



MORE[®] | 茂昌电子
CHANCE

CUSTOMER : STD
PRODUCTS : SHIELDED SMD Power Inductor
PART NO : MCSCS Series
CUST P/ NO :
DATE : 2021.11.30
SALES DEP :
E-MAIL :

VERSION : REV.C
CHANGE PROJECT : -
BEFORE : -
AFTER : -
CHANGE DATE : -
CUSTOMER SIGNATURE : -

| | | |
|----------------------|-------------------|-------------------|
| APPROVAL BY : | CHECK BY : | DRAWN BY : |
| <i>Honey Wei</i> | <i>Leo Wang</i> | <i>May Gao</i> |



MORE[®] | 茂昌电子
CHANCE

Suzhou, Wuzhong District, Taihu East Road No.9, Wuluo science and Technology Park, 4th floor, 401/408 Room
Specifications subject to change without notice. Please confirm according to our company for latest information.

TEL : 0512-6856-2977
TEL : 0755-2738-9457

MCSCS Series



- SHIELDED SMD POWER INDUCTOR
- Operating Temperature up to $-40\text{ }^{\circ}\text{C} \sim 125\text{ }^{\circ}\text{C}$
- High Current up to 8.5 A
- Low DCR down to 10 mOhms
- Environmental Lead free
- Environmental RoHS2.0 compliant
- Environmental halogen free
- Storage Temperature : $-40\text{ }^{\circ}\text{C} \sim +85\text{ }^{\circ}\text{C}$
- Packaging 13"Reel ,Plastic tape: 12/16 mm wide

FEATURES

- Large permissible DC current and low DC resistance.
- Compact and thin.
- Low cost and packed in embossed carrier tape.

Applications

- DC/DC Converter of portable equipment.
- Camcorder, LCD TV set, Digital still camera, PDA.
- Small size communication equipment.

PRODUCT IDENTIFICATION

MC SCS 316 Z R47 N
 ① ② ③ ④ ⑤ ⑥

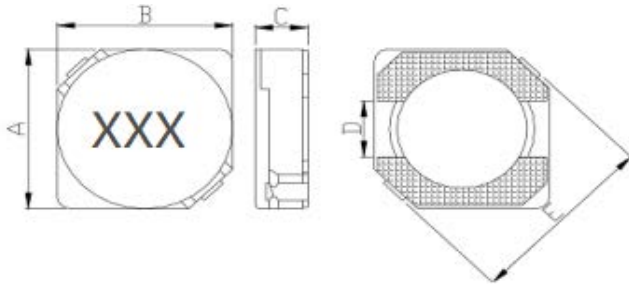
- ① Brand & Product classification
- ② Product Series NO.
- ③ External Dimensions.(316: L:3.0 × W:3.0 × H:1.6) [mm]
- ④ Separator code.
- ⑤ Inductance. (Exp. 0.47 uH = R47)

| Example | Nominal Value |
|---------|---------------|
| R47 | 0.47uH |
| 1R5 | 1.5uH |
| 1R0 | 1.0uH |
| 2R2 | 2.2uH |
| | |

- ⑥ Inductance Tolerance.(L: $\pm 15\%$; M: $\pm 20\%$; N: $\pm 30\%$)

Mechanical & Dimensions

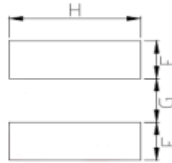
(Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 3.8 ± 0.2 |
| B | 3.8 ± 0.2 |
| C | 1.8 Max |
| D | 1.15 Ref |
| E | 5.20 Ref |

Recommend Land Pattern Dimensions

(Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 1.6 Ref |
| G | 1.2 Ref |
| H | 4.4 Ref |

Electrical Characteristics

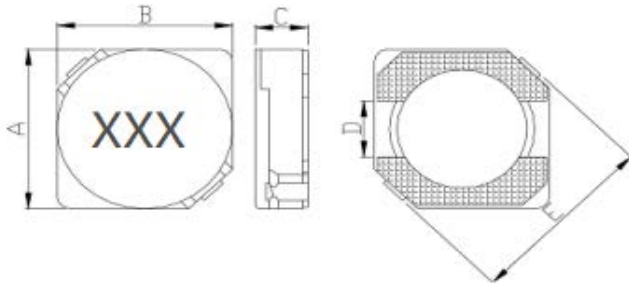
| Part Number | Inductance ¹ (μH) | DCR2 (mΩ) Max | I-sat ³ (Amps) Typ | Marking | | |
|---------------|---------------------------------|------------------|----------------------------------|---------|--|--|
| MCSCS316ZR47N | 0.47 ± 30% | 35.0 | 2.75 | R47 | | |
| MCSCS316Z1R0N | 1.0 ± 30% | 50.0 | 1.90 | 1R0 | | |
| MCSCS316Z1R5N | 1.5 ± 30% | 52.0 | 1.55 | 1R5 | | |
| MCSCS316Z2R2N | 2.2 ± 30% | 72.0 | 1.20 | 2R2 | | |
| MCSCS316Z3R3N | 3.3 ± 30% | 85.0 | 1.10 | 3R3 | | |
| MCSCS316Z4R7N | 4.7 ± 30% | 105.0 | 0.90 | 4R7 | | |
| MCSCS316Z6R8N | 6.8 ± 30% | 170.0 | 0.73 | 6R8 | | |
| MCSCS316Z100N | 10.0 ± 30% | 210.0 | 0.55 | 100 | | |
| MCSCS316Z150N | 15.0 ± 30% | 295.0 | 0.45 | 150 | | |
| MCSCS316Z220N | 22.0 ± 30% | 430.0 | 0.40 | 220 | | |
| MCSCS316Z330N | 33.0 ± 30% | 675.0 | 0.32 | 330 | | |
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Note:

1. Inductance is measured at 100 KHz and 1.0 Vrms.
2. The nominal DCR is measured at 25°C ambient temperature.
3. The I-sat that will cause initial inductance value approximately 35% rolloff.

Mechanical & Dimensions

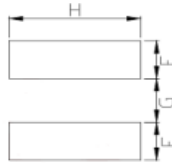
(Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 3.8 ± 0.2 |
| B | 3.8 ± 0.2 |
| C | 2.0 Max |
| D | 1.15 Ref |
| E | 5.20 Ref |

Recommend Land Pattern Dimensions

(Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 1.6 Ref |
| G | 1.2 Ref |
| H | 4.4 Ref |

Electrical Characteristics

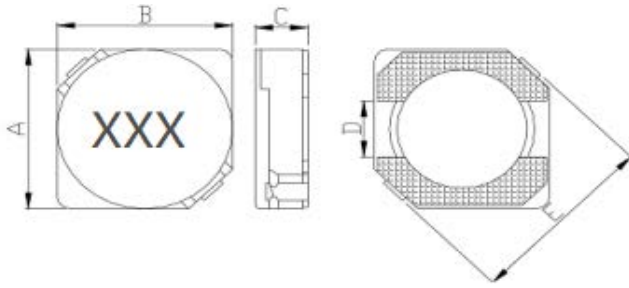
| Part Number | Inductance ¹ (μH) | DCR2 (mΩ) Max | I-sat ³ (Amps) Typ | Marking | | |
|---------------|---------------------------------|------------------|----------------------------------|---------|--|--|
| MCSCS318Z1R0N | 1.0 ± 30% | 50.0 | 2.80 | 1R0 | | |
| MCSCS318Z2R2N | 2.2 ± 30% | 63.0 | 1.80 | 2R2 | | |
| MCSCS318Z3R0N | 3.0 ± 30% | 69.0 | 1.60 | 3R0 | | |
| MCSCS318Z4R7N | 4.7 ± 30% | 108.0 | 1.35 | 4R7 | | |
| MCSCS318Z6R8N | 6.8 ± 30% | 150.0 | 1.10 | 6R8 | | |
| MCSCS318Z100N | 10.0 ± 30% | 205.0 | 0.90 | 100 | | |
| MCSCS318Z120N | 12.0 ± 30% | 275.0 | 0.80 | 120 | | |
| MCSCS318Z150N | 15.0 ± 30% | 302.0 | 0.75 | 150 | | |
| MCSCS318Z220N | 22.0 ± 30% | 424.0 | 0.60 | 220 | | |
| MCSCS318Z330N | 33.0 ± 30% | 640.0 | 0.50 | 330 | | |
| MCSCS318Z470N | 47.0 ± 30% | 964.0 | 0.40 | 470 | | |
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Note:

1. Inductance is measured at 100 KHz and 1.0 Vrms.
2. The nominal DCR is measured at 25°C ambient temperature.
3. The I-sat that will cause initial inductance value approximately 35% rolloff.

Mechanical & Dimensions

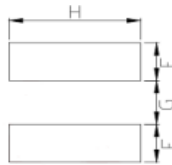
(Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 3.8 ± 0.2 |
| B | 3.8 ± 0.2 |
| C | 3.1 Max |
| D | 1.15 Ref |
| E | 5.20 Ref |

Recommend Land Pattern Dimensions

(Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 1.6 Ref |
| G | 1.2 Ref |
| H | 4.4 Ref |

Electrical Characteristics

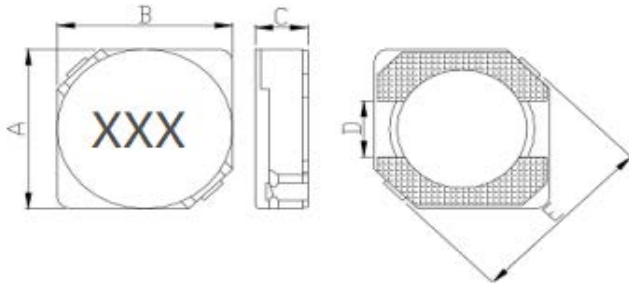
| Part Number | Inductance ¹ (μH) | DCR ² (mΩ) Max | I-sat ³ (Amps) Typ | Marking | | |
|---------------|---------------------------------|------------------------------|----------------------------------|---------|--|--|
| MCSCS328Z100N | 10.0 ± 30% | 92.0 | 0.50 | 100 | | |
| MCSCS328Z120N | 12.0 ± 30% | 100.0 | 0.45 | 120 | | |
| MCSCS328Z150N | 15.0 ± 30% | 113.0 | 0.40 | 150 | | |
| MCSCS328Z180N | 18.0 ± 30% | 125.0 | 0.35 | 180 | | |
| MCSCS328Z220N | 22.0 ± 30% | 146.0 | 0.33 | 220 | | |
| MCSCS328Z270N | 27.0 ± 30% | 176.0 | 0.29 | 270 | | |
| MCSCS328Z330N | 33.0 ± 30% | 214.0 | 0.28 | 330 | | |
| MCSCS328Z390N | 39.0 ± 30% | 225.0 | 0.25 | 390 | | |
| MCSCS328Z470N | 47.0 ± 30% | 304.0 | 0.23 | 470 | | |
| MCSCS328Z560N | 56.0 ± 30% | 324.0 | 0.20 | 560 | | |
| MCSCS328Z680N | 68.0 ± 30% | 472.0 | 0.18 | 680 | | |
| MCSCS328Z820N | 82.0 ± 30% | 539.0 | 0.17 | 820 | | |
| MCSCS328Z101M | 100.0 ± 20% | 608.0 | 0.16 | 101 | | |
| MCSCS328Z121M | 120.0 ± 20% | 757.0 | 0.13 | 121 | | |
| MCSCS328Z151M | 150.0 ± 20% | 882.0 | 0.12 | 151 | | |
| MCSCS328Z181M | 180.0 ± 20% | 1130.0 | 0.11 | 181 | | |
| MCSCS328Z221M | 220.0 ± 20% | 1269.0 | 0.10 | 221 | | |

Note:

1. Inductance is measured at 100 KHz and 1.0 Vrms.
2. The nominal DCR is measured at 25°C ambient temperature.
3. The I-sat that will cause initial inductance value approximately 35% rolloff.

Mechanical & Dimensions

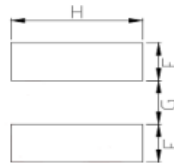
(Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 4.7 ± 0.3 |
| B | 4.7 ± 0.3 |
| C | 2.0 Max |
| D | 1.5 Ref |
| E | 6.9 Ref |

Recommend Land Pattern Dimensions

(Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 1.9 Ref |
| G | 1.5 Ref |
| H | 5.3 Ref |

Electrical Characteristics

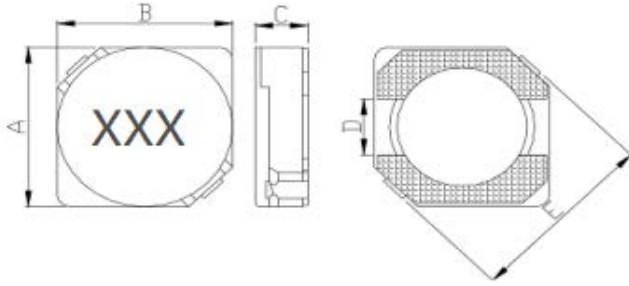
| Part Number | Inductance ¹ (μH) | DCR ² (mΩ) Max | I-sat ³ (Amps) Typ | Marking | | |
|---------------|---------------------------------|------------------------------|----------------------------------|---------|--|--|
| MCSCS418Z1R0N | 1.0 ± 30% | 45.0 | 1.72 | 1R0 | | |
| MCSCS418Z2R2N | 2.2 ± 30% | 75.0 | 1.32 | 2R2 | | |
| MCSCS418Z2R7N | 2.7 ± 30% | 105.0 | 1.28 | 2R7 | | |
| MCSCS418Z3R3N | 3.3 ± 30% | 110.0 | 1.04 | 3R3 | | |
| MCSCS418Z3R9N | 3.9 ± 30% | 155.0 | 0.88 | 3R9 | | |
| MCSCS418Z4R7N | 4.7 ± 30% | 162.0 | 0.84 | 4R7 | | |
| MCSCS418Z5R6N | 5.6 ± 30% | 170.0 | 0.80 | 5R6 | | |
| MCSCS418Z6R8N | 6.8 ± 30% | 200.0 | 0.76 | 6R8 | | |
| MCSCS418Z8R2N | 8.2 ± 30% | 245.0 | 0.68 | 8R2 | | |
| MCSCS418Z100N | 10.0 ± 30% | 200.0 | 0.61 | 100 | | |
| MCSCS418Z120N | 12.0 ± 30% | 210.0 | 0.56 | 120 | | |
| MCSCS418Z150N | 15.0 ± 30% | 240.0 | 0.50 | 150 | | |
| MCSCS418Z180N | 18.0 ± 30% | 338.0 | 0.48 | 180 | | |
| MCSCS418Z220N | 22.0 ± 30% | 397.0 | 0.41 | 220 | | |
| MCSCS418Z270N | 27.0 ± 30% | 441.0 | 0.35 | 270 | | |
| MCSCS418Z330N | 33.0 ± 30% | 694.0 | 0.32 | 330 | | |
| MCSCS418Z390N | 39.0 ± 30% | 709.0 | 0.30 | 390 | | |
| MCSCS418Z470N | 47.0 ± 30% | 922.0 | 0.28 | 470 | | |

Note:

1. Inductance is measured at 100 KHz and 1.0 Vrms.
2. The nominal DCR is measured at 25°C ambient temperature.
3. The I-sat that will cause initial inductance value approximately 35% rolloff.

Mechanical & Dimensions

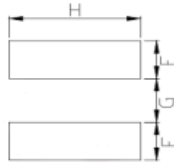
(Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 4.7 ± 0.3 |
| B | 4.7 ± 0.3 |
| C | 2.0 Max |
| D | 1.5 Ref |
| E | 6.9 Ref |

Recommend Land Pattern Dimensions

(Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 1.9 Ref |
| G | 1.5 Ref |
| H | 5.3 Ref |

Electrical Characteristics

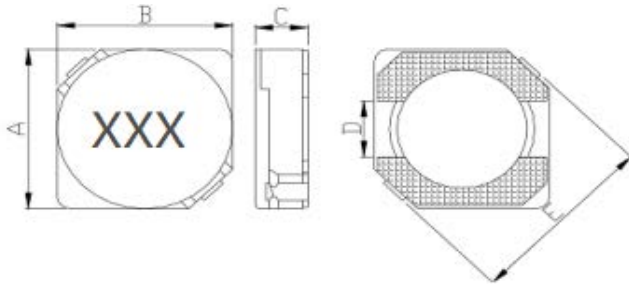
| Part Number | Inductance ¹ (μH) | DCR ² (mΩ) Max | I-sat ³ (Amps) Typ | Marking | | |
|---------------|---------------------------------|------------------------------|----------------------------------|---------|--|--|
| MCSCS418Z560N | 56.0 ± 30% | 1080.0 | 0.26 | 560 | | |
| MCSCS418Z680N | 68.0 ± 30% | 1300.0 | 0.24 | 680 | | |
| MCSCS418Z820N | 82.0 ± 30% | 1550.0 | 0.22 | 820 | | |
| MCSCS418Z101M | 100.0 ± 20% | 1730.0 | 0.20 | 101 | | |
| MCSCS418Z121M | 120.0 ± 20% | 2390.0 | 0.18 | 121 | | |
| MCSCS418Z151M | 150.0 ± 20% | 2670.0 | 0.15 | 151 | | |
| MCSCS418Z181M | 180.0 ± 20% | 4000.0 | 0.14 | 181 | | |
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Note:

- Inductance is measured at 100 KHz and 1.0 Vrms.
- The nominal DCR is measured at 25°C ambient temperature.
- The I-sat that will cause initial inductance value approximately 35% rolloff.

Mechanical & Dimensions

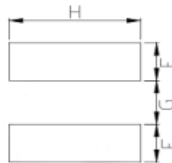
(Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 4.7 ± 0.3 |
| B | 4.7 ± 0.3 |
| C | 3.0 Max |
| D | 1.5 Ref |
| E | 6.9 Ref |

Recommend Land Pattern Dimensions

(Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 1.9 Ref |
| G | 1.5 Ref |
| H | 5.3 Ref |

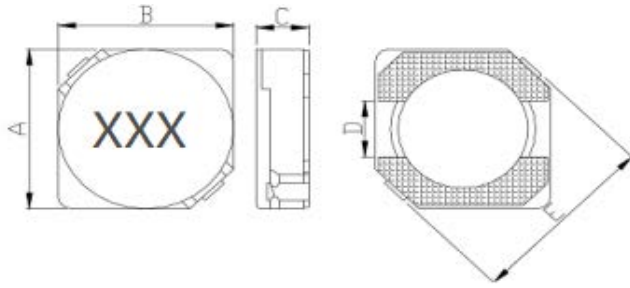
Electrical Characteristics

| Part Number | Inductance ¹ (μH) | DCR ² (mΩ) Max | I-sat ³ (Amps) Typ | Marking | | |
|---------------|---------------------------------|------------------------------|----------------------------------|---------|--|--|
| MCSCS428Z1R2N | 1.2 ± 30% | 24.0 | 2.56 | 1R2 | | |
| MCSCS428Z1R8N | 1.8 ± 30% | 28.0 | 2.20 | 1R8 | | |
| MCSCS428Z2R2N | 2.2 ± 30% | 31.0 | 2.04 | 2R2 | | |
| MCSCS428Z2R7N | 2.7 ± 30% | 43.0 | 1.60 | 2R7 | | |
| MCSCS428Z3R3N | 3.3 ± 30% | 49.0 | 1.57 | 3R3 | | |
| MCSCS428Z3R9N | 3.9 ± 30% | 65.0 | 1.44 | 3R9 | | |
| MCSCS428Z4R7N | 4.7 ± 30% | 72.0 | 1.32 | 4R7 | | |
| MCSCS428Z5R6N | 5.6 ± 30% | 101.0 | 1.17 | 5R6 | | |
| MCSCS428Z6R8N | 6.8 ± 30% | 109.0 | 1.12 | 6R8 | | |
| MCSCS428Z8R2N | 8.2 ± 30% | 118.0 | 1.04 | 8R2 | | |
| MCSCS428Z100N | 10.0 ± 30% | 128.0 | 1.00 | 100 | | |
| MCSCS428Z120N | 12.0 ± 30% | 132.0 | 0.84 | 120 | | |
| MCSCS428Z150N | 15.0 ± 30% | 149.0 | 0.76 | 150 | | |
| MCSCS428Z180N | 18.0 ± 30% | 166.0 | 0.72 | 180 | | |
| MCSCS428Z220N | 22.0 ± 30% | 235.0 | 0.70 | 220 | | |
| MCSCS428Z270N | 27.0 ± 30% | 261.0 | 0.58 | 270 | | |
| MCSCS428Z330N | 33.0 ± 30% | 378.0 | 0.56 | 330 | | |

Note:

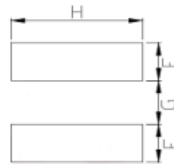
1. Inductance is measured at 100 KHz and 1.0 Vrms.
2. The nominal DCR is measured at 25°C ambient temperature.
3. The I-sat that will cause initial inductance value approximately 35% rolloff.

Mechanical & Dimensions (Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 4.7 ± 0.3 |
| B | 4.7 ± 0.3 |
| C | 3.0 Max |
| D | 1.5 Ref |
| E | 6.9 Ref |
| | |
| | |

Recommend Land Pattern Dimensions (Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 1.9 Ref |
| G | 1.5 Ref |
| H | 5.3 Ref |
| | |
| | |

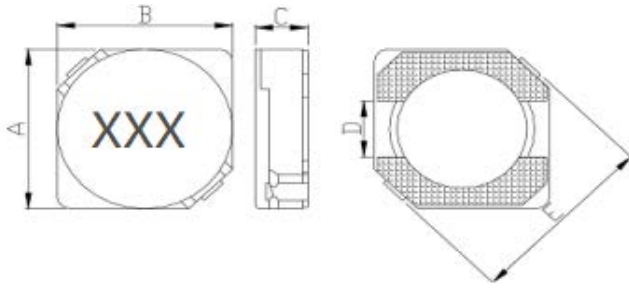
Electrical Characteristics

| Part Number | Inductance ¹ (μH) | DCR ² (mΩ) Max | I-sat ³ (Amps) Typ | Marking | | |
|---------------|---------------------------------|------------------------------|----------------------------------|---------|--|--|
| MCSCS428Z390N | 39.0 ± 30% | 384.0 | 0.50 | 390 | | |
| MCSCS428Z470N | 47.0 ± 30% | 587.0 | 0.48 | 470 | | |
| MCSCS428Z560N | 56.0 ± 30% | 625.0 | 0.41 | 560 | | |
| MCSCS428Z680N | 68.0 ± 30% | 699.0 | 0.35 | 680 | | |
| MCSCS428Z820N | 82.0 ± 30% | 915.0 | 0.32 | 820 | | |
| MCSCS428Z101M | 100.0± 20% | 1020.0 | 0.29 | 101 | | |
| MCSCS428Z121M | 120.0± 20% | 1270.0 | 0.27 | 121 | | |
| MCSCS428Z151M | 150.0± 20% | 1350.0 | 0.24 | 151 | | |
| MCSCS428Z181M | 180.0± 20% | 1540.0 | 0.22 | 181 | | |
| MCSCS428Z221M | 220.0± 20% | 1720.0 | 0.20 | 221 | | |
| MCSCS428Z271M | 270.0± 20% | 1950.0 | 0.16 | 271 | | |
| MCSCS428Z331M | 330.0± 20% | 2660.0 | 0.14 | 331 | | |
| MCSCS428Z391M | 390.0± 20% | 2830.0 | 0.13 | 391 | | |
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Note:
 1. Inductance is measured at 100 KHz and 1.0 Vrms.
 2. The nominal DCR is measured at 25°C ambient temperature.
 3. The I-sat that will cause initial inductance value approximately 35% rolloff.

Mechanical & Dimensions

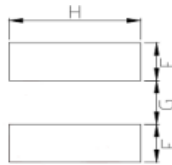
(Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 5.7 ± 0.3 |
| B | 5.7 ± 0.3 |
| C | 2.0 Max |
| D | 2.0 Ref |
| E | 8.2 Ref |

Recommend Land Pattern Dimensions

(Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 2.15 Ref |
| G | 2.0 Ref |
| H | 6.3 Ref |

Electrical Characteristics

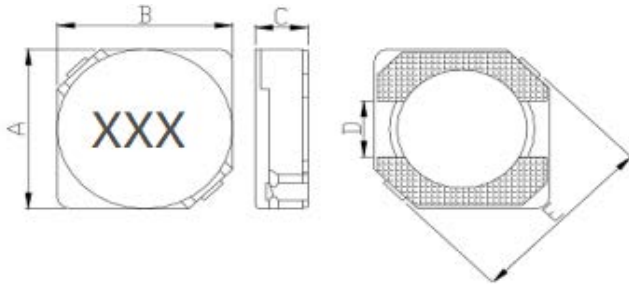
| Part Number | Inductance ¹ (μH) | DCR ² (mΩ) Max | I-sat ³ (Amps) Typ | Marking | | |
|---------------|---------------------------------|------------------------------|----------------------------------|---------|--|--|
| MCSCS518Z4R1N | 4.1 ± 30% | 57.0 | 1.95 | 4R1 | | |
| MCSCS518Z6R2N | 6.2 ± 30% | 96.0 | 1.40 | 6R2 | | |
| MCSCS518Z100N | 10.0 ± 30% | 124.0 | 1.20 | 100 | | |
| MCSCS518Z120N | 12.0 ± 30% | 153.0 | 1.10 | 120 | | |
| MCSCS518Z150N | 15.0 ± 30% | 196.0 | 0.97 | 150 | | |
| MCSCS518Z180N | 18.0 ± 30% | 210.0 | 0.85 | 180 | | |
| MCSCS518Z220N | 22.0 ± 30% | 290.0 | 0.80 | 220 | | |
| MCSCS518Z330N | 33.0 ± 30% | 386.0 | 0.65 | 330 | | |
| MCSCS518Z470N | 47.0 ± 30% | 595.0 | 0.54 | 470 | | |
| MCSCS518Z680N | 68.0 ± 30% | 840.0 | 0.43 | 680 | | |
| MCSCS518Z820N | 82.0 ± 30% | 978.0 | 0.41 | 820 | | |
| MCSCS518Z101M | 100.0± 20% | 1200.0 | 0.36 | 101 | | |
| MCSCS518Z121M | 120.0± 20% | 1500.0 | 0.33 | 121 | | |
| MCSCS518Z151M | 150.0± 20% | 1710.0 | 0.31 | 151 | | |
| MCSCS518Z181M | 180.0± 20% | 2240.0 | 0.28 | 181 | | |
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Note:

1. Inductance is measured at 100 KHz and 1.0 Vrms.
2. The nominal DCR is measured at 25°C ambient temperature.
3. The I-sat that will cause initial inductance value approximately 35% rolloff.

Mechanical & Dimensions

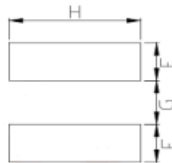
(Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 5.7 ± 0.3 |
| B | 5.7 ± 0.3 |
| C | 3.0 Max |
| D | 2.0 Ref |
| E | 8.2 Ref |

Recommend Land Pattern Dimensions

(Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 2.15 Ref |
| G | 2.0 Ref |
| H | 6.3 Ref |

Electrical Characteristics

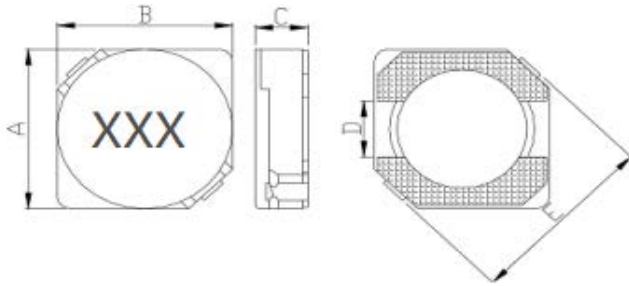
| Part Number | Inductance ¹ (μH) | DCR2 (mΩ) Max | I-sat ³ (Amps) Typ | Marking | | |
|---------------|---------------------------------|------------------|----------------------------------|---------|--|--|
| MCSCS528Z1R0N | 1.0 ± 30% | 15.0 | 2.80 | 1R0 | | |
| MCSCS528Z2R2N | 2.2 ± 30% | 23.0 | 2.60 | 2R2 | | |
| MCSCS528Z5R6N | 5.6 ± 30% | 38.0 | 1.90 | 5R6 | | |
| MCSCS528Z8R2N | 8.2 ± 30% | 53.0 | 1.60 | 8R2 | | |
| MCSCS528Z100N | 10.0 ± 30% | 65.0 | 1.30 | 100 | | |
| MCSCS528Z120N | 12.0 ± 30% | 76.0 | 1.20 | 120 | | |
| MCSCS528Z180N | 18.0 ± 30% | 110.0 | 1.00 | 180 | | |
| MCSCS528Z220N | 22.0 ± 30% | 122.0 | 0.90 | 220 | | |
| MCSCS528Z330N | 33.0 ± 30% | 189.0 | 0.75 | 330 | | |
| MCSCS528Z470N | 47.0 ± 30% | 260.0 | 0.62 | 470 | | |
| MCSCS528Z680N | 68.0 ± 30% | 355.0 | 0.52 | 680 | | |
| MCSCS528Z101M | 100.0 ± 20% | 520.0 | 0.42 | 101 | | |
| MCSCS528Z151M | 150.0 ± 20% | 680.0 | 0.35 | 151 | | |
| MCSCS528Z181M | 180.0 ± 20% | 930.0 | 0.32 | 181 | | |
| MCSCS528Z221M | 220.0 ± 20% | 1150.0 | 0.30 | 221 | | |
| MCSCS528Z271M | 270.0 ± 20% | 1560.0 | 0.27 | 271 | | |
| MCSCS528Z331M | 330.0 ± 20% | 1980.0 | 0.25 | 331 | | |

Note:

1. Inductance is measured at 100 KHz and 1.0 Vrms.
2. The nominal DCR is measured at 25°C ambient temperature.
3. The I-sat that will cause initial inductance value approximately 35% rolloff.

Mechanical & Dimensions

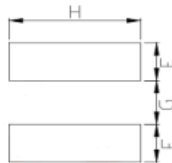
(Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 6.7 ± 0.3 |
| B | 6.7 ± 0.3 |
| C | 3.0 Max |
| D | 2.0 Ref |
| E | 9.5 Ref |

Recommend Land Pattern Dimensions

(Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 2.65 Ref |
| G | 2.0 Ref |
| H | 7.3 Ref |

Electrical Characteristics

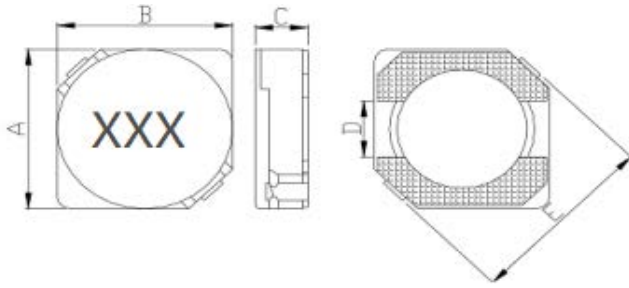
| Part Number | Inductance ¹ (μH) | DCR2 (mΩ) Max | I-sat ³ (Amps) Typ | Marking | | |
|---------------|---------------------------------|------------------|----------------------------------|---------|--|--|
| MCSCS628Z3R0N | 3.0 ± 30% | 24.0 | 3.00 | 3R0 | | |
| MCSCS628Z3R9N | 3.9 ± 30% | 27.0 | 2.60 | 3R9 | | |
| MCSCS628Z5R0N | 5.0 ± 30% | 31.0 | 2.40 | 5R0 | | |
| MCSCS628Z6R0N | 6.0 ± 30% | 35.0 | 2.25 | 6R0 | | |
| MCSCS628Z7R3N | 7.3 ± 30% | 54.0 | 2.10 | 7R3 | | |
| MCSCS628Z8R6N | 8.6 ± 30% | 58.0 | 1.85 | 8R6 | | |
| MCSCS628Z100N | 10.0 ± 30% | 65.0 | 1.70 | 100 | | |
| MCSCS628Z120N | 12.0 ± 30% | 70.0 | 1.55 | 120 | | |
| MCSCS628Z150N | 15.0 ± 30% | 84.0 | 1.40 | 150 | | |
| MCSCS628Z180N | 18.0 ± 30% | 95.0 | 1.32 | 180 | | |
| MCSCS628Z220N | 22.0 ± 30% | 128.0 | 1.20 | 220 | | |
| MCSCS628Z270N | 27.0 ± 30% | 142.0 | 1.05 | 270 | | |
| MCSCS628Z330N | 33.0 ± 30% | 165.0 | 0.97 | 330 | | |
| MCSCS628Z390N | 39.0 ± 30% | 210.0 | 0.86 | 390 | | |
| MCSCS628Z470N | 47.0 ± 30% | 238.0 | 0.80 | 470 | | |
| MCSCS628Z560N | 56.0 ± 30% | 277.0 | 0.73 | 560 | | |
| MCSCS628Z680N | 68.0 ± 30% | 304.0 | 0.65 | 680 | | |

Note:

1. Inductance is measured at 100 KHz and 1.0 Vrms.
2. The nominal DCR is measured at 25°C ambient temperature.
3. The I-sat that will cause initial inductance value approximately 35% rolloff.

Mechanical & Dimensions

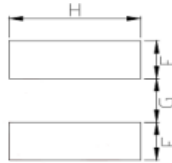
(Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 6.7 ± 0.3 |
| B | 6.7 ± 0.3 |
| C | 3.0 Max |
| D | 2.0 Ref |
| E | 9.5 Ref |

Recommend Land Pattern Dimensions

(Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 2.65 Ref |
| G | 2.0 Ref |
| H | 7.3 Ref |

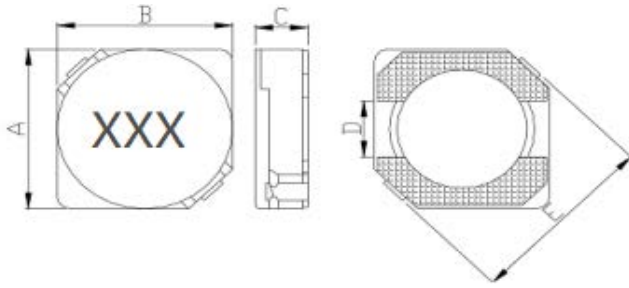
Electrical Characteristics

| Part Number | Inductance ¹ (μH) | DCR2 (mΩ) Max | I-sat ³ (Amps) Typ | Marking | | |
|---------------|---------------------------------|------------------|----------------------------------|---------|--|--|
| MCSCS628Z820N | 82.0 ± 30% | 390.0 | 0.60 | 820 | | |
| MCSCS628Z101M | 100.0 ± 20% | 535.0 | 0.54 | 101 | | |
| MCSCS628Z121M | 120.0 ± 20% | 750.0 | 0.51 | 121 | | |
| MCSCS628Z151M | 150.0 ± 20% | 950.0 | 0.47 | 151 | | |
| MCSCS628Z181M | 180.0 ± 20% | 1200.0 | 0.41 | 181 | | |
| MCSCS628Z221M | 220.0 ± 20% | 1500.0 | 0.37 | 221 | | |
| MCSCS628Z271M | 270.0 ± 20% | 1700.0 | 0.33 | 271 | | |
| MCSCS628Z331M | 330.0 ± 20% | 2150.0 | 0.28 | 331 | | |
| MCSCS628Z391M | 390.0 ± 20% | 2250.0 | 0.27 | 391 | | |
| MCSCS628Z471M | 470.0 ± 20% | 3150.0 | 0.21 | 471 | | |
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Note:
 1. Inductance is measured at 100 KHz and 1.0 Vrms.
 2. The nominal DCR is measured at 25°C ambient temperature.
 3. The I-sat that will cause initial inductance value approximately 35% rolloff.

Mechanical & Dimensions

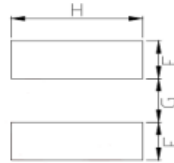
(Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 6.7 ± 0.3 |
| B | 6.7 ± 0.3 |
| C | 4.0 Max |
| D | 2.0 Ref |
| E | 9.5 Ref |

Recommend Land Pattern Dimensions

(Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 2.65 Ref |
| G | 2.0 Ref |
| H | 7.3 Ref |

Electrical Characteristics

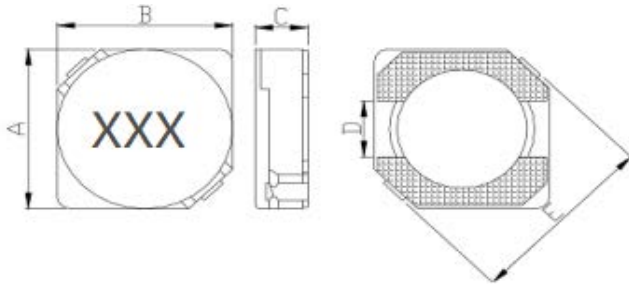
| Part Number | Inductance ¹ (μH) | DCR2 (mΩ) Max | I-sat ³ (Amps) Typ | Marking | | |
|---------------|---------------------------------|------------------|----------------------------------|---------|--|--|
| MCSCS638Z3R0N | 3.0 ± 30% | 20.0 | 3.50 | 3R0 | | |
| MCSCS638Z5R0N | 5.0 ± 30% | 24.0 | 2.90 | 5R0 | | |
| MCSCS638Z6R2N | 6.2 ± 30% | 27.0 | 2.50 | 6R2 | | |
| MCSCS638Z7R3N | 7.3 ± 30% | 31.0 | 2.30 | 7R3 | | |
| MCSCS638Z8R6N | 8.6 ± 30% | 34.0 | 2.20 | 8R6 | | |
| MCSCS638Z100N | 10.0 ± 30% | 38.0 | 2.00 | 100 | | |
| MCSCS638Z120N | 12.0 ± 30% | 53.0 | 1.70 | 120 | | |
| MCSCS638Z150N | 15.0 ± 30% | 57.0 | 1.60 | 150 | | |
| MCSCS638Z180N | 18.0 ± 30% | 92.0 | 1.50 | 180 | | |
| MCSCS638Z220N | 22.0 ± 30% | 96.0 | 1.30 | 220 | | |
| MCSCS638Z270N | 27.0 ± 30% | 109.0 | 1.20 | 270 | | |
| MCSCS638Z330N | 33.0 ± 30% | 124.0 | 1.10 | 330 | | |
| MCSCS638Z390N | 39.0 ± 30% | 138.0 | 1.00 | 390 | | |
| MCSCS638Z470N | 47.0 ± 30% | 155.0 | 0.95 | 470 | | |
| MCSCS638Z560N | 56.0 ± 30% | 202.0 | 0.85 | 560 | | |
| MCSCS638Z680N | 68.0 ± 30% | 234.0 | 0.75 | 680 | | |
| MCSCS638Z820N | 82.0 ± 30% | 324.0 | 0.70 | 820 | | |

Note:

1. Inductance is measured at 100 KHz and 1.0 Vrms.
2. The nominal DCR is measured at 25°C ambient temperature.
3. The I-sat that will cause initial inductance value approximately 35% rolloff.

Mechanical & Dimensions

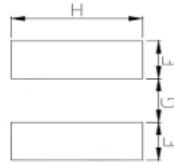
(Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 6.7 ± 0.3 |
| B | 6.7 ± 0.3 |
| C | 4.0 Max |
| D | 2.0 Ref |
| E | 9.5 Ref |

Recommend Land Pattern Dimensions

(Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 2.65 Ref |
| G | 2.0 Ref |
| H | 7.3 Ref |

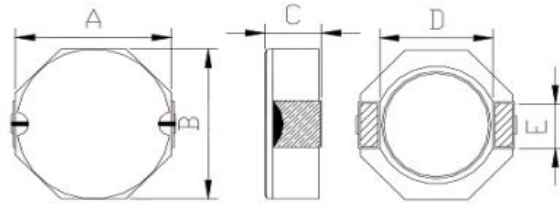
Electrical Characteristics

| Part Number | Inductance ¹ (μH) | DCR ² (mΩ) Max | I-sat ³ (Amps) Typ | Marking | | |
|---------------|---------------------------------|------------------------------|----------------------------------|---------|--|--|
| MCSCS638Z101M | 100.0 ± 20% | 358.0 | 0.65 | 101 | | |
| MCSCS638Z121M | 120.0 ± 20% | 470.0 | 0.59 | 121 | | |
| MCSCS638Z151M | 150.0 ± 20% | 580.0 | 0.54 | 151 | | |
| MCSCS638Z181M | 180.0 ± 20% | 690.0 | 0.49 | 181 | | |
| MCSCS638Z221M | 220.0 ± 20% | 890.0 | 0.43 | 221 | | |
| MCSCS638Z271M | 270.0 ± 20% | 1290.0 | 0.40 | 271 | | |
| MCSCS638Z331M | 330.0 ± 20% | 1700.0 | 0.37 | 331 | | |
| MCSCS638Z391M | 390.0 ± 20% | 1750.0 | 0.34 | 391 | | |
| MCSCS638Z471M | 470.0 ± 20% | 2200.0 | 0.32 | 471 | | |
| MCSCS638Z561M | 560.0 ± 20% | 2850.0 | 0.29 | 561 | | |
| MCSCS638Z681M | 680.0 ± 20% | 3200.0 | 0.25 | 681 | | |
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Note:

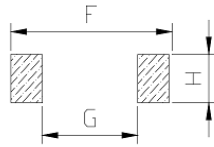
1. Inductance is measured at 100 KHz and 1.0 Vrms.
2. The nominal DCR is measured at 25°C ambient temperature.
3. The I-sat that will cause initial inductance value approximately 35% rolloff.

Mechanical & Dimensions (Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 8.0 ± 0.3 |
| B | 8.0 ± 0.3 |
| C | 3.0 Max |
| D | 6.3 Ref |
| E | 2.5 Ref |
| | |
| | |

Recommend Land Pattern Dimensions (Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 10.1 Ref |
| G | 6.1 Ref |
| H | 2.8 Ref |
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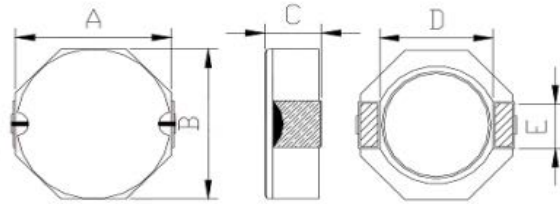
Electrical Characteristics

| Part Number | Inductance ¹ (μH) | DCR2 (mΩ) Max | I-sat ³ (Amps) Typ | Heat Rating Current(A) | | |
|---------------|---------------------------------|------------------|----------------------------------|---------------------------|--|--|
| MCSCS828Z1R0N | 1.0 ± 30% | 11.0 | 6.50 | 7.00 | | |
| MCSCS828Z2R5N | 2.5 ± 30% | 16.0 | 4.50 | 6.40 | | |
| MCSCS828Z3R3N | 3.3 ± 30% | 19.0 | 4.00 | 6.00 | | |
| MCSCS828Z4R7N | 4.7 ± 30% | 25.0 | 3.40 | 4.50 | | |
| MCSCS828Z7R3N | 7.3 ± 30% | 39.0 | 2.80 | 3.40 | | |
| MCSCS828Z100N | 10.0 ± 30% | 47.0 | 2.50 | 3.20 | | |
| MCSCS828Z150N | 15.0 ± 30% | 69.0 | 1.90 | 2.35 | | |
| MCSCS828Z220N | 22.0 ± 30% | 99.0 | 1.60 | 1.85 | | |
| MCSCS828Z330N | 33.0 ± 30% | 156.0 | 1.30 | 1.49 | | |
| MCSCS828Z470N | 47.0 ± 30% | 195.0 | 1.15 | 1.30 | | |
| MCSCS828Z680N | 68.0 ± 30% | 286.0 | 0.92 | 0.98 | | |
| MCSCS828Z101M | 100.0 ± 20% | 430.0 | 0.75 | 0.80 | | |
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Note:

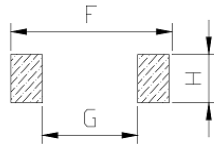
1. Inductance is measured at 100 KHz and 1.0 Vrms.
2. The nominal DCR is measured at 25°C ambient temperature.
3. The I-sat that will cause initial inductance value approximately 35% rolloff.
4. The Heat Rating Current that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions (Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 8.0 ± 0.3 |
| B | 8.0 ± 0.3 |
| C | 4.0 Max |
| D | 6.3 Ref |
| E | 2.5 Ref |
| | |
| | |

Recommend Land Pattern Dimensions (Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 10.1 Ref |
| G | 6.1 Ref |
| H | 2.8 Ref |
| | |
| | |

Electrical Characteristics

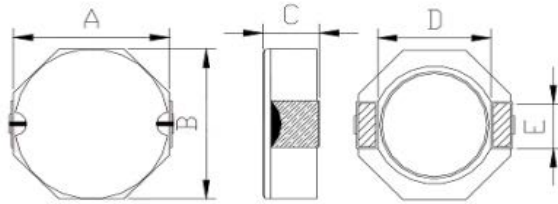
| Part Number | Inductance ¹ (μH) | DCR2 (mΩ) Max | I-sat ³ (Amps) Typ | Heat Rating Current(A) | | |
|---------------|---------------------------------|------------------|----------------------------------|---------------------------|--|--|
| MCSCS838Z1R8N | 1.8 ± 30% | 16.0 | 7.00 | 6.80 | | |
| MCSCS838Z2R5N | 2.5 ± 30% | 18.0 | 6.50 | 6.00 | | |
| MCSCS838Z3R3N | 3.3 ± 30% | 24.0 | 5.00 | 5.20 | | |
| MCSCS838Z4R7N | 4.7 ± 30% | 29.0 | 4.60 | 4.40 | | |
| MCSCS838Z6R0N | 6.0 ± 30% | 32.0 | 4.20 | 4.00 | | |
| MCSCS838Z100N | 10.0± 30% | 48.0 | 3.00 | 3.20 | | |
| MCSCS838Z150N | 15.0 ± 30% | 67.0 | 2.75 | 2.50 | | |
| MCSCS838Z220N | 22.0 ± 30% | 105.0 | 2.30 | 2.00 | | |
| MCSCS838Z330N | 33.0 ± 30% | 157.0 | 1.75 | 1.60 | | |
| MCSCS838Z470N | 47.0 ± 30% | 189.0 | 1.52 | 1.42 | | |
| MCSCS838Z680N | 68.0 ± 30% | 290.0 | 1.30 | 1.08 | | |
| MCSCS838Z101M | 100.0 ± 20% | 410.0 | 1.05 | 0.88 | | |
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Note:

1. Inductance is measured at 100 KHz and 1.0 Vrms.
2. The nominal DCR is measured at 25°C ambient temperature.
3. The I-sat that will cause initial inductance value approximately 35% rolloff.
4. The Heat Rating Current that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

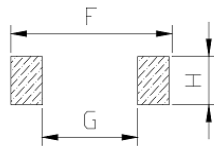
(Unit: mm)



| Code | Dimensions |
|------|------------|
| A | 8.0 ± 0.3 |
| B | 8.0 ± 0.3 |
| C | 4.5 Max |
| D | 6.3 Ref |
| E | 2.5 Ref |

Recommend Land Pattern Dimensions

(Unit: mm)



| Code | Dimensions |
|------|------------|
| F | 10.1 Ref |
| G | 6.1 Ref |
| H | 2.8 Ref |

Electrical Characteristics

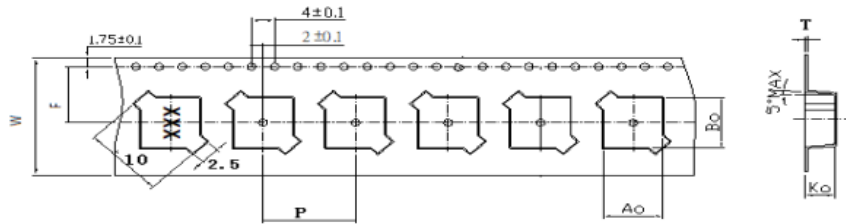
| Part Number | Inductance ¹ (μH) | DCR ² (mΩ) Max | I-sat ³ (Amps) Typ | Heat Rating Current(A) | | |
|---------------|---------------------------------|------------------------------|----------------------------------|---------------------------|--|--|
| MCSCS843Z1R0N | 1.0 ± 30% | 10.0 | 8.50 | 6.60 | | |
| MCSCS843Z1R2N | 1.2 ± 30% | 13.0 | 8.00 | 6.20 | | |
| MCSCS843Z2R2N | 2.2 ± 30% | 14.0 | 7.00 | 5.50 | | |
| MCSCS843Z3R9N | 3.9 ± 30% | 19.0 | 5.90 | 4.50 | | |
| MCSCS843Z4R7N | 4.7 ± 30% | 22.0 | 5.60 | 4.10 | | |
| MCSCS843Z6R8N | 6.8 ± 30% | 25.0 | 4.40 | 3.90 | | |
| MCSCS843Z100N | 10.0 ± 30% | 36.0 | 4.00 | 3.20 | | |
| MCSCS843Z150N | 15.0 ± 30% | 53.0 | 2.90 | 2.30 | | |
| MCSCS843Z220N | 22.0 ± 30% | 75.0 | 2.60 | 1.80 | | |
| MCSCS843Z330N | 33.0 ± 30% | 125.0 | 2.20 | 1.40 | | |
| MCSCS843Z470N | 47.0 ± 30% | 150.0 | 1.80 | 1.30 | | |
| MCSCS843Z680N | 68.0 ± 30% | 240.0 | 1.50 | 1.00 | | |
| MCSCS843Z101M | 100.0 ± 20% | 360.0 | 1.30 | 0.80 | | |
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Note:

1. Inductance is measured at 100 KHz and 1.0 Vrms.
2. The nominal DCR is measured at 25°C ambient temperature.
3. The I-sat that will cause initial inductance value approximately 35% rolloff.
4. The Heat Rating Current that will cause temperature rise approximate 40°C without core loss.

Packaging

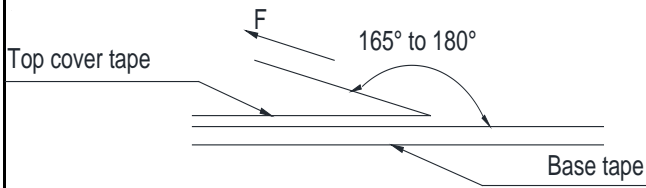
Tape Dimension:



| P/N | Ao(mm) | Bo(mm) | Ko(mm) | T(mm) | F(mm) | P(mm) | W(mm) | | |
|------------------|--------|--------|--------|-------|-------|-------|-------|--|--|
| MCSCS316Z Series | 4.3 | 4.3 | 1.9 | 0.35 | 5.5 | 8 | 12 | | |
| MCSCS318Z Series | 4.3 | 4.3 | 2.1 | 0.35 | 5.5 | 8 | 12 | | |
| MCSCS328Z Series | 4.3 | 4.3 | 3.2 | 0.35 | 5.5 | 8 | 12 | | |
| MCSCS418Z Series | 5.1 | 5.1 | 2.2 | 0.35 | 5.5 | 8 | 12 | | |
| MCSCS428Z Series | 5.1 | 5.1 | 3.3 | 0.35 | 5.5 | 8 | 12 | | |
| MCSCS518Z Series | 6.1 | 6.1 | 2.2 | 0.35 | 7.5 | 12 | 16 | | |
| MCSCS528Z Series | 6.1 | 6.1 | 3.3 | 0.35 | 7.5 | 12 | 16 | | |
| MCSCS628Z Series | 7.2 | 7.2 | 3.4 | 0.35 | 7.5 | 12 | 16 | | |
| MCSCS638Z Series | 7.2 | 7.2 | 4.2 | 0.35 | 7.5 | 12 | 16 | | |
| MCSCS828Z Series | 8.4 | 9.9 | 3.4 | 0.35 | 7.5 | 12 | 16 | | |
| MCSCS838Z Series | 8.4 | 9.9 | 4.2 | 0.35 | 7.5 | 12 | 16 | | |
| MCSCS843Z Series | 8.4 | 9.9 | 4.6 | 0.35 | 7.5 | 12 | 16 | | |
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Packaging

Tearing Off Force:



| The force tearing off cobe tape is 10 to 130 g.f | | | |
|---|-------------------|-----------------|------------------------|
| in the arrow direction under the following conditions | | | |
| Room Temp (°C) | Room Humidity (%) | Room atrn (hPa) | Teaming Speed (mm/min) |
| 5~35 | 45~85 | 860~1060 | 300 |

※Storage Conditions

1. Temperature and humidity conditions:
-40°C ~ +85°C and 70% RH.
2. Recommended products should be used within 6 months form the time of delivery.
3. The packaging material should be kept where no chlorine or sulfur exists in the air.

※Transportation

1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

Recommended Soldering Conditions

Figure 1. Re-flow Soldering

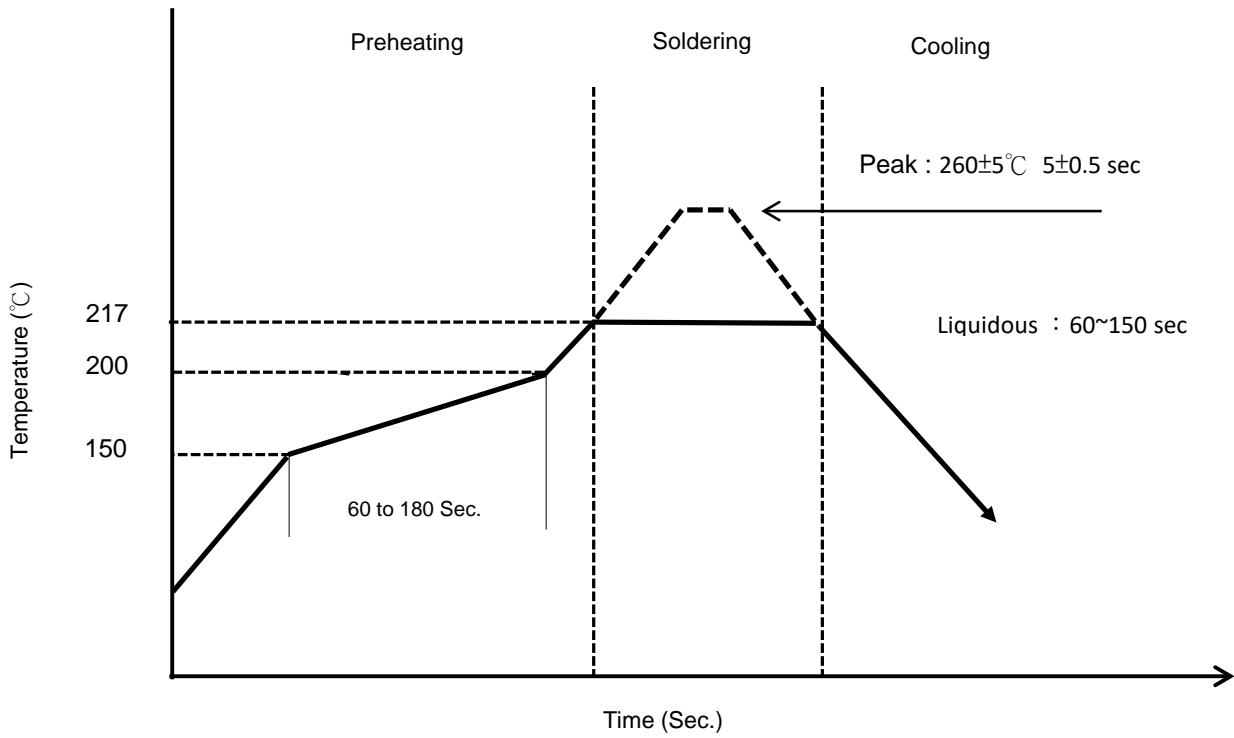
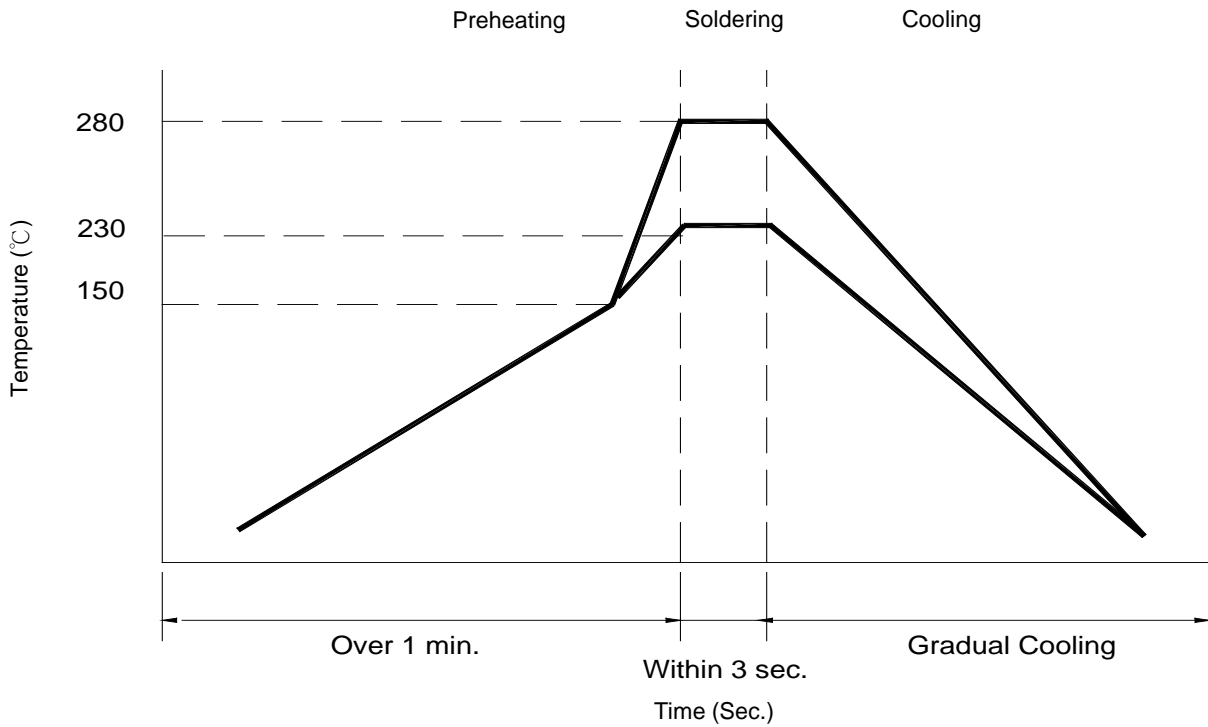
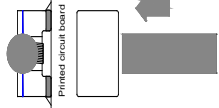


Figure 2. Hand Soldering



Reliability and Testing Conditions

| Item | Specification | Conditions | | | | | | | | | | | | | | | |
|--|---|--|------|------------------|--------------|---|---------|----|---|------------------|----------|---|---------|----|---|------------------|----------|
| Operating temperature range | -40°C ~ +125°C (Including self-temperature rise) | | | | | | | | | | | | | | | | |
| Storage temperature and humidity range | -40°C ~ +85°C , 70% RH Max | | | | | | | | | | | | | | | | |
| Solderability | More than 90% of the terminal electrode should be covered with solder. | <ul style="list-style-type: none"> - Preheat: 150 °C , 60 sec - Solder: Sn96.5%-Ag3%-Cu0.5% - Temperature: 245±5°C - Flux for lead free: Rosin 9.5% - Dip time: 4±1 sec - Depth: completely cover the termination | | | | | | | | | | | | | | | |
| Resistance to Soldering Heat | Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break. | <ul style="list-style-type: none"> - Solder technique simulation: SMD - Temperature (°C): 260 ± 5 (solder temp) - Time (s): 10 ± 1 - Temperature ramp / immersion and emersion rate: 25 mm/s ± 6 mm/s - Number of heat cycles: 1 | | | | | | | | | | | | | | | |
| Resistance to High Temperature | Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break. | 500 hrs. at 125°C±3°C Unpowered. Measurement at 24±4 hours after test conclusion. | | | | | | | | | | | | | | | |
| Resistance to Low Temperature | Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break. | 500 hrs. at -40°C±3°C. Unpowered. Measurement at 24±4 hours after test conclusion. | | | | | | | | | | | | | | | |
| Resistance to Humidity | Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break. | After 500 hours in 40±2°C and 90 to 95% humidity , and 24±4 hour drying under normal condition. | | | | | | | | | | | | | | | |
| Thermal shock | Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break. | <p style="text-align: center;">After 100 cycles of following condition.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Times (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40±3°C</td> <td>30</td> </tr> <tr> <td>2</td> <td>Room Temperature</td> <td>Within 3</td> </tr> <tr> <td>3</td> <td>125±3°C</td> <td>30</td> </tr> <tr> <td>4</td> <td>Room Temperature</td> <td>Within 3</td> </tr> </tbody> </table> | Step | Temperature (°C) | Times (min.) | 1 | -40±3°C | 30 | 2 | Room Temperature | Within 3 | 3 | 125±3°C | 30 | 4 | Room Temperature | Within 3 |
| Step | Temperature (°C) | Times (min.) | | | | | | | | | | | | | | | |
| 1 | -40±3°C | 30 | | | | | | | | | | | | | | | |
| 2 | Room Temperature | Within 3 | | | | | | | | | | | | | | | |
| 3 | 125±3°C | 30 | | | | | | | | | | | | | | | |
| 4 | Room Temperature | Within 3 | | | | | | | | | | | | | | | |
| Vibration Test | Inductance within ±10% of initial value and appearance shall not break. | After vibration for 1hour, In each of three orientations at sweep vibration (10~55~10Hz) with 1.52mm P-P Amplitudes. | | | | | | | | | | | | | | | |
| Terminal strength | The terminal electrode and the ferrite must not be damaged | <p>Solder a chip to test substrate, and then laterally apply a load 10N in the arrow direction, Duration :5s</p>  | | | | | | | | | | | | | | | |
| Drop Test | Inductance within ±10% of initial value. The appearance shall not break. | Drop 3 times on a concrete floor from a height of 75cm by inimum packing | | | | | | | | | | | | | | | |