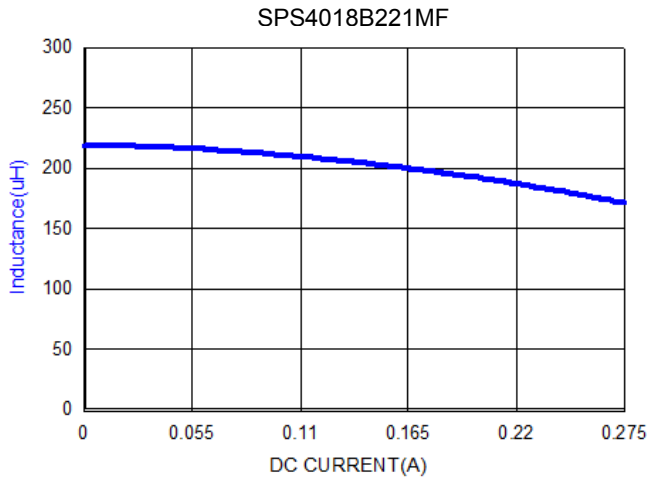
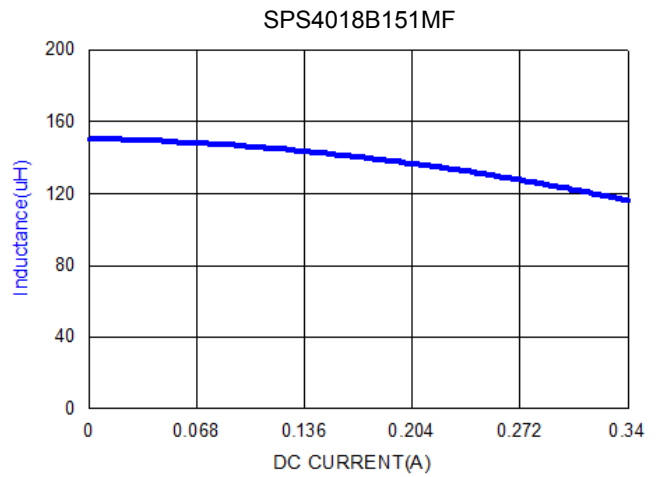
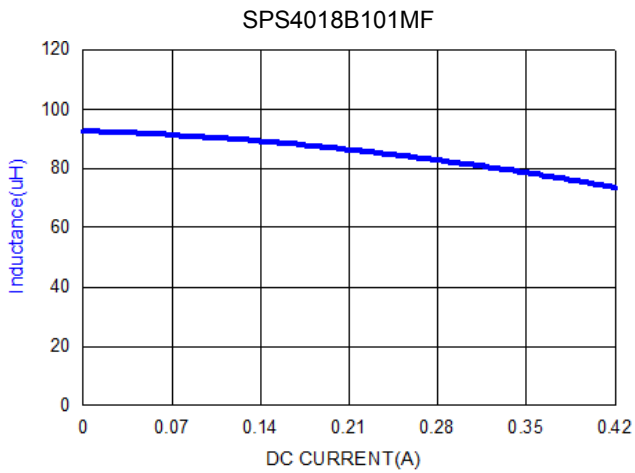
| Part No. | Inductance (μ H) | Test Frequency (Hz) | SRF (MHz) Min. | DCR (Ω) $\pm 20\%$ | I sat (A) | I rms (A) | Inductance Symbol |
|---------------|--------------------------|---------------------------|----------------------|--------------------------------|--------------|--------------|----------------------|
| SPS4018B1R0YF | 1.0 | 1V100K | 90 | 0.027 | 4.00 | 3.20 | A |
| SPS4018B1R5YF | 1.5 | 1V100K | 75 | 0.037 | 3.30 | 2.40 | B |
| SPS4018B2R2MF | 2.2 | 1V100K | 60 | 0.042 | 3.00 | 2.20 | C |
| SPS4018B3R3MF | 3.3 | 1V100K | 45 | 0.055 | 2.30 | 2.00 | E |
| SPS4018B4R7MF | 4.7 | 1V100K | 35 | 0.070 | 2.00 | 1.70 | H |
| SPS4018B6R8MF | 6.8 | 1V100K | 30 | 0.098 | 1.60 | 1.45 | I |
| SPS4018B100MF | 10 | 1V100K | 25 | 0.150 | 1.30 | 1.20 | K |
| SPS4018B150MF | 15 | 1V100K | 18 | 0.210 | 1.10 | 0.85 | M |
| SPS4018B220MF | 22 | 1V100K | 15 | 0.290 | 0.90 | 0.72 | N |
| SPS4018B330MF | 33 | 1V100K | 12 | 0.460 | 0.70 | 0.55 | P |
| SPS4018B470MF | 47 | 1V100K | 10 | 0.650 | 0.60 | 0.44 | S |
| SPS4018B680MF | 68 | 1V100K | 8.3 | 1.000 | 0.52 | 0.32 | T |
| SPS4018B101MF | 100 | 1V100K | 6.5 | 1.450 | 0.42 | 0.28 | V |
| SPS4018B151MF | 150 | 1V100K | 5.5 | 2.300 | 0.34 | 0.22 | W |
| SPS4018B221MF | 220 | 1V100K | 4.0 | 3.800 | 0.275 | 0.17 | X |

Note: Tolerance Y= $\pm 30\%$, M= $\pm 20\%$

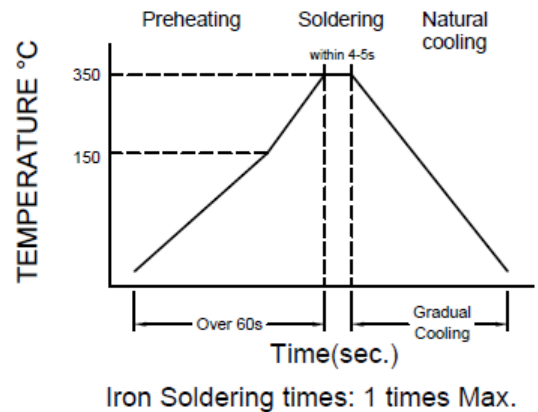
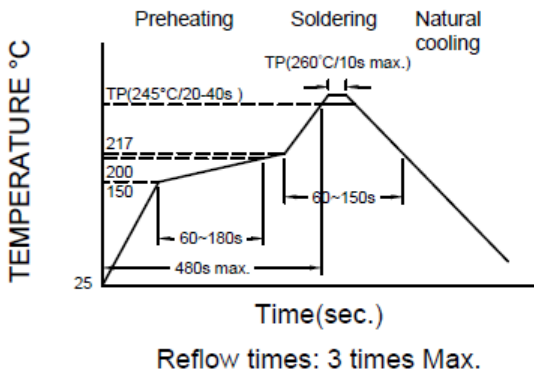
7. Characteristic Curve





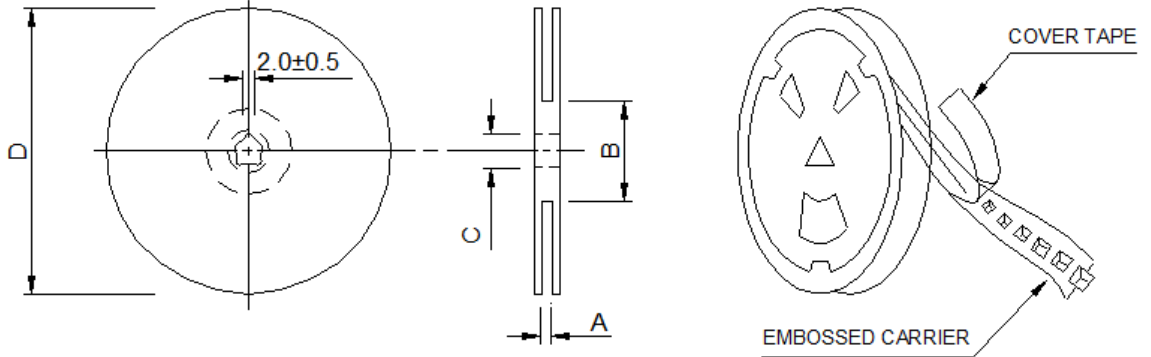


8. Soldering



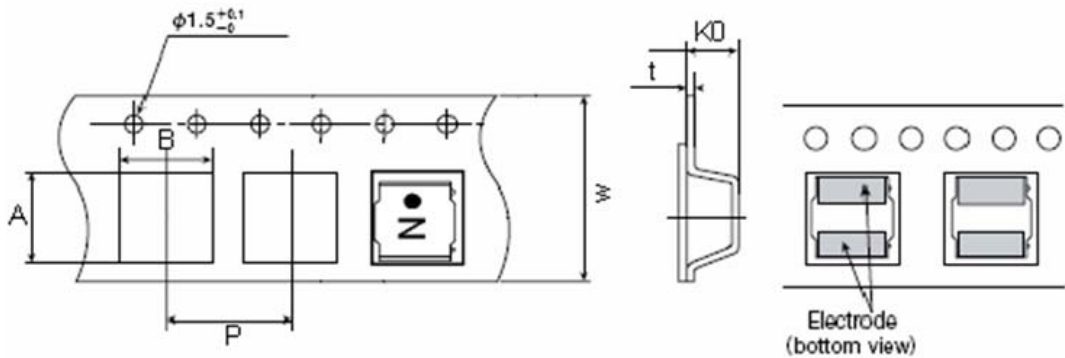
9. Packaging Information

9-1. Reel Dimension



| A (mm) | B (mm) | C (mm) | D (mm) |
|------------|------------|------------|-------------|
| 13.5 ± 1.0 | 80.0 ± 2.0 | 13.0 ± 0.5 | 330.0 ± 3.0 |

9-2. Tape Dimension



| Series | A(mm) | B(mm) | Ko(mm) | P(mm) | W(mm) | t(mm) |
|----------|---------|---------|---------|---------|--------|---------|
| SPS4018B | 4.3±0.1 | 4.3±0.1 | 2.1±0.1 | 8.0±0.1 | 12±0.3 | 0.3±0.1 |

9-3. Packaging Quantity

| | |
|------------|------|
| Size | 4018 |
| Chip/ Reel | 3500 |

Application Notice:

1. Storage Conditions:

To maintain the solderability of terminal electrodes:

- a) Recommended products should be used within 12 months from the time of delivery.
- b) The packaging material should be kept where no chlorine or sulfur exists in the air.

2. Transportation:

- a) Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
- b) Vacuum pick up is strongly recommended for individual components.
- c) Bulk handling should ensure that abrasion and mechanical shock are minimized.

