

## SPECIFICATION FOR APPROVAL

| CUSTOMER'S APPROVAL CHOP |       |
|--------------------------|-------|
| Approval's condition:    | _____ |
| Approved date:           | _____ |

KINDLY RETURN A SET WITH YOUR COMPANY'S OFFICIAL STAMP  
ON APPROVAL OF THIS ITEM

CUSTOMER'S NAME:

\_\_\_\_\_

CUSTOMER'S MODEL NO. :

\_\_\_\_\_

CUSTOMER'S PART NO. :

\_\_\_\_\_

DESCRIPTION:

Wire Wound Molded SMD Power Inductors

Semitel'S MODEL NO. :

SMPCEV Series

VERSION:

A

DATE:

2023/7/20**Attachments:**

- ☐ Product Specification
- ☐ Sample Qty. :
- ☐ Test Data

| Prepared By            | Checked By              | Approved By             |
|------------------------|-------------------------|-------------------------|
| Hebe Deng<br>2023/7/20 | Liang Wong<br>2023/7/20 | Eric Chang<br>2023/7/20 |

|                             |                                                                               |
|-----------------------------|-------------------------------------------------------------------------------|
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| www.semitelint.com          | 12F, No.183, Sec.1, Datong Rd., Xizhi Dist., New Taipei<br>City 22145, Taiwan |

## Revision Record

[illegible]

|                              |                      |                               |  |
|------------------------------|----------------------|-------------------------------|--|
| <b>Semitel'S MODEL NO. :</b> | <b>SMPCEV Series</b> | <b>CUSTOMER'S MODEL NO. :</b> |  |
| <b>VERSION:</b>              | <b>C</b>             | <b>CUSTOMER'S PART NO. :</b>  |  |
| <b>DATE:</b>                 | <b>2023/7/20</b>     |                               |  |

Semitel International Ltd.,

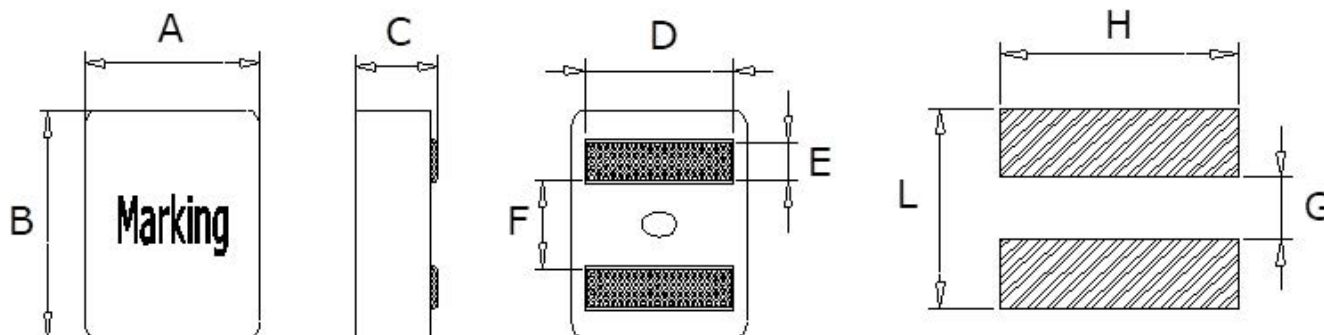
## 1.Electrical Characteristics

- Soft saturation.
- High current , low DCR , high efficiency.
- Very low acoustic noise and very low leakage flux noise.
- High reliability.
- 100% Lead(Pb)-Free and RoHS compliant.
- Operating temperature -55~+125°C(Including self - temperature rise)

## 2.Applications

- Note PC power system , incl. IMVP-6
- DC/DC converter

Dimensions (Unit: mm)



| Series      | A        | B        | C              | D              | E        | F        | L       | H       | G      |
|-------------|----------|----------|----------------|----------------|----------|----------|---------|---------|--------|
| SMPCEV0402A | 4.1±0.2  | 4.1±0.2  | 1.9±0.2        | 3.4±0.3        | 0.88±0.3 | 1.7±0.3  | 3.4ref  | 3.8ref  | 1.4ref |
| SMPCEV0403A | 4.1±0.25 | 4.1±0.25 | 2.8±0.2        | 3.4±0.3        | 0.88±0.3 | 1.7±0.3  | 3.4ref  | 3.8ref  | 1.4ref |
| SMPCEV0502A | 5.5±0.2  | 5.3±0.2  | 1.9±0.2        | 4.3±0.3        | 1.1±0.3  | 2.3±0.3  | 4.5ref  | 4.7ref  | 2.0ref |
| SMPCEV0503A | 5.5±0.2  | 5.3±0.2  | 2.9±0.2        | 4.3±0.3        | 1.1±0.3  | 2.3±0.3  | 4.5ref  | 4.7ref  | 2.0ref |
| SMPCEV0505A | 5.5±0.2  | 5.3±0.2  | 4.8±0.2        | 4.3±0.3        | 1.1±0.3  | 2.3±0.3  | 4.5ref  | 4.7ref  | 2.0ref |
| SMPCEV0603A | 6.6±0.2  | 6.4±0.2  | See Spec table | See Spec table | 1.4±0.3  | 2.6±0.3  | 5.6ref  | 5.6ref  | 2.5ref |
| SMPCEV0605A | 6.6±0.2  | 6.4±0.2  | 4.8±0.2        | See Spec table | 1.4±0.3  | 2.6±0.3  | 5.6ref  | 5.6ref  | 2.5ref |
| SMPCEV0606A | 6.6±0.2  | 6.4±0.2  | 5.8±0.2        | 5.3±0.3        | 1.4±0.3  | 2.6±0.3  | 5.6ref  | 5.6ref  | 2.5ref |
| SMPCEV0702A | 7.8±0.25 | 7.6±0.2  | 1.85±0.2       | See Spec table | 1.75±0.3 | 3.15±0.3 | 7.4ref  | 7.2ref  | 2.8ref |
| SMPCEV0703A | 7.8±0.25 | 7.6±0.2  | 2.9±0.2        | See Spec table | 1.75±0.3 | 3.15±0.3 | 7.4ref  | 7.2ref  | 2.8ref |
| SMPCEV0707A | 7.8±0.25 | 7.6±0.25 | 6.7±0.3        | See Spec table | 1.75±0.3 | 3.15±0.3 | 7.8ref  | 6.7ref  | 2.8ref |
| SMPCEV0808A | 8.9±0.3  | 8.5±0.3  | 7.7±0.3        | See Spec table | 1.8±0.3  | 3.5±0.5  | 8.0ref  | 7.8ref  | 2.7ref |
| SMPCEV1010A | 11.9±0.3 | 11.0±0.3 | 9.7±0.3        | See Spec table | 2.4±0.3  | 4.4±0.5  | 10.5ref | 11.0ref | 3.7ref |
| SMPCEV1003A | 11.9±0.3 | 11.0±0.3 | 2.9±0.2        | 9.0±0.5        | 2.4±0.3  | 4.4±0.5  | 10.5ref | 11.0ref | 3.7ref |
| SMPCEV1006A | 11.9±0.3 | 11.0±0.3 | 5.7±0.3        | See Spec table | 2.4±0.3  | 4.5±0.5  | 10.5ref | 11.0ref | 3.7ref |
| SMPCEV1508A | 16.5±0.3 | 15.5±0.3 | 7.7±0.3        | 13.2±0.5       | 3.2±0.3  | 7.0±0.5  | 15.0ref | 15.0ref | 6.0ref |
| SMPCEV1510A | 16.5±0.3 | 15.5±0.3 | 9.7±0.3        | 13.2±0.5       | 3.2±0.3  | 7.0±0.3  | 15.0ref | 15.0ref | 6.0ref |
| SMPCEV1513A | 16.5±0.3 | 15.5±0.3 | 12.7±0.3       | 13.2±0.5       | 3.2±0.3  | 7.0±0.5  | 15.0ref | 15.0ref | 6.0ref |

|                       |               |                        |  |
|-----------------------|---------------|------------------------|--|
| Semitel'S MODEL NO. : | SMPCEV Series | CUSTOMER'S MODEL NO. : |  |
| VERSION:              | C             | CUSTOMER'S PART NO. :  |  |
| DATE:                 | 2023/7/20     |                        |  |

**SMPCEV0402A Series**

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      |
|-------------------|--------------|-----------------|----------|------|-------------|------|
|                   |              |                 | Max      | Typ  | 20°C        | 40°C |
|                   | 100KHz /0.1V |                 |          |      | rise        | rise |
| SMPCEV0402A-R10MT | 0.10         | 2.42            | 33.0     | 38.0 | 13.5        | 18.0 |
| SMPCEV0402A-R22MT | 0.22         | 4.60            | 18.8     | 19.5 | 13.0        | 16.8 |
| SMPCEV0402A-R36MT | 0.36         | 6.30            | 15.0     | 17.0 | 11.0        | 14.5 |
| SMPCEV0402A-R40MT | 0.40         | 7.73            | 13.5     | 15.5 | 10.0        | 14.0 |
| SMPCEV0402A-R47MT | 0.47         | 8.58            | 13.0     | 14.5 | 9.0         | 12.5 |
| SMPCEV0402A-R56MT | 0.56         | 9.30            | 12.6     | 14.0 | 8.5         | 12.0 |
| SMPCEV0402A-R60MT | 0.60         | 9.52            | 12.3     | 13.7 | 8.0         | 11.7 |
| SMPCEV0402A-R72MT | 0.72         | 11.60           | 10.6     | 12.0 | 7.6         | 10.5 |
| SMPCEV0402A-1R0MT | 1.00         | 14.60           | 8.8      | 9.6  | 6.8         | 9.6  |
| SMPCEV0402A-1R2MT | 1.20         | 17.90           | 7.8      | 9.0  | 6.6         | 9.0  |
| SMPCEV0402A-1R5MT | 1.50         | 23.50           | 7.4      | 8.0  | 5.8         | 7.6  |
| SMPCEV0402A-1R8MT | 1.80         | 28.00           | 7.0      | 7.5  | 5.2         | 7.0  |
| SMPCEV0402A-2R2MT | 2.20         | 38.70           | 6.0      | 6.5  | 4.6         | 5.6  |

**SMPCEV0403A Series**

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      |
|-------------------|--------------|-----------------|----------|------|-------------|------|
|                   |              |                 | Max      | Typ  | 20°C        | 40°C |
|                   | 100KHz /0.1V |                 |          |      | rise        | rise |
| SMPCEV0403A-R47MT | 0.47         | 7.26            | 15.0     | 17.0 | 10.0        | 14.0 |
| SMPCEV0403A-R90MT | 0.90         | 10.1            | 9.0      | 10.0 | 8.2         | 11.2 |
| SMPCEV0403A-1R0MT | 1.00         | 10.1            | 9.2      | 9.8  | 8.0         | 11.0 |
| SMPCEV0403A-1R2MT | 1.20         | 11.5            | 8.7      | 9.2  | 7.8         | 9.8  |
| SMPCEV0403A-1R5MT | 1.50         | 13.2            | 7.0      | 8.0  | 7.0         | 9.0  |
| SMPCEV0403A-2R2MT | 2.20         | 22.6            | 6.1      | 7.0  | 6.0         | 7.8  |
| SMPCEV0403A-3R3MT | 3.30         | 28.6            | 5.3      | 6.2  | 5.0         | 6.6  |

**SMPCEV0502A Series**

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      |
|-------------------|--------------|-----------------|----------|------|-------------|------|
|                   |              |                 | Max      | Typ  | 20°C        | 40°C |
|                   | 100KHz /0.1V |                 |          |      | rise        | rise |
| SMPCEV0502A-R15MT | 0.15         | 4.60            | 27.0     | 30.0 | 13.9        | 18.8 |
| SMPCEV0502A-R16MT | 0.16         | 4.60            | 27.0     | 30.0 | 13.9        | 18.8 |
| SMPCEV0502A-R33MT | 0.33         | 7.00            | 24.0     | 26.0 | 10.5        | 14.4 |
| SMPCEV0502A-R47MT | 0.47         | 8.04            | 20.0     | 22.0 | 10.1        | 14.1 |
| SMPCEV0502A-R56MT | 0.56         | 9.54            | 16.0     | 19.0 | 9.9         | 13.9 |
| SMPCEV0502A-R68MT | 0.68         | 10.2            | 14.0     | 16.0 | 9.6         | 13.4 |
| SMPCEV0502A-R80MT | 0.80         | 11.8            | 13.5     | 15.5 | 9.4         | 13.0 |
| SMPCEV0502A-R82MT | 0.82         | 12.7            | 13.0     | 15.0 | 8.5         | 12.0 |
| SMPCEV0502A-1R0MT | 1.00         | 13.8            | 12.8     | 14.5 | 7.5         | 10.5 |
| SMPCEV0502A-1R2MT | 1.20         | 16.3            | 12.2     | 14.0 | 6.8         | 9.4  |
| SMPCEV0502A-1R5MT | 1.50         | 18.7            | 11.7     | 13.3 | 6.4         | 8.8  |

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|-----------------------|---------------|------------------------|--|
| Semitel'S MODEL NO. : | SMPCEV Series | CUSTOMER'S MODEL NO. : |  |
| VERSION:              | C             | CUSTOMER'S PART NO. :  |  |
| DATE:                 | 2023/7/20     |                        |  |

### SMPCEV0503A Series

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      |
|-------------------|--------------|-----------------|----------|------|-------------|------|
|                   | 100KHz /0.1V |                 | Max      | Typ  | 20°C        | 40°C |
|                   |              |                 |          |      | rise        | rise |
| SMPCEV0503A-R15MT | 0.15         | 2.31            | 32.5     | 36.0 | 14.3        | 22.2 |
| SMPCEV0503A-R16MT | 0.16         | 2.33            | 32.0     | 35.0 | 14.2        | 22.2 |
| SMPCEV0503A-R33MT | 0.33         | 3.52            | 26.0     | 28.0 | 13.8        | 19.2 |
| SMPCEV0503A-R47MT | 0.47         | 4.13            | 24.0     | 26.0 | 13.7        | 18.4 |
| SMPCEV0503A-R56MT | 0.56         | 4.52            | 20.2     | 22.2 | 13.6        | 17.7 |
| SMPCEV0503A-R60MT | 0.60         | 4.52            | 20.0     | 22.0 | 13.6        | 17.7 |
| SMPCEV0503A-R80MT | 0.80         | 5.65            | 18.0     | 20.0 | 10.1        | 13.1 |
| SMPCEV0503A-R82MT | 0.82         | 5.78            | 17.6     | 19.7 | 9.9         | 12.9 |
| SMPCEV0503A-1R0MT | 1.00         | 7.60            | 14.3     | 16.5 | 9.0         | 12.2 |
| SMPCEV0503A-1R2MT | 1.20         | 9.70            | 13.5     | 15.0 | 8.5         | 11.0 |
| SMPCEV0503A-1R5MT | 1.50         | 11.2            | 12.5     | 14.0 | 8.0         | 10.5 |
| SMPCEV0503A-1R8MT | 1.80         | 12.7            | 11.3     | 12.3 | 7.6         | 10.1 |
| SMPCEV0503A-2R2MT | 2.20         | 14.5            | 9.0      | 10.0 | 7.2         | 9.7  |
| SMPCEV0503A-3R3MT | 3.30         | 23.1            | 8.7      | 9.5  | 5.9         | 8.1  |
| SMPCEV0503A-4R7MT | 4.70         | 36.3            | 7.0      | 8.2  | 4.3         | 5.9  |

### SMPCEV0505A Series

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |     | Irms (A)Typ |      |
|-------------------|--------------|-----------------|----------|-----|-------------|------|
|                   | 100KHz /0.1V |                 | Max      | Typ | 20°C        | 40°C |
|                   |              |                 |          |     | rise        | rise |
| SMPCEV0505A-5R6MT | 5.6          | 24.2            | 7.2      | 8.6 | 5.3         | 7.2  |
| SMPCEV0505A-6R8MT | 6.8          | 28.6            | 6.6      | 7.8 | 4.8         | 6.4  |
| SMPCEV0505A-8R2MT | 8.2          | 32.5            | 6.1      | 7.2 | 4.6         | 6.1  |
| SMPCEV0505A-100MT | 10.0         | 43.0            | 5.4      | 6.5 | 3.8         | 5.0  |

### SMPCEV0603A Series

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      | C(mm)<br>±0.3 | D(mm)<br>±0.3 |
|-------------------|--------------|-----------------|----------|------|-------------|------|---------------|---------------|
|                   | 100KHz /0.1V |                 | Max      | Typ  | 20℃         | 40℃  |               |               |
|                   |              |                 |          |      | rise        | rise |               |               |
| SMPCEV0603A-R18MT | 0.18         | 1.75            | 36.0     | 40.0 | 24.0        | 32.0 | 2.8           | 5.30          |
| SMPCEV0603A-R33MT | 0.33         | 2.50            | 28.0     | 32.0 | 20.0        | 25.0 | 2.8           | 5.55          |
| SMPCEV0603A-R56MT | 0.56         | 3.31            | 25.0     | 29.0 | 17.0        | 22.0 | 2.8           | 5.30          |
| SMPCEV0603A-R68MT | 0.68         | 5.17            | 21.0     | 25.0 | 15.0        | 20.0 | 2.8           | 5.30          |
| SMPCEV0603A-1R0MT | 1.0          | 6.05            | 18.0     | 23.0 | 13.0        | 18.0 | 2.8           | 5.20          |
| SMPCEV0603A-1R2MT | 1.2          | 7.40            | 16.0     | 22.0 | 12.0        | 16.0 | 2.8           | 5.15          |
| SMPCEV0603A-1R5MT | 1.5          | 9.13            | 15.5     | 20.0 | 11.0        | 15.0 | 2.9           | 5.15          |
| SMPCEV0603A-1R8MT | 1.8          | 10.2            | 13.0     | 18.2 | 10.0        | 14.0 | 2.9           | 5.10          |
| SMPCEV0603A-2R2MT | 2.2          | 12.2            | 11.0     | 15.9 | 7.0         | 10.0 | 2.9           | 5.05          |
| SMPCEV0603A-3R3MT | 3.3          | 20.8            | 9.0      | 12.2 | 6.0         | 8.0  | 2.9           | 5.00          |
| SMPCEV0603A-4R5MT | 4.5          | 25.3            | 8.0      | 10.0 | 5.0         | 7.0  | 2.9           | 5.00          |

|                       |               |                        |  |
|-----------------------|---------------|------------------------|--|
| Semitel'S MODEL NO. : | SMPCEV Series | CUSTOMER'S MODEL NO. : |  |
| VERSION:              | C             | CUSTOMER'S PART NO. :  |  |
| DATE:                 | 2023/7/20     |                        |  |

### SMPCEV0605A Series

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      | D(mm)<br>±0.3 |
|-------------------|--------------|-----------------|----------|------|-------------|------|---------------|
|                   | 100KHz /0.1V |                 | Max      | Typ  | 20°C        | 40°C |               |
|                   |              |                 |          |      | rise        | rise |               |
| SMPCEV0605A-R82MT | 0.82         | 4.18            | 20.0     | 24.0 | 16.0        | 21.0 | 5.3           |
| SMPCEV0605A-1R0MT | 1.0          | 4.52            | 18.0     | 23.0 | 15.0        | 20.0 | 5.3           |
| SMPCEV0605A-1R2MT | 1.2          | 5.83            | 16.0     | 22.0 | 14.0        | 18.0 | 5.3           |
| SMPCEV0605A-1R5MT | 1.5          | 6.30            | 14.5     | 19.5 | 13.0        | 17.0 | 5.3           |
| SMPCEV0605A-1R8MT | 1.8          | 7.10            | 13.5     | 18.5 | 12.0        | 16.0 | 5.3           |
| SMPCEV0605A-2R2MT | 2.2          | 8.50            | 12.0     | 16.0 | 10.0        | 13.0 | 5.2           |
| SMPCEV0605A-3R3MT | 3.3          | 12.50           | 10.0     | 12.5 | 8.5         | 11.0 | 5.2           |
| SMPCEV0605A-4R3MT | 4.3          | 16.20           | 8.5      | 11.0 | 7.0         | 9.0  | 5.2           |
| SMPCEV0605A-4R7MT | 4.7          | 18.40           | 8.0      | 10.5 | 6.5         | 8.5  | 5.2           |

### SMPCEV0606A Series

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      |
|-------------------|--------------|-----------------|----------|------|-------------|------|
|                   | 100KHz /0.1V |                 | Max      | Typ  | 20℃         | 40℃  |
|                   |              |                 |          |      | rise        | rise |
| SMPCEV0606A-1R0MT | 1.0          | 4.4             | 19.0     | 24.0 | 16.0        | 21.0 |
| SMPCEV0606A-1R5MT | 1.5          | 6.1             | 15.0     | 20.0 | 13.5        | 17.5 |
| SMPCEV0606A-2R2MT | 2.2          | 8.1             | 12.5     | 16.5 | 11.0        | 14.0 |
| SMPCEV0606A-3R3MT | 3.3          | 12.3            | 11.0     | 13.0 | 9.0         | 12.0 |
| SMPCEV0606A-4R7MT | 4.7          | 14.4            | 9.3      | 10.5 | 8.5         | 11.0 |
| SMPCEV0606A-5R6MT | 5.6          | 15.9            | 8.7      | 9.9  | 7.6         | 10.0 |
| SMPCEV0606A-6R8MT | 6.8          | 20.8            | 8.1      | 9.2  | 7.0         | 9.0  |

### SMPCEV0702A- Series

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      | D(mm)<br>±0.3 |
|-------------------|--------------|-----------------|----------|------|-------------|------|---------------|
|                   | 100KHz /0.1V |                 | Max      | Typ  | 20℃         | 40℃  |               |
|                   |              |                 |          |      | rise        | rise |               |
| SMPCEV0702A-R27MT | 0.27         | 3.5             | 32.0     | 35.0 | 16.0        | 21.0 | 6.6           |
| SMPCEV0702A-R31MT | 0.31         | 4.8             | 31.0     | 34.0 | 14.0        | 20.0 | 6.2           |
| SMPCEV0702A-R33MT | 0.33         | 4.8             | 31.0     | 34.0 | 13.0        | 19.0 | 6.2           |
| SMPCEV0702A-R47MT | 0.47         | 6.2             | 25.0     | 28.0 | 12.0        | 17.0 | 6.2           |
| SMPCEV0702A-R68MT | 0.68         | 9.2             | 23.0     | 25.0 | 10.0        | 13.0 | 6.2           |
| SMPCEV0702A-1R0MT | 1.00         | 10.8            | 20.0     | 23.0 | 8.0         | 11.0 | 6.2           |

|                       |               |                        |  |
|-----------------------|---------------|------------------------|--|
| Semitel'S MODEL NO. : | SMPCEV Series | CUSTOMER'S MODEL NO. : |  |
| VERSION:              | C             | CUSTOMER'S PART NO. :  |  |
| DATE:                 | 2023/7/20     |                        |  |

**SMPCEV0703A- Series**

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      | D(mm)<br>±0.3 |
|-------------------|--------------|-----------------|----------|------|-------------|------|---------------|
|                   | 100KHz /0.1V |                 | Max      | Typ  | 20℃         | 40℃  |               |
|                   |              |                 |          |      | rise        | rise |               |
| SMPCEV0703A-1R0MT | 1.0          | 5.00            | 28.0     | 30.0 | 16.1        | 21.8 | 6.6           |
| SMPCEV0703A-1R5MT | 1.5          | 8.25            | 23.5     | 25.0 | 12.0        | 15.3 | 6.6           |
| SMPCEV0703A-2R2MT | 2.2          | 13.70           | 17.0     | 19.0 | 10.0        | 13.0 | 6.2           |
| SMPCEV0703A-2R7MT | 2.7          | 15.40           | 13.5     | 16.0 | 9.2         | 11.4 | 6.2           |
| SMPCEV0703A-3R3MT | 3.3          | 18.00           | 13.0     | 15.0 | 8.0         | 10.0 | 6.2           |
| SMPCEV0703A-4R7MT | 4.7          | 26.70           | 12.2     | 13.5 | 6.9         | 9.0  | 6.2           |
| SMPCEV0703A-5R6MT | 5.6          | 33.20           | 11.5     | 12.5 | 5.3         | 7.3  | 6.2           |
| SMPCEV0703A-6R8MT | 6.8          | 42.50           | 11.0     | 12.0 | 4.5         | 6.8  | 6.2           |
| SMPCEV0703A-8R2MT | 8.2          | 48.73           | 9.0      | 10.2 | 3.0         | 5.9  | 6.2           |

**SMPCEV0707A- Series**

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      | D(mm)<br>±0.3 |
|-------------------|--------------|-----------------|----------|------|-------------|------|---------------|
|                   | 100KHz /0.1V |                 | Max      | Typ  | 20°C        | 40°C |               |
|                   |              |                 |          |      | rise        | rise |               |
| SMPCEV0707A-3R3MT | 3.3          | 9.42            | 15.1     | 19.4 | 11.5        | 15.1 | 6.7           |
| SMPCEV0707A-4R7MT | 4.7          | 13.50           | 14.0     | 15.5 | 10.5        | 13.6 | 6.7           |
| SMPCEV0707A-6R8MT | 6.8          | 19.60           | 11.0     | 12.8 | 7.0         | 9.5  | 6.5           |

**SMPCEV0808A- Series**

| Part Number        | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      | D(mm)<br>±0.3 |
|--------------------|--------------|-----------------|----------|------|-------------|------|---------------|
|                    | 100KHz /0.1V |                 | Max      | Typ  | 20°C        | 40°C |               |
|                    |              |                 |          |      | rise        | rise |               |
| SMPCEV0808A--1R8MT | 1.8          | 4.0             | 24.0     | 28.0 | 18.0        | 24.0 | 7.2           |
| SMPCEV0808A--2R2MT | 2.2          | 4.3             | 22.0     | 25.0 | 16.0        | 21.5 | 7.2           |
| SMPCEV0808A--3R3MT | 3.3          | 7.3             | 20.0     | 23.0 | 13.5        | 18.0 | 6.9           |
| SMPCEV0808A--4R7MT | 4.7          | 9.8             | 17.0     | 19.0 | 10.5        | 14.6 | 6.9           |
| SMPCEV0808A--6R8MT | 6.8          | 14.3            | 12.5     | 14.5 | 8.0         | 11.3 | 6.9           |
| SMPCEV0808A--100MT | 10.0         | 22.9            | 10.0     | 11.0 | 6.6         | 8.7  | 6.9           |

**SMPCEV1010A- Series**

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      | D(mm)<br>±0.5 |
|-------------------|--------------|-----------------|----------|------|-------------|------|---------------|
|                   | 100KHz /0.1V |                 | Max      | Typ  | 20°C        | 40°C |               |
|                   |              |                 |          |      | rise        | rise |               |
| SMPCEV1010A-3R3MT | 3.3          | 4.1             | 23.4     | 27.4 | 18.2        | 25.0 | 9.3           |
| SMPCEV1010A-4R7MT | 4.7          | 5.7             | 21.4     | 25.4 | 17.5        | 24.0 | 9.3           |
| SMPCEV1010A-5R6MT | 5.6          | 7.2             | 19.6     | 23.6 | 15.7        | 21.2 | 9.3           |
| SMPCEV1010A-6R8MT | 6.8          | 8.9             | 18.5     | 21.8 | 14.0        | 18.5 | 9.0           |
| SMPCEV1010A-8R2MT | 8.2          | 12.4            | 16.3     | 18.3 | 12.9        | 17.1 | 9.0           |
| SMPCEV1010A-100MT | 10.0         | 13.75           | 14.6     | 17.5 | 11.5        | 15.5 | 9.0           |
| SMPCEV1010A-150MT | 15.0         | 19.3            | 12.5     | 15.5 | 9.9         | 13.8 | 9.0           |

|                       |               |                        |  |
|-----------------------|---------------|------------------------|--|
| Semitel'S MODEL NO. : | SMPCEV Series | CUSTOMER'S MODEL NO. : |  |
| VERSION:              | C             | CUSTOMER'S PART NO. :  |  |
| DATE:                 | 2023/7/20     |                        |  |

**SMPCEV1003A- Series**

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      |
|-------------------|--------------|-----------------|----------|------|-------------|------|
|                   | 100KHz /0.1V |                 | Max      | Typ  | 20°C        | 40°C |
|                   |              |                 |          |      | rise        | rise |
| SMPCEV1003A-R28MT | 0.28         | 1.60            | 58.0     | 65.0 | 25.5        | 35.0 |
| SMPCEV1003A-R56MT | 0.56         | 2.75            | 39.0     | 44.0 | 23.0        | 32.0 |
| SMPCEV1003A-R82MT | 0.82         | 4.10            | 32.0     | 38.0 | 18.0        | 25.0 |
| SMPCEV1003A-R90MT | 0.90         | 4.20            | 31.0     | 36.0 | 17.0        | 24.0 |
| SMPCEV1003A-1R0MT | 1.00         | 4.95            | 30.0     | 35.0 | 16.0        | 23.0 |
| SMPCEV1003A-1R5MT | 1.50         | 6.60            | 25.0     | 30.0 | 12.0        | 18.0 |

**SMPCEV1006A- Series**

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      | D(mm)<br>±0.5 |
|-------------------|--------------|-----------------|----------|------|-------------|------|---------------|
|                   | 100KHz /0.1V |                 | Max      | Typ  | 20°C        | 40°C |               |
|                   |              |                 |          |      | rise        | rise |               |
| SMPCEV1006A-R68MT | 0.68         | 1.50            | 50.0     | 55.0 | 22.5        | 34.0 | 9.5           |
| SMPCEV1006A-1R0MT | 1.00         | 2.32            | 44.0     | 48.0 | 20.0        | 28.5 | 9.0           |
| SMPCEV1006A-1R2MT | 1.20         | 2.64            | 40.0     | 45.0 | 18.0        | 26.5 | 9.0           |
| SMPCEV1006A-1R5MT | 1.50         | 3.30            | 36.0     | 40.0 | 16.0        | 24.5 | 9.0           |
| SMPCEV1006A-2R2MT | 2.20         | 4.84            | 30.0     | 35.0 | 14.0        | 20.0 | 9.0           |
| SMPCEV1006A-3R3MT | 3.30         | 7.70            | 25.0     | 28.0 | 11.4        | 16.8 | 9.0           |
| SMPCEV1006A-4R7MT | 4.70         | 10.72           | 22.0     | 25.0 | 8.7         | 14.0 | 9.0           |

**SMPCEV1508A Series**

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      |
|-------------------|--------------|-----------------|----------|------|-------------|------|
|                   | 100KHz /0.1V |                 | Max      | Typ  | 20°C        | 40°C |
|                   |              |                 |          |      | rise        | rise |
| SMPCEV1508A-2R0MT | 2.0          | 2.21            | 52.0     | 57.0 | 29.5        | 40.0 |
| SMPCEV1508A-2R2MT | 2.2          | 2.48            | 49.0     | 55.0 | 28.0        | 37.0 |
| SMPCEV1508A-3R0MT | 3.0          | 3.00            | 41.0     | 46.0 | 26.0        | 34.5 |
| SMPCEV1508A-4R2MT | 4.2          | 4.68            | 33.0     | 38.0 | 20.5        | 27.0 |
| SMPCEV1508A-5R3MT | 5.3          | 5.34            | 31.0     | 35.0 | 19.5        | 26.0 |
| SMPCEV1508A-6R2MT | 6.2          | 6.50            | 31.0     | 34.0 | 17.0        | 23.0 |
| SMPCEV1508A-7R2MT | 7.2          | 7.20            | 29.0     | 32.0 | 15.0        | 21.0 |
| SMPCEV1508A-8R2MT | 8.2          | 7.92            | 25.0     | 28.0 | 13.0        | 19.0 |

|                       |               |                        |  |
|-----------------------|---------------|------------------------|--|
| Semitel'S MODEL NO. : | SMPCEV Series | CUSTOMER'S MODEL NO. : |  |
| VERSION:              | C             | CUSTOMER'S PART NO. :  |  |
| DATE:                 | 2023/7/20     |                        |  |

**SMPCEV1510A- Series**

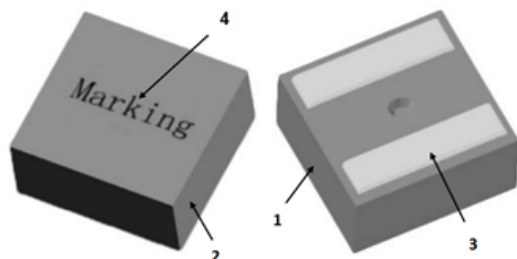
| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      |
|-------------------|--------------|-----------------|----------|------|-------------|------|
|                   | 100KHz /0.1V |                 | Max      | Typ  | 20°C        | 40°C |
|                   |              |                 |          |      | rise        | rise |
| SMPCEV1510A-4R7MT | 4.7          | 3.8             | 39.0     | 43.0 | 22.0        | 30.0 |
| SMPCEV1510A-5R6MT | 5.6          | 4.2             | 34.0     | 38.0 | 21.0        | 28.0 |
| SMPCEV1510A-6R8MT | 6.8          | 4.6             | 31.0     | 36.0 | 20.0        | 26.0 |
| SMPCEV1510A-8R2MT | 8.2          | 7.2             | 28.0     | 32.0 | 19.0        | 25.0 |

**SMPCEV1513A- Series**

| Part Number       | L0 (μH)±20 % | DCR (mΩ)<br>MAX | Isat (A) |      | Irms (A)Typ |      |
|-------------------|--------------|-----------------|----------|------|-------------|------|
|                   | 100KHz /0.1V |                 | Max      | Typ  | 20°C        | 40°C |
|                   |              |                 |          |      | rise        | rise |
| SMPCEV1513A-4R7MT | 4.7          | 3.30            | 40.0     | 44.0 | 23.0        | 31.0 |
| SMPCEV1513A-5R6MT | 5.6          | 3.90            | 35.0     | 40.0 | 22.0        | 29.0 |
| SMPCEV1513A-6R8MT | 6.8          | 4.20            | 32.0     | 37.0 | 21.0        | 27.0 |
| SMPCEV1513A-8R2MT | 8.2          | 5.70            | 29.0     | 33.0 | 20.0        | 26.0 |
| SMPCEV1513A-100MT | 10.0         | 7.00            | 27.0     | 30.0 | 19.0        | 25.0 |
| SMPCEV1513A-150MT | 15.0         | 7.50            | 21.0     | 25.5 | 16.0        | 22.0 |
| SMPCEV1513A-220MT | 22.0         | 13.86           | 19.0     | 22.0 | 12.0        | 17.0 |
| SMPCEV1513A-330MT | 33.0         | 22.20           | 16.0     | 19.0 | 9.0         | 14.0 |

|                       |               |                        |  |
|-----------------------|---------------|------------------------|--|
| Semitel'S MODEL NO. : | SMPCEV Series | CUSTOMER'S MODEL NO. : |  |
| VERSION:              | C             | CUSTOMER'S PART NO. :  |  |
| DATE:                 | 2023/7/20     |                        |  |

### 3. Structure and Components



| NO | Components | Material                      |
|----|------------|-------------------------------|
| 1  | CORE       | Alloy Powder                  |
| 2  | WIRE       | Polyester Wire or equivalent. |
| 3  | Clip       | 100% Pb free solder           |
| 4  | Ink        | Halogen-free ketone           |

### 4. Recommended Soldering Technologies

#### (1) Re-flowing Profile

Preheat condition: 150 ~200°C/60~120sec. Allowed

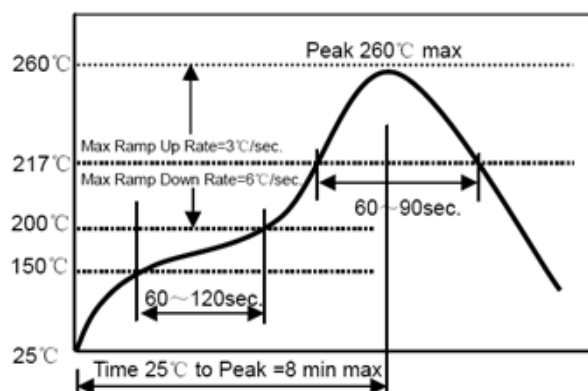
time above 217°C: 60~90sec.

Peak temp: 260°C

Max time at Peak temp: 10 sec.

Solder paste: Sn/3.0Ag/0.5Cu

Allowed Reflow time: 2x max



#### (2) Iron Soldering Profile

**Iron soldering power: Max. 30W**

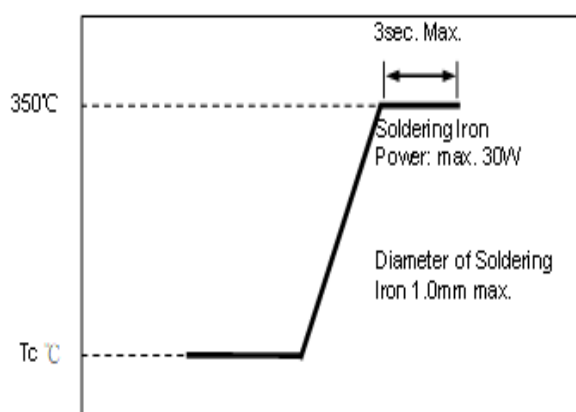
**Pre-heating: 150°C/60sec.**

**Soldering Tip temperature: 350°C Max.**

**Soldering time: 3sec. Max.**

**Solder paste: Sn/3.0Ag/0.5Cu**

**Max.1 times for iron soldering**



Notes :

1. All test in 25 °C temperature.
2. Testing Instrument: L:HP4285A, CH11025, CH3302, CH1320, CH1320S LCR METER / Rdc: CH16502, MICRO OHMMETER.
3. Heating Rating Current (Irms) will cause the coil temperature rise of 40°C approximately ( $\Delta t$ ) :
4. Saturation Current (Isat) will cause L0 to drop 30% approximately.
5. The part temperature (ambient + temp rise) should not exceed 125°C under the worst case operating condition. Circuit design, component, PCB trace size and thickness airflow and other cooling provisions all could affect the part temperature. Part temperature should be verified in the end application.
6. Special inquiries besides the above common used types can be met on your requirement.
7. Note : Using Ink for marking

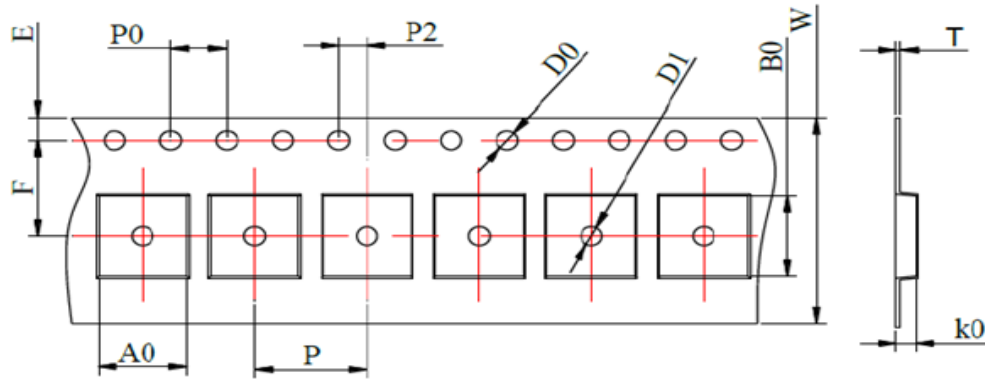
|                       |               |                        |  |
|-----------------------|---------------|------------------------|--|
| Semitel'S MODEL NO. : | SMPCEV Series | CUSTOMER'S MODEL NO. : |  |
| VERSION:              | C             | CUSTOMER'S PART NO. :  |  |
| DATE:                 | 2023/7/20     |                        |  |

| Mechanical Reliability   |                                                                                           |                                                                                                                                                                                                                                           |
|--------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Item                     | Specification and Requirement                                                             | Test Method                                                                                                                                                                                                                               |
| Solderability            | 1. No case deformation or change in visual<br>2. New solder coverage More than 95%        | 1.Preheat: $155^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , $60\text{S} \pm 2\text{S}$<br>2.Tin: lead-free.<br>3.Temperature: $240^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , flux $3.0\text{S} \pm 0.5\text{S}$ .                             |
| Mechanical shock         | 1. No case deformation or change in visual<br>2. $\Delta\text{L}/\text{Lo} \leq \pm 10\%$ | 1. Acceleration: 100G<br>2. Pulse time: 6ms<br>3. 3 times in each positive and negative direction of 3 mutual perpendicular directions                                                                                                    |
| Mechanical vibration     | 1. No case deformation or change in visual<br>2. $\Delta\text{L}/\text{Lo} \leq \pm 10\%$ | 1. Reflow: 2times<br>2. Frequency: $10\text{HZ} \sim 50\text{HZ} \sim 10\text{HZ}$ , 20 Min/Cycles<br>3. Amplitude: $1.52\text{ mm} \pm 10\%$<br>4. Directions: X,Y,Z<br>5. Time: 12 cycle / direction                                    |
| Endurance Reliability    |                                                                                           |                                                                                                                                                                                                                                           |
| Item                     | Specification and Requirement                                                             | Test Method                                                                                                                                                                                                                               |
| Thermal Shock            | Inductance change:<br>Within $\pm 10\%$ Without distinct damage in visual                 | 1. First $-55^{\circ}\text{C}$ for 30 minutes , last $125^{\circ}\text{C}$ for 30 minutes as 1 cycle. Go through 1000 cycles.<br>2. Max transfer time is 3 minutes.<br>3. Measured at room temperature after placing for $24 \pm 2$ hours |
| Humidity Resistance      | Inductance change:<br>Within $\pm 10\%$ Without distinct damage in visual                 | 1.Reflow 2 times,<br>2. $85^{\circ}\text{C} \pm 3^{\circ}\text{C}$ , $85\% \pm 3\%\text{RH}$ , 1000 hours<br>3.Measured at room temperature after placing for $24 \pm 2$ hours                                                            |
| Low temperature storage  | Inductance change:<br>Within $\pm 10\%$ Without distinct damage in visual                 | 1. Temperature: $-55 \pm 2^{\circ}\text{C}$<br>2. Time: 1000 hours<br>3. Measured at room temperature after placing for $24 \pm 2$ hours                                                                                                  |
| High temperature storage | Inductance change:<br>Within $\pm 10\%$ Without distinct damage in visual                 | 1. Temperature: $+125 \pm 2^{\circ}\text{C}$<br>2. Time: 1000 hours<br>3. Measured at room temperature after placing for $24 \pm 2$ hours                                                                                                 |

|                       |               |                        |  |
|-----------------------|---------------|------------------------|--|
| Semitel'S MODEL NO. : | SMPCEV Series | CUSTOMER'S MODEL NO. : |  |
| VERSION:              | C             | CUSTOMER'S PART NO. :  |  |
| DATE:                 | 2023/7/20     |                        |  |

## 5. Packaging Information

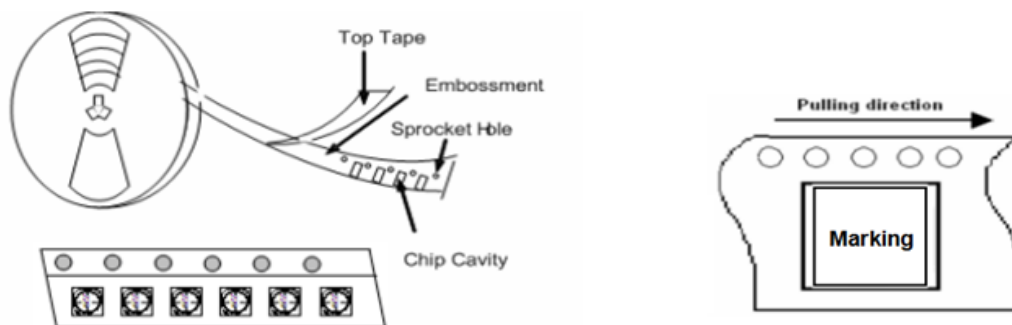
### (1) Tape Packaging Dimensions (Unit : mm)



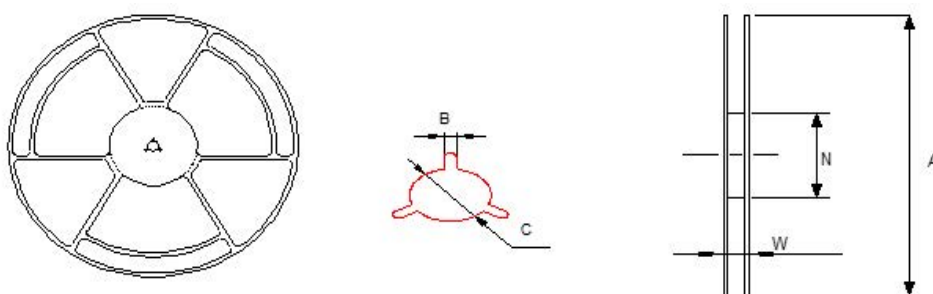
| Type        | W      | P      | P0    | P2     | D0      | D1      | T         | A0       | B0       | K0       | E        | F        |
|-------------|--------|--------|-------|--------|---------|---------|-----------|----------|----------|----------|----------|----------|
| SMPCEV0402A | 12±0.3 | 8±0.1  | 4±0.1 | 2±0.1  | 1.5±0.1 | 1.5±0.1 | 0.35±0.05 | 4.4±0.1  | 4.4±0.1  | 2.3±0.1  | 1.75±0.1 | 5.5±0.1  |
| SMPCEV0403A | 12±0.3 | 8±0.1  | 4±0.1 | 2±0.1  | 1.5±0.1 | 1.5±0.1 | 0.35±0.05 | 4.4±0.1  | 4.4±0.1  | 3.3±0.1  | 1.75±0.1 | 5.5±0.1  |
| SMPCEV0502A | 12±0.3 | 8±0.3  | 4±0.1 | 2±0.1  | 1.5±0.1 | 1.5±0.1 | 0.35±0.05 | 6±0.1    | 5.7±0.1  | 2.3±0.1  | 1.75±0.1 | 5.5±0.1  |
| SMPCEV0503A | 16±0.3 | 8±0.1  | 4±0.1 | 2±0.1  | 1.5±0.1 | 1.5±0.1 | 0.35±0.05 | 6±0.1    | 5.7±0.1  | 3.3±0.1  | 1.75±0.1 | 7.5±0.1  |
| SMPCEV0505A | 16±0.3 | 8±0.1  | 4±0.1 | 2±0.1  | 1.5±0.1 | 1.5±0.1 | 0.35±0.05 | 6±0.1    | 5.7±0.1  | 5.3±0.1  | 1.75±0.1 | 7.5±0.1  |
| SMPCEV0603A | 16±0.3 | 12±0.1 | 4±0.1 | 2±0.1  | 1.5±0.1 | 1.5±0.1 | 0.35±0.05 | 7±0.1    | 6.8±0.1  | 3.3±0.1  | 1.75±0.1 | 7.5±0.1  |
| SMPCEV0605A | 16±0.3 | 12±0.1 | 4±0.1 | 2±0.1  | 1.5±0.1 | 1.5±0.1 | 0.35±0.05 | 7±0.1    | 6.8±0.1  | 5.3±0.1  | 1.75±0.1 | 7.5±0.1  |
| SMPCEV0606A | 16±0.3 | 12±0.1 | 4±0.1 | 2±0.1  | 1.5±0.1 | 1.5±0.1 | 0.35±0.05 | 7±0.1    | 6.8±0.1  | 6.3±0.1  | 1.75±0.1 | 7.5±0.1  |
| SMPCEV0702A | 16±0.3 | 12±0.1 | 4±0.1 | 2±0.1  | 1.5±0.1 | 1.5±0.1 | 0.35±0.05 | 8.2±0.1  | 8±0.1    | 2.3±0.1  | 1.75±0.1 | 7.5±0.1  |
| SMPCEV0703A | 16±0.3 | 12±0.1 | 4±0.1 | 2±0.1  | 1.5±0.1 | 1.5±0.1 | 0.35±0.05 | 8.2±0.1  | 8±0.1    | 3.3±0.1  | 1.75±0.1 | 7.5±0.1  |
| SMPCEV0707A | 16±0.3 | 12±0.1 | 4±0.1 | 2±0.1  | 1.5±0.1 | 1.5±0.1 | 0.35±0.05 | 8.2±0.1  | 8±0.1    | 7.3±0.1  | 1.75±0.1 | 7.5±0.1  |
| SMPCEV0808A | 24±0.3 | 16±0.1 | 4±0.1 | 2±0.05 | 1.5±0.1 | 1.5±0.1 | 0.35±0.05 | 9.4±0.1  | 8.5±0.1  | 8.5±0.1  | 1.75±0.1 | 11.5±0.1 |
| SMPCEV1010A | 24±0.3 | 16±0.1 | 4±0.1 | 2±0.05 | 1.5±0.1 | 1.5±0.1 | 0.35±0.05 | 12.4±0.1 | 11.5±0.1 | 10.3±0.1 | 1.75±0.1 | 11.5±0.1 |
| SMPCEV1003A | 24±0.3 | 16±0.1 | 4±0.1 | 2±0.05 | 1.5±0.1 | 1.5±0.1 | 0.35±0.05 | 12.4±0.1 | 11.5±0.1 | 3.3±0.1  | 1.75±0.1 | 11.5±0.1 |
| SMPCEV1006A | 24±0.3 | 16±0.1 | 4±0.1 | 2±0.05 | 1.5±0.1 | 1.5±0.1 | 0.35±0.05 | 12.4±0.1 | 11.5±0.1 | 6.3±0.1  | 1.75±0.1 | 11.5±0.1 |
| SMPCEV1508A | 32±0.3 | 24±0.1 | 4±0.1 | 2±0.1  | 1.5±0.1 | 1.5±0.1 | 0.5±0.05  | 17±0.1   | 16±0.1   | 8.5±0.1  | 1.75±0.1 | 14.2±0.1 |
| SMPCEV1510A | 32±0.3 | 24±0.1 | 4±0.1 | 2±0.1  | 1.5±0.1 | 1.5±0.1 | 0.5±0.05  | 17±0.1   | 16±0.1   | 10.5±0.1 | 1.75±0.1 | 14.2±0.1 |
| SMPCEV1513A | 32±0.3 | 24±0.1 | 4±0.1 | 2±0.1  | 1.5±0.1 | 1.5±0.1 | 0.5±0.05  | 17±0.1   | 16±0.1   | 13.6±0.1 | 1.75±0.1 | 14.2±0.1 |

|                       |               |                        |  |
|-----------------------|---------------|------------------------|--|
| Semitel'S MODEL NO. : | SMPCEV Series | CUSTOMER'S MODEL NO. : |  |
| VERSION:              | C             | CUSTOMER'S PART NO. :  |  |
| DATE:                 | 2023/7/20     |                        |  |

## Taping Drawings (UNIT:mm)



## (2) Reel Dimensions (Unit : mm)



| A       | W        | N      | B       | C        |
|---------|----------|--------|---------|----------|
| 330±2.0 | 12.8±0.2 | 97±0.5 | 2.2±0.5 | 13.0±0.2 |

|                       |               |                        |  |
|-----------------------|---------------|------------------------|--|
| Semitel'S MODEL NO. : | SMPCEV Series | CUSTOMER'S MODEL NO. : |  |
| VERSION:              | C             | CUSTOMER'S PART NO. :  |  |
| DATE:                 | 2023/7/20     |                        |  |

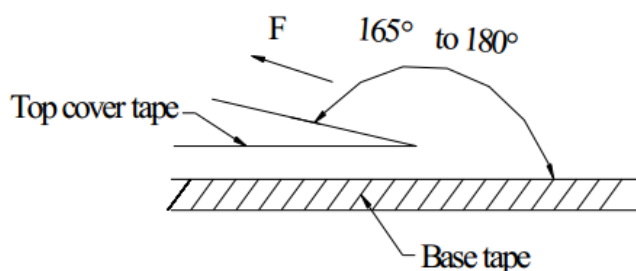
### (3) Packaging Quantity

| Type        | Standard Quantity<br>(pcs/reel) | Type        | Standard Quantity<br>(pcs/reel) |
|-------------|---------------------------------|-------------|---------------------------------|
| SMPCEV0402A | 3000                            | SMPCEV0707A | 700                             |
| SMPCEV0403A | 2000                            | SMPCEV0808A | 450                             |
| SMPCEV0502A | 3000                            | SMPCEV1010A | 300                             |
| SMPCEV0503A | 2000                            | SMPCEV1003A | 1000                            |
| SMPCEV0505A | 1500                            | SMPCEV1006A | 500                             |
| SMPCEV0603A | 1000                            | SMPCEV1508A | 200                             |
| SMPCEV0605A | 800                             | SMPCEV1510A | 150                             |
| SMPCEV0606A | 750                             | SMPCEV1513A | 100                             |
| SMPCEV0702A | 2000                            |             |                                 |
| SMPCEV0703A | 1500                            |             |                                 |

### (4) Peel force of top cover tape

The peel speed shall be about 300mm/minute

The peel force of top cover tape shall be between 0.1 to 1.3 N



|                       |               |                        |  |
|-----------------------|---------------|------------------------|--|
| Semitel'S MODEL NO. : | SMPCEV Series | CUSTOMER'S MODEL NO. : |  |
| VERSION:              | C             | CUSTOMER'S PART NO. :  |  |
| DATE:                 | 2023/7/20     |                        |  |