MORE® CHANCE | 茂昌电子

CUSTOMER :	STD
PRODUCTS :	SHIELDED SMD POWER INDUCTOR
PART NO :	MCSG Series
CUST P/ NO :	
DATE :	2025.04.16
SALES DEP :	
E-MAIL :	

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

APPROVAL BY :	*CHECK BY :*	*DRAWN BY :*
Honey Wei	***Leo Wang***	***May Gao***

CHANGE HISTORY

Ver	Revision Items	Before Revision	After Revision	Date
Rev.A	-	-	-	2025.04.16

MCSG Series

- *SHIELDED SMD POWER INDUCTOR*
- *Operating Temperature up tp -40 ℃ ~ 125 ℃*
- *High Current up to 10.15 A*
- *Low DCR down to 9.8 mOhms*
- *Environmental Lead free*
- *Environmental RoHS2.0 compliant*
- *Environmental halogen free*
- *Storage Temperature ：-40 ℃ ~ +85 ℃*
- *Packaging 7/13"Reel,Plastic tape:8/12/16/24mm wide.*

FEATURES

- High current and inductance capacity.
- Design of two kinds material .
- Magnetic adhesive shielded power inductors.
- Miniaturized power inductor.

Applications

- AP Routers
- STBs
- LCD TVs,monitors and panels.
- Game consloes.
- DC/DC converters.

PRODUCT IDENTIFICATION

MC	SG	31	Z	1R0	M	F	8
①	②	③	④	⑤	⑥	⑦	⑧

① Brand & Product classification
② Product Series NO.(SG：SMD Power Inductors.)
③ External Dimensions.(31：L:3.0 × W:3.0 × H:1.0) [mm]
④ Separator code.
⑤ Nominal Inductance

Example	Nominal Value
R22	0.22uH
1R0	1.0uH
100	10uH
101	100uH
70N	70nH

⑥ Inductance Tolerance.(L：±15% ; M：±20% ; N：±30%)
⑦ Material Code.(F：F Type material.H: H Type material)
⑧ Appearance Code.(4:4 Appearance. 8:8 Appearance. C:C Appearance)

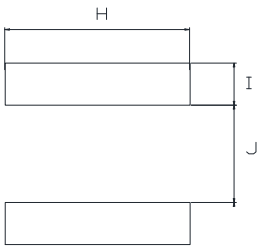
Mechanical & Dimensions

(Unit: mm)

Code	Dimensions
A	2.0±0.3
B	1.6±0.2
C	1.1 Max
D	0.60±0.2

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	0.95 Ref
J	0.46 Ref
H	1.98 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ		
MCSG201610ZR24MF4	0.24±20%	40	3.70	3.10		
MCSG201610ZR33MF4	0.33±20%	48	2.50	2.90		
MCSG201610ZR47MF4	0.47±20%	60	2.30	2.60		
MCSG201610ZR68MF4	0.68±20%	76	1.95	2.20		
MCSG201610Z1R0MF4	1.0±20%	114	1.65	1.60		
MCSG201610Z1R5MF4	1.5±20%	174	1.35	1.20		
MCSG201610Z2R2MF4	2.2±20%	265	1.20	1.15		
MCSG201610Z3R3MF4	3.3±20%	345	1.00	0.95		
MCSG201610Z4R7MF4	4.7±20%	480	0.75	0.80		
MCSG201610Z6R8MF4	6.8±20%	816	0.60	0.52		
MCSG201610Z100MF4	10.0±20%	1020	0.50	0.45		
MCSG201610Z220MF4	22.0±20%	1750	0.32	0.36		

Note:

1.Inductance is measured at 1 MHz and 1.0 Vrms.

2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 30% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

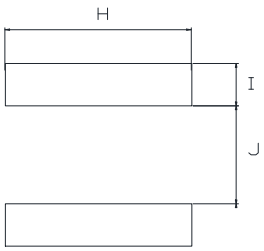
Mechanical & Dimensions

(Unit: mm)

Code	Dimensions
A	2.5±0.3
B	2.0±0.3
C	1.0+0.2/-0.3
D	0.8±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.1 Ref
J	0.7 Ref
H	2.0 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ		
MCSG25210ZR24NF4	0.24±30%	34	3.60	2.75		
MCSG25210ZR33NF4	0.33±30%	43	3.60	2.45		
MCSG25210ZR47NF4	0.47±30%	56	2.50	2.35		
MCSG25210ZR68NF4	0.68±30%	74	2.20	2.00		
MCSG25210Z1R0NF4	1.0±30%	108	1.85	1.65		
MCSG25210Z1R5MF4	1.5±20%	182	1.80	1.30		
MCSG25210Z2R2MF4	2.2±20%	209	1.20	1.20		
MCSG25210Z3R3MF4	3.3±20%	328	1.05	0.90		
MCSG25210Z4R7MF4	4.7±20%	563	0.95	0.70		
MCSG25210Z6R8MF4	6.8±20%	896	0.78	0.59		
MCSG25210Z100MF4	10.0±20%	1092	0.65	0.50		

Note:

1.Inductance is measured at 1 MHz and 1.0 Vrms.

2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 30% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

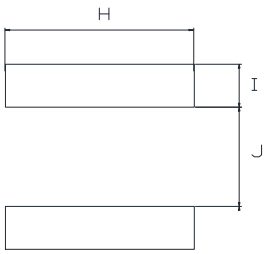
Mechanical & Dimensions

(Unit: mm)

Code	Dimensions
A	2.5±0.3
B	2.0±0.3
C	1.2+0.2/-0.3
D	0.8±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.1 Ref
J	0.7 Ref
H	2.0 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ		
MCSG25212ZR24NF4	0.24±30%	26	4.00	4.00		
MCSG25212ZR33NF4	0.33±30%	33	3.90	3.70		
MCSG25212ZR47NF4	0.47±30%	38	3.80	3.30		
MCSG25212ZR68NF4	0.68±30%	50	3.00	2.50		
MCSG25212Z1R0NF4	1.0±30%	63	2.20	2.60		
MCSG25212Z1R5NF4	1.5±30%	95	2.00	2.00		
MCSG25212Z2R2MF4	2.2±20%	115	1.75	1.85		
MCSG25212Z3R3MF4	3.3±20%	170	1.20	1.40		
MCSG25212Z4R7MF4	4.7±20%	235	1.10	1.20		
MCSG25212Z6R8MF4	6.8±20%	370	0.90	1.05		
MCSG25212Z100MF4	10.0±20%	525	0.70	0.86		
MCSG25212Z150MF4	15.0±20%	1000	0.60	0.60		
MCSG25212Z220MF4	22.0±20%	1300	0.45	0.55		

Note:

1.Inductance is measured at 1 MHz and 1.0 Vrms.

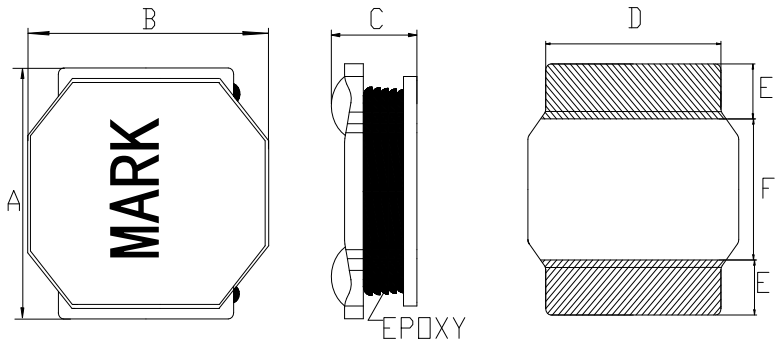
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 30% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

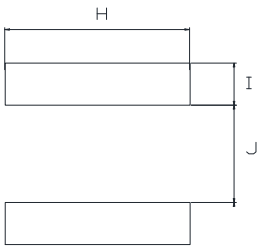
(Unit: mm)



Code	Dimensions
A	3.0±0.2
B	3.0±0.2
C	1.2 Max
D	2.5 Ref
E	0.9 Ref
F	1.2 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.2 Ref
J	0.9 Ref
H	2.8 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ		
MCSG31Z1R0NF8	1.0±30%	85	1.40	1.45		
MCSG31Z1R5NF8	1.5±30%	130	1.27	1.30		
MCSG31Z2R2NF8	2.2±30%	143	1.15	1.09		
MCSG31Z3R3NF8	3.3±30%	257	0.97	0.96		
MCSG31Z4R7MF8	4.7±20%	293	0.75	0.77		
MCSG31Z6R8MF8	6.8±20%	510	0.55	0.66		
MCSG31Z100MF8	10.0±20%	690	0.55	0.58		
MCSG31Z150MF8	15.0±20%	1090	0.42	0.47		
MCSG31Z220MF8	22.0±20%	1300	0.35	0.38		
MCSG31Z330MF8	33.0±20%	2360	0.29	0.30		
MCSG31Z470MF8	47.0±20%	2800	0.22	0.26		

Note:

1.Inductance is measured at 100 KHz and 0.25 Vrms.

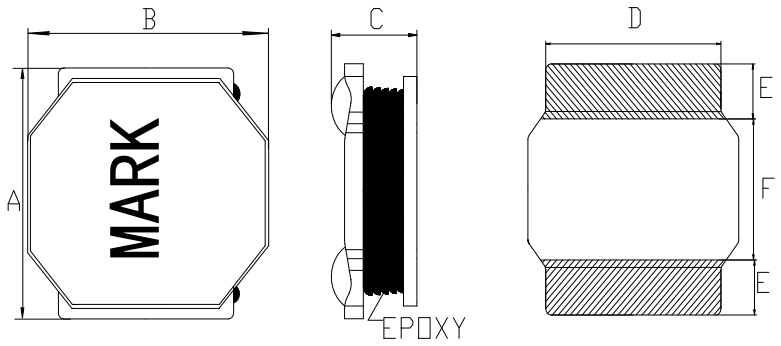
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 35% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

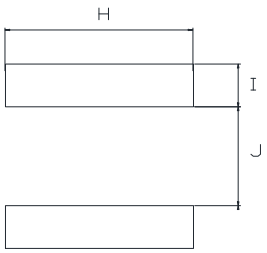
(Unit: mm)



Code	Dimensions
A	3.0±0.2
B	3.0±0.2
C	1.3 Max
D	2.85 Ref
E	0.9 Ref
F	1.2 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.2 Ref
J	0.9 Ref
H	3.15 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ		
MCSG312ZR22NF8	0.22±30%	30	5.30	3.00		
MCSG312Z1R0NF8	1.0±30%	68	1.87	2.20		
MCSG312Z1R5NF8	1.5±30%	110	1.62	2.01		
MCSG312Z2R2NF8	2.2±30%	148	1.20	1.55		
MCSG312Z3R3NF8	3.3±30%	196	1.05	1.36		
MCSG312Z4R7NF8	4.7±30%	321	0.90	1.24		
MCSG312Z6R8NF8	6.8±30%	445	0.75	0.98		
MCSG312Z100MF8	10.0±20%	579	0.60	0.83		
MCSG312Z120MF8	12.0±20%	793	0.48	0.73		
MCSG312Z150MF8	15.0±20%	910	0.45	0.71		
MCSG312Z220MF8	22.0±20%	1240	0.42	0.53		
MCSG312Z330MF8	33.0±20%	1920	0.36	0.46		
MCSG312Z470MF8	47.0±20%	2400	0.27	0.35		
MCSG312Z680MF8	68.0±20%	3840	0.24	0.33		

Note:

1.Inductance is measured at 100 KHz and 0.25 Vrms.

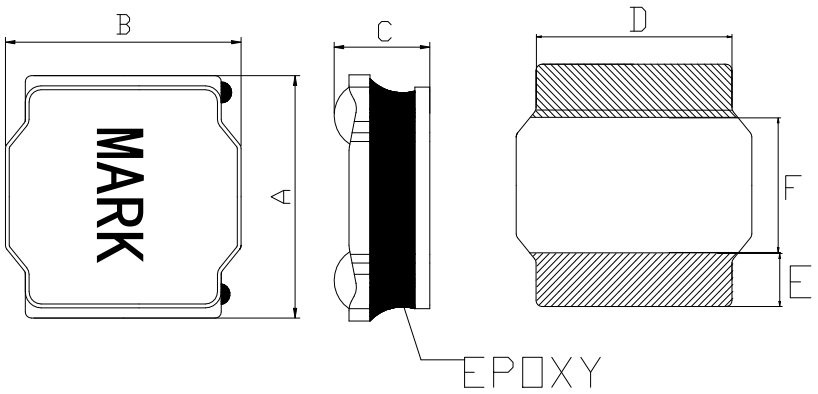
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 35% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

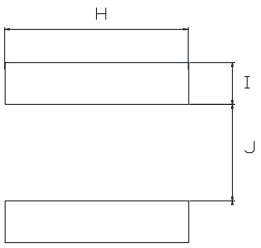
(Unit: mm)



Code	Dimensions
A	3.0±0.2
B	3.0±0.2
C	1.5+0.2/-0.3
D	2.6 Ref
E	0.9 Ref.
F	1.3 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.2 Ref
J	1.0 Ref
H	3.0 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ	Marking	
MCSG315Z1R0NFC	1.0±30%	39	2.20	1.80	1R0	
MCSG315Z1R2NFC	1.2±30%	52	1.90	1.78	1R2	
MCSG315Z1R5NFC	1.5±30%	65	1.62	1.75	1R5	
MCSG315Z2R2NFC	2.2±30%	78	1.56	1.30	2R2	
MCSG315Z3R3MFC	3.3±20%	104	1.28	1.17	3R3	
MCSG315Z4R7MFC	4.7±20%	163	1.10	1.00	4R7	
MCSG315Z6R8MFC	6.8±20%	260	0.85	0.75	6R8	
MCSG315Z100MFC	10.0±20%	325	0.51	0.59	100	
MCSG315Z150MFC	15.0±20%	455	0.66	0.65	150	
MCSG315Z220MFC	22.0±20%	598	0.48	0.44	220	
MCSG315Z330MFC	33.0±20%	1066	0.44	0.34	330	
MCSG315Z470MFC	47.0±20%	1625	0.32	0.27	470	

Note:

1.Inductance is measured at 100 KHz and 0.25 Vrms.

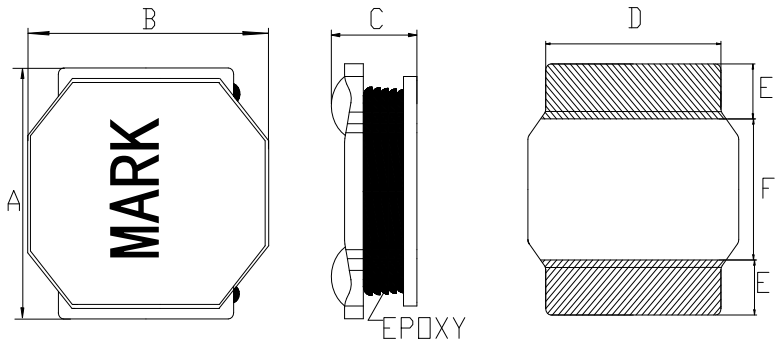
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 30% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

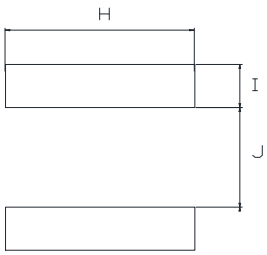
(Unit: mm)



Code	Dimensions
A	4.0±0.2
B	4.0±0.2
C	1.2+0.2/-0.3
D	3.3 Ref
E	1.2 Ref
F	1.6 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.4 Ref
J	1.4 Ref
H	3.7 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ	Marking	
MCSG412ZR68NF8	0.68±30%	58	3.20	1.72	R68	
MCSG412Z1R0NF8	1.0±30%	65	2.61	1.65	1R0	
MCSG412Z1R5NF8	1.5±30%	94	2.50	1.46	1R5	
MCSG412Z2R2MF8	2.2±20%	105	1.76	1.32	2R2	
MCSG412Z3R3MF8	3.3±20%	149	1.72	1.12	3R3	
MCSG412Z4R7MF8	4.7±20%	198	1.15	1.05	4R7	
MCSG412Z6R8MF8	6.8±20%	286	0.85	0.64	6R8	
MCSG412Z100MF8	10.0±20%	442	0.80	0.77	100	
MCSG412Z150MF8	15.0±20%	651	0.56	0.64	150	
MCSG412Z220MF8	22.0±20%	1010	0.46	0.49	220	

Note:

1.Inductance is measured at 100 KHz and 0.25 Vrms.

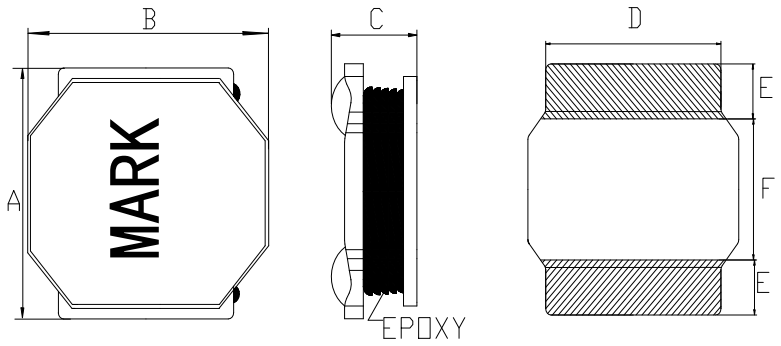
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 30% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

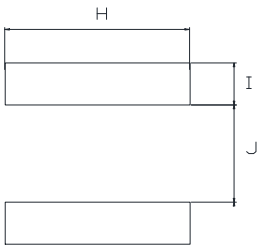
(Unit: mm)



Code	Dimensions
A	4.0±0.2
B	4.0±0.2
C	2.0 Max
D	3.4 Ref
E	1.2 Ref
F	1.6 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.5 Ref
J	1.3 Ref
H	3.7 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ	Marking	
MCSG418Z1R0MF8	1.0±20%	38.4	3.69	2.80	1R0	
MCSG418Z2R2MF8	2.2±20%	72.0	2.52	2.50	2R2	
MCSG418Z3R3MF8	3.3±20%	84.0	1.98	2.10	3R3	
MCSG418Z4R7MF8	4.7±20%	117.0	1.80	1.70	4R7	
MCSG418Z6R8MF8	6.8±20%	143.0	1.44	1.50	6R8	
MCSG418Z100MF8	10.0±20%	234.0	1.26	1.20	100	
MCSG418Z150MF8	15.0±20%	325.0	0.90	1.00	150	
MCSG418Z220MF8	22.0±20%	468.0	0.80	0.85	220	
MCSG418Z330MF8	33.0±20%	689.0	0.65	0.70	330	
MCSG418Z470MF8	47.0±20%	864.0	0.57	0.56	470	

Note:

1.Inductance is measured at 100 KHz and 0.25 Vrms.

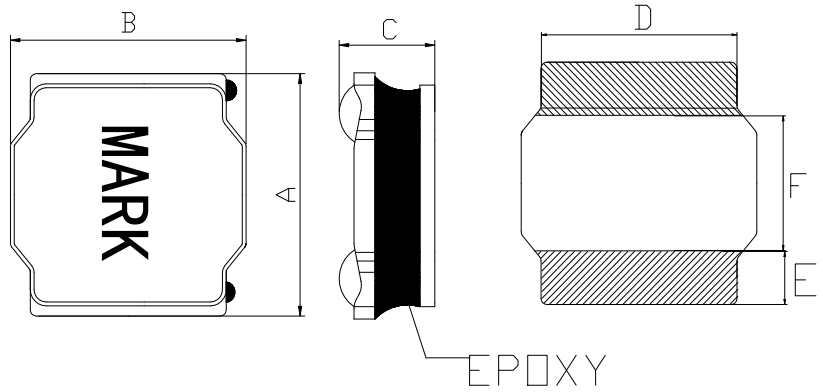
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 30% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

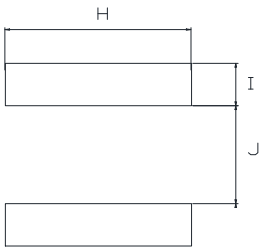
(Unit: mm)



Code	Dimensions
A	4.0±0.2
B	4.0±0.2
C	3.0 Max
D	3.4 Ref
E	1.1 Ref
F	1.8 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.3 Ref
J	1.6 Ref
H	3.7 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ	Marking	
MCSG43Z1R0NFC	1.0±30%	28.6	5.26	4.25	1R0	
MCSG43Z1R5NFC	1.5±30%	39.0	4.84	3.34	1R5	
MCSG43Z1R8NFC	1.8±30%	43.0	4.40	3.20	1R8	
MCSG43Z2R2MFC	2.2±20%	45.0	3.80	2.95	2R2	
MCSG43Z3R3MFC	3.3±20%	52.0	3.30	2.40	3R3	
MCSG43Z4R7MFC	4.7±20%	80.0	2.60	2.00	4R7	
MCSG43Z5R6MFC	5.6±20%	85.0	2.60	1.95	5R6	
MCSG43Z6R8MFC	6.8±20%	117.0	2.60	1.60	6R8	
MCSG43Z100MFC	10.0±20%	169.0	1.85	1.50	100	
MCSG43Z150MFC	15.0±20%	247.0	1.65	1.10	150	
MCSG43Z220MFC	22.0±20%	293.0	1.30	1.00	220	
MCSG43Z330MFC	33.0±20%	429.0	1.10	0.84	330	
MCSG43Z470MFC	47.0±20%	598.0	0.95	0.70	470	
MCSG43Z680MFC	68.0±20%	1170.0	0.84	0.52	680	
MCSG43Z101MFC	100.0±20%	1690.0	0.60	0.45	101	
MCSG43Z121MFC	120.0±20%	1755.0	0.52	0.42	121	
MCSG43Z151MFC	150.0±20%	2850.0	0.45	0.30	151	
MCSG43Z221MFC	220.0±20%	3250.0	0.34	0.30	221	
MCSG43Z471MFC	470.0±20%	9360.0	0.20	0.20	471	

Note:

1.Inductance is measured at 100 KHz and 0.25 Vrms.

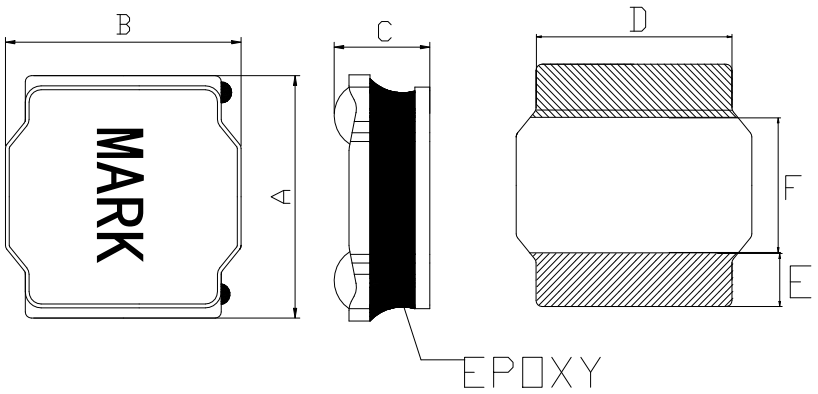
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 30% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

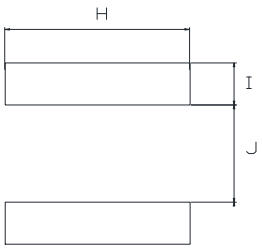
(Unit: mm)



Code	Dimensions
A	5.0±0.2
B	5.0±0.2
C	2.0+0.2/-0.3
D	4.0 Ref
E	1.4 Ref
F	2.3 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.65 Ref
J	2.0 Ref
H	4.7 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ	Marking	
MCSG52Z1R0NFC	1.0±30%	26.0	4.33	3.80	1R0	
MCSG52Z1R5NFC	1.5±30%	34.0	3.78	3.20	1R5	
MCSG52Z2R2NFC	2.2±30%	49.5	3.06	2.90	2R2	
MCSG52Z3R3MFC	3.3±20%	58.5	2.70	2.50	3R3	
MCSG52Z4R7MFC	4.7±20%	78.0	1.98	2.20	4R7	
MCSG52Z6R8MFC	6.8±20%	108.0	1.80	1.80	6R8	
MCSG52Z100MFC	10.0±20%	156.0	1.44	1.55	100	
MCSG52Z150MFC	15.0±20%	234.0	1.17	1.20	150	
MCSG52Z220MFC	22.0±20%	293.8	0.90	1.00	220	
MCSG52Z330MFC	33.0±20%	462.8	0.72	0.75	330	
MCSG52Z470MFC	47.0±20%	656.5	0.58	0.65	470	

Note:

1.Inductance is measured at 100 KHz and 0.25 Vrms.

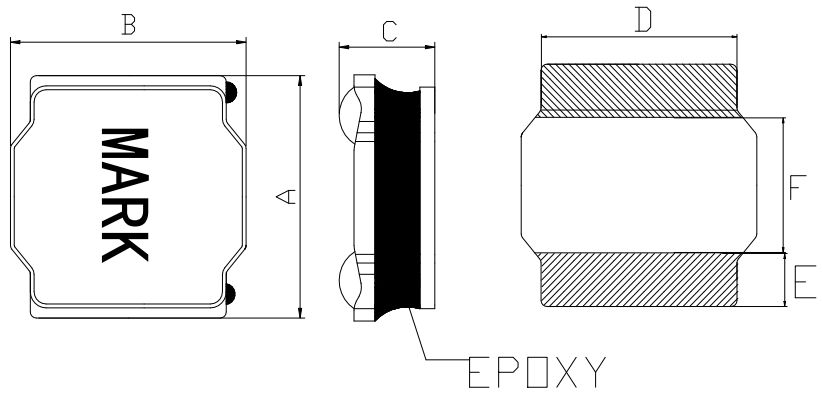
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 30% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

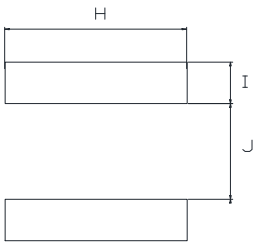
(Unit: mm)



Code	Dimensions
A	5.0±0.2
B	5.0±0.2
C	4.0+0.2/-0.3
D	4.0 Ref
E	1.4 Ref
F	2.3 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.65 Ref
J	2.0 Ref
H	4.7 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ	Marking	
MCSG54Z1R0NFC	1.0±30%	18.2	6.75	4.60	1R0	
MCSG54Z1R2NFC	1.2±30%	21.0	6.50	4.15	1R2	
MCSG54Z1R5NFC	1.5±30%	20.8	6.30	4.30	1R5	
MCSG54Z2R2NFC	2.2±30%	27.3	4.90	3.70	2R2	
MCSG54Z3R3MFC	3.3±20%	33.8	3.95	3.40	3R3	
MCSG54Z4R7MFC	4.7±20%	41.6	3.50	3.00	4R7	
MCSG54Z6R8MFC	6.8±20%	65.0	2.90	2.40	6R8	
MCSG54Z100MFC	10.0±20%	83.0	2.35	2.10	100	
MCSG54Z150MFC	15.0±20%	117.0	2.00	1.80	150	
MCSG54Z220MFC	22.0±20%	175.5	1.60	1.40	220	
MCSG54Z330MFC	33.0±20%	247.0	1.30	1.10	330	
MCSG54Z470MFC	47.0±20%	403.0	1.08	0.90	470	
MCSG54Z101MFC	100.0±20%	1040.0	0.60	0.60	101	

Note:

1.Inductance is measured at 100 KHz and 0.25 Vrms.

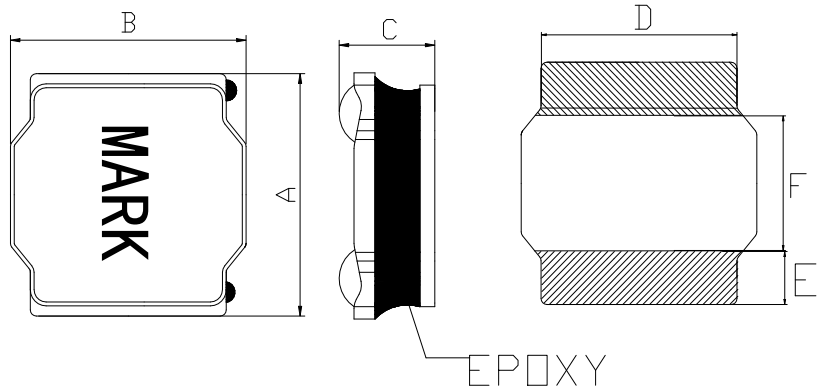
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 30% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

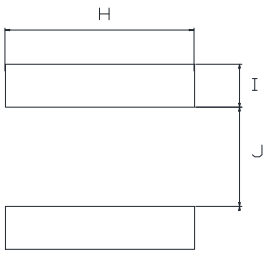
(Unit: mm)



Code	Dimensions
A	6.0±0.3
B	6.0±0.3
C	2.0+0.2/-0.3
D	4.9 Ref
E	1.65 Ref
F	2.7 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	2.0 Ref
J	2.3 Ref
H	5.7 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ	Marking	
MCSG62Z1R0NFC	1.0±30%	26.0	4.30	3.69	1R0	
MCSG62Z1R5NFC	1.5±30%	33.8	4.25	3.24	1R5	
MCSG62Z2R2NFC	2.2±30%	45.0	3.75	2.88	2R2	
MCSG62Z3R3NFC	3.3±30%	58.0	2.88	2.43	3R3	
MCSG62Z4R7NFC	4.7±30%	75.4	2.25	1.98	4R7	
MCSG62Z6R8NFC	6.8±30%	110.5	1.98	1.62	6R8	
MCSG62Z100MFC	10.0±20%	162.5	1.75	1.44	100	
MCSG62Z150MFC	15.0±20%	247.0	1.17	1.17	150	
MCSG62Z220MFC	22.0±20%	338.0	0.99	0.99	220	

Note:

1.Inductance is measured at 100 KHz and 0.25 Vrms.

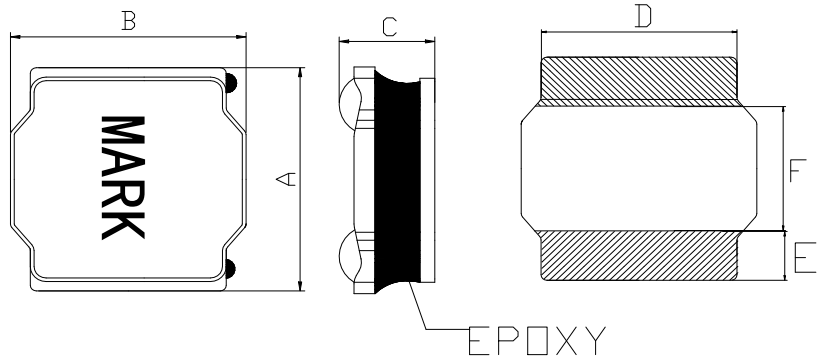
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 30% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

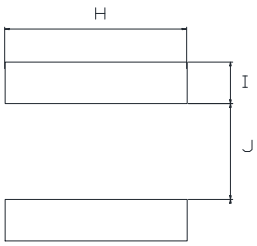
(Unit: mm)



Code	Dimensions
A	6.0±0.3
B	6.0±0.3
C	3.0 Max
D	4.9 Ref
E	1.8 Ref
F	2.4 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	2.15 Ref
J	2.0 Ref
H	5.7 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ	Marking	
MCSG628Z1R0NFC	1.0±30%	20.0	5.75	5.20	1R0	
MCSG628Z1R5NFC	1.5±30%	25.0	5.25	4.58	1R5	
MCSG628Z2R2NFC	2.2±30%	28.0	5.10	3.75	2R2	
MCSG628Z3R3NFC	3.3±30%	40.0	3.63	3.48	3R3	
MCSG628Z4R7NFC	4.7±30%	45.0	3.00	3.08	4R7	
MCSG628Z5R6NFC	5.6±30%	65.0	2.80	2.45	5R6	
MCSG628Z6R8MFC	6.8±20%	72.0	2.60	2.40	6R8	
MCSG628Z100MFC	10.0±20%	96.0	2.05	1.95	100	
MCSG628Z150MFC	15.0±20%	163.0	1.75	1.45	150	
MCSG628Z220MFC	22.0±20%	185.0	1.45	1.40	220	
MCSG628Z330MFC	33.0±20%	286.0	1.20	1.22	330	
MCSG628Z470MFC	47.0±20%	410.0	1.15	1.06	470	
MCSG628Z680MFC	68.0±20%	585.0	0.85	0.86	680	
MCSG628Z820MFC	82.0±20%	680.0	0.80	0.70	820	
MCSG628Z101MFC	100.0±20%	854.0	0.65	0.60	101	
MCSG628Z151MFC	150±20%	1100.0	0.48	0.42	151	
MCSG628Z471MFC	470±20%	3500.0	0.23	0.28	471	
MCSG628Z102MFC	1000±20%	7800.0	0.20	0.23	102	

Note:

1.Inductance is measured at 100 KHz and 0.25 Vrms.

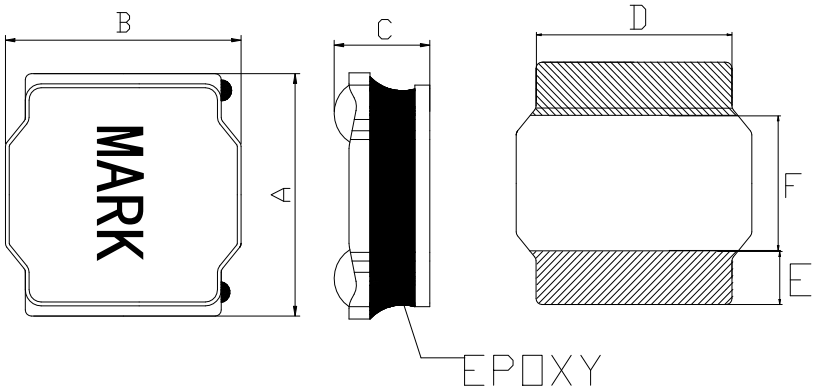
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 30% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

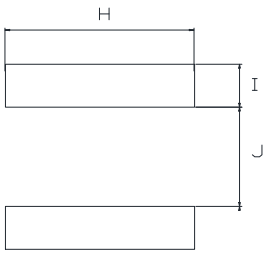
(Unit: mm)



Code	Dimensions
A	6.0±0.3
B	6.0±0.3
C	4.5+0.2/-0.3
D	5.1 Ref
E	1.8 Ref
F	2.7 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.95 Ref
J	2.4 Ref
H	5.7 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ	Marking	
MCSG645Z1R0NFC	1.0±30%	15.6	9.85	6.50	1R0	
MCSG645Z1R5NFC	1.5±30%	19.5	9.00	5.90	1R5	
MCSG645Z2R2NFC	2.2±30%	24.0	6.90	5.10	2R2	
MCSG645Z3R3NFC	3.3±30%	31.2	5.90	4.30	3R3	
MCSG645Z4R7MFC	4.7±20%	40.3	5.00	3.90	4R7	
MCSG645Z5R6MFC	5.6±20%	52.0	4.27	3.30	5R6	
MCSG645Z6R8MFC	6.8±20%	55.9	3.90	3.20	6R8	
MCSG645Z8R2MFC	8.2±20%	59.8	3.10	2.60	8R2	
MCSG645Z100MFC	10.0±20%	74.1	3.30	2.45	100	
MCSG645Z150MFC	15.0±20%	104.0	2.50	2.20	150	
MCSG645Z220MFC	22.0±20%	162.5	2.00	1.90	220	
MCSG645Z270MFC	27.0±20%	208.0	1.90	1.50	270	
MCSG645Z330MFC	33.0±20%	214.5	1.65	1.40	330	
MCSG645Z470MFC	47.0±20%	318.5	1.40	1.20	470	
MCSG645Z680MFC	68.0±20%	429.0	1.20	1.00	680	
MCSG645Z101MFC	100.0±20%	650.0	0.98	0.80	101	
MCSG645Z221MFC	220.0±20%	1690.0	0.70	0.38	221	

Note:

1.Inductance is measured at 100 KHz and 0.25 Vrms.

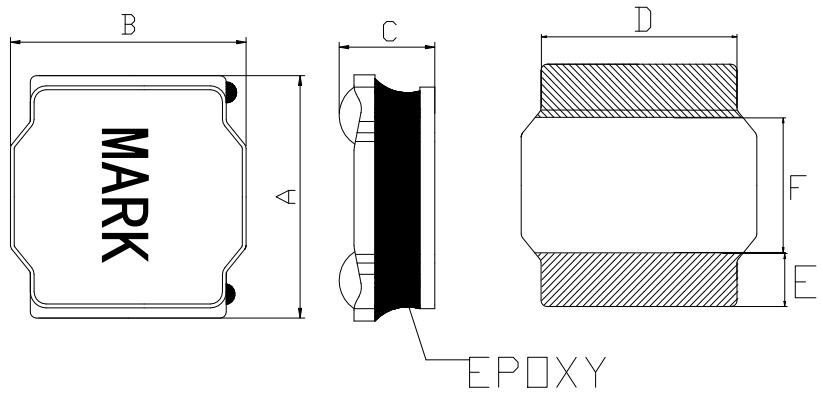
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 35% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

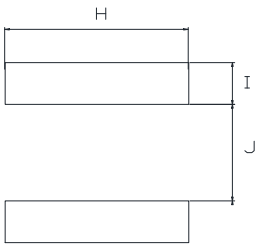
(Unit: mm)



Code	Dimensions
A	8.0±0.3
B	8.0±0.3
C	4.2 Max
D	6.3 Ref
E	2.45 Ref
F	3.1 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	2.7 Ref
J	2.9 Ref
H	7.5 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ	Marking	
MCSG84Z1R0NFC	1.0±30%	9.8	10.15	7.50	1R0	
MCSG84Z1R5NFC	1.5±30%	13.0	8.15	7.00	1R5	
MCSG84Z2R2NFC	2.2±30%	15.6	8.00	6.50	2R2	
MCSG84Z3R3NFC	3.3±30%	22.1	6.50	6.00	3R3	
MCSG84Z4R7NFC	4.7±30%	24.7	5.40	4.95	4R7	
MCSG84Z5R6NFC	5.6±30%	31.0	5.13	4.00	5R6	
MCSG84Z6R8MFC	6.8±20%	32.5	4.86	3.60	6R8	
MCSG84Z100MFC	10.0±20%	52.0	3.87	3.30	100	
MCSG84Z150MFC	15.0±20%	65.0	2.95	2.60	150	
MCSG84Z220MFC	22.0±20%	104.0	2.52	2.10	220	
MCSG84Z330MFC	33.0±20%	143.0	2.07	2.00	330	
MCSG84Z470MFC	47.0±20%	210.0	1.70	1.75	470	
MCSG84Z680MFC	68.0±20%	312.0	1.45	1.45	680	
MCSG84Z101MFC	100.0±20%	442.0	1.26	1.10	101	
MCSG84Z151MFC	150.0±20%	624.0	0.90	0.90	151	
MCSG84Z221MFC	220.0±20%	871.0	0.84	0.60	221	

Note:

1.Inductance is measured at 100 KHz and 0.25 Vrms.

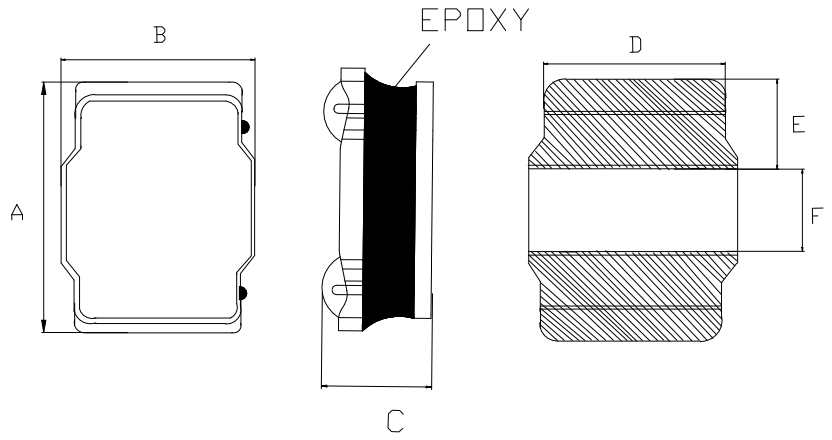
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 30% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

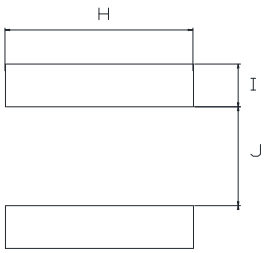
(Unit: mm)



Code	Dimensions
A	2.0±0.2
B	1.6±0.3
C	1.0+0.2/-0.3
D	1.5 Ref
E	0.6 Ref
F	0.8 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	0.9 Ref
J	0.5 Ref
H	1.8 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ		
MCSG201610ZR24NHC	0.24±30%	45	4.50	3.45		
MCSG201610ZR33NHC	0.33±30%	54	4.20	3.10		
MCSG201610ZR47NHC	0.47±30%	56	4.00	3.10		
MCSG201610ZR68NHC	0.68±30%	65	3.50	2.70		
MCSG201610Z1R0MHC	1.0±20%	100	3.35	2.30		
MCSG201610Z1R5MHC	1.5±20%	135	1.95	2.00		
MCSG201610Z2R2MHC	2.2±20%	195	1.90	1.60		
MCSG201610Z4R7MHC	4.7±20%	440	1.20	1.00		
MCSG201610Z6R8MHC	6.8±20%	630	0.90	0.80		
MCSG201610Z100MHC	10.0±20%	890	0.80	0.70		

Note:

1.Inductance is measured at 1.0 MHz and 1.0 Vrms.

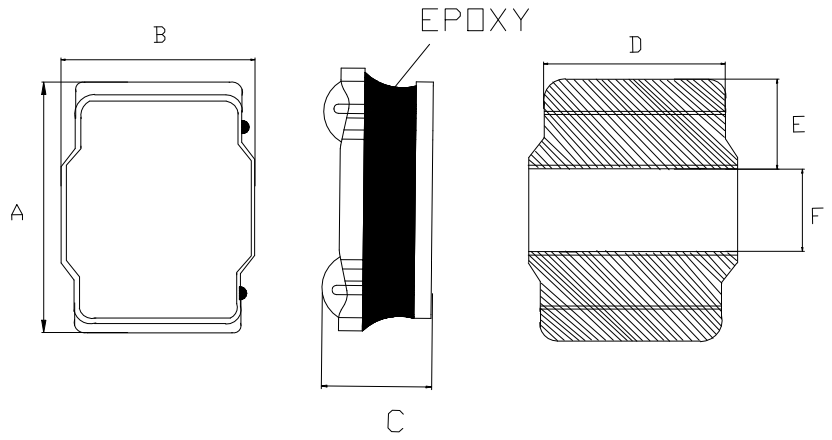
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 35% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

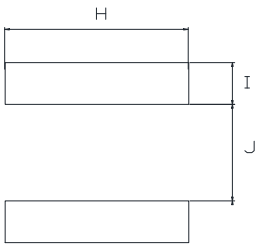
(Unit: mm)



Code	Dimensions
A	2.5±0.3
B	2.1±0.3
C	1.0+0.2/-0.3
D	1.65 Ref
E	0.8 Ref
F	0.9 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.1 Ref
J	0.5 Ref
H	1.95 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ		
MCSG25210ZR24NHC	0.24±30%	33	5.00	4.50		
MCSG25210ZR33NHC	0.33±30%	39	4.80	4.05		
MCSG25210ZR47NHC	0.47±30%	45	4.40	3.60		
MCSG25210ZR68NHC	0.68±30%	59	3.20	3.20		
MCSG25210Z1R0MHC	1.0±20%	85	3.10	2.50		
MCSG25210Z1R5MHC	1.5±20%	106	2.60	2.30		
MCSG25210Z2R2MHC	2.2±20%	155	1.90	1.80		
MCSG25210Z3R3MHC	3.3±20%	235	1.60	1.40		
MCSG25210Z4R7MHC	4.7±20%	290	1.30	1.10		
MCSG25210Z6R8MHC	6.8±20%	480	1.10	1.00		
MCSG25210Z100MHC	10.0±20%	740	0.90	0.75		

Note:

1.Inductance is measured at 1.0 MHz and 1.0 Vrms.

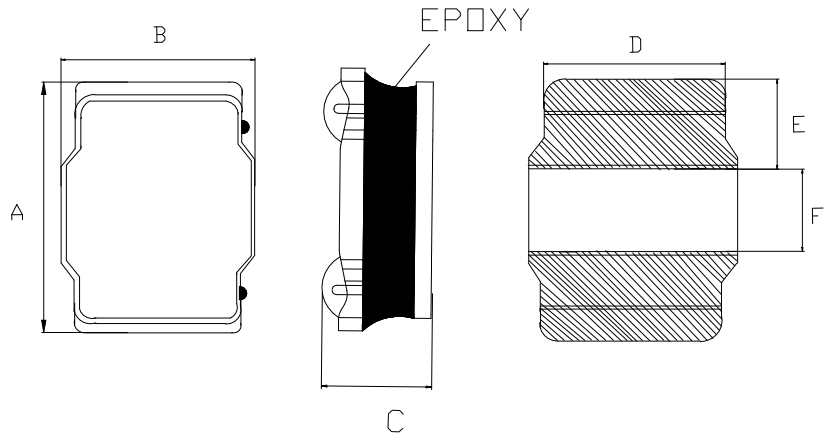
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 35% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

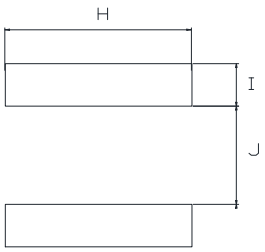
(Unit: mm)



Code	Dimensions
A	2.5±0.3
B	2.1±0.3
C	1.2+0.2/-0.3
D	1.65 Ref
E	0.8 Ref
F	0.9 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.1 Ref
J	0.5 Ref
H	1.95 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ		
MCSG25212ZR24NHC	0.24±30%	30	6.50	4.70		
MCSG25212ZR33NHC	0.33±30%	36	5.30	4.30		
MCSG25212ZR47NHC	0.47±30%	40	4.90	4.00		
MCSG25212ZR68NHC	0.68±30%	50	3.80	3.60		
MCSG25212Z1R0MHC	1.0±20%	60	3.60	3.40		
MCSG25212Z1R5MHC	1.5±20%	86	2.90	2.80		
MCSG25212Z2R2MHC	2.2±20%	120	2.60	2.15		
MCSG25212Z3R3MHC	3.3±20%	215	1.90	1.80		
MCSG25212Z4R7MHC	4.7±20%	260	1.80	1.45		
MCSG25212Z6R8MHC	6.8±20%	380	1.15	1.10		
MCSG25212Z100MHC	10.0±20%	480	1.10	1.00		

Note:

1.Inductance is measured at 1.0 MHz and 1.0 Vrms.

2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 35% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

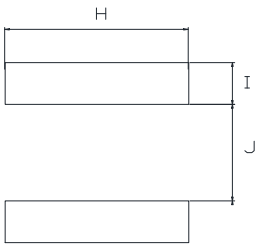
Mechanical & Dimensions

(Unit: mm)

Code	Dimensions
A	3.0±0.2
B	3.0±0.2
C	1.2+0.2/-0.3
D	2.50 Ref
E	0.80 Ref
F	1.40 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.2 Ref
J	1.0 Ref
H	3.0 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ		
MCSG312ZR33MHC	0.33±20%	32	7.20	4.10		
MCSG312ZR47MHC	0.47±20%	40	6.80	3.80		
MCSG312ZR68MHC	0.68±20%	46	5.80	3.60		
MCSG312Z1R0MHC	1.0±20%	54	4.20	3.10		
MCSG312Z1R5MHC	1.5±20%	74	3.40	2.50		
MCSG312Z2R2MHC	2.2±20%	108	2.80	2.05		
MCSG312Z3R3MHC	3.3±20%	185	2.20	1.50		
MCSG312Z4R7MHC	4.7±20%	255	2.00	1.15		
MCSG312Z6R8MHC	6.8±20%	340	1.60	1.10		
MCSG312Z100MHC	10.0±20%	474	1.20	1.00		
MCSG312Z150MHC	15.0±20%	740	1.10	0.53		
MCSG312Z220MHC	22.0±20%	1200	0.96	0.40		

Note:

1.Inductance is measured at 100 KHz and 0.25 Vrms.

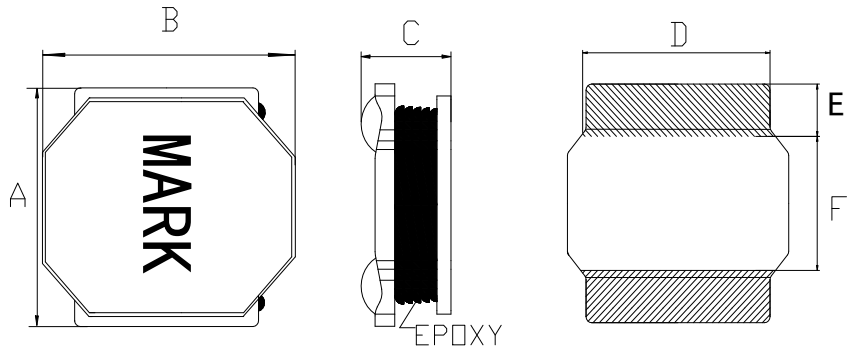
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 30% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

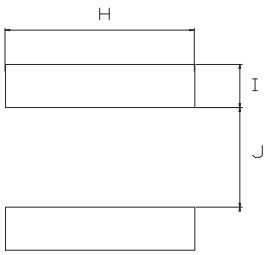
(Unit: mm)



Code	Dimensions
A	4.0±0.2
B	4.0±0.2
C	1.2+0.2/-0.3
D	3.5 Ref
E	1.3 Ref
F	1.4 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.6 Ref
J	1.1 Ref
H	3.8 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Max	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ	Marking	
MCSG412ZR33MH8	0.33±20%	32.0	10.30	4.30	R33	
MCSG412ZR47MH8	0.47±20%	41.0	9.10	3.80	R47	
MCSG412ZR68MH8	0.68±20%	41.0	5.50	3.80	R68	
MCSG412Z1R0MH8	1.0±20%	59.0	5.70	3.20	1R0	
MCSG412Z1R2MH8	1.2±20%	64.0	4.00	3.20	1R2	
MCSG412Z1R5MH8	1.5±20%	70.0	3.90	2.90	1R5	
MCSG412Z2R2MH8	2.2±20%	79.0	2.80	2.70	2R2	
MCSG412Z3R3MH8	3.3±20%	125.0	2.80	2.10	3R3	
MCSG412Z4R7MH8	4.7±20%	166.0	2.30	1.90	4R7	
MCSG412Z6R8MH8	6.8±20%	226.0	1.60	1.60	6R8	
MCSG412Z100MH8	10.0±20%	335.0	1.55	0.77	100	
MCSG412Z220MH8	22.0±20%	679.0	1.05	0.90	220	

Note:

1.Inductance is measured at 1.0 MHz and 1.0 Vrms.

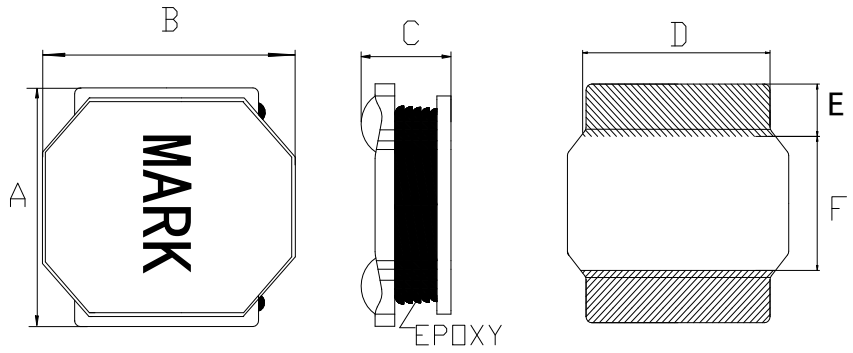
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 35% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Mechanical & Dimensions

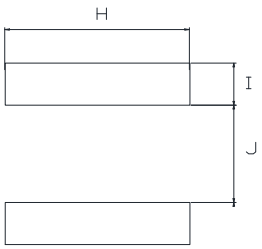
(Unit: mm)



Code	Dimensions
A	4.0±0.2
B	4.0±0.2
C	2.2 Max
D	3.5 Ref
E	1.0 Ref
F	2.0 Ref

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
I	1.3 Ref
J	1.7 Ref
H	3.8 Ref

Electrical Characteristics

Part Number	Inductance[1] (μH)	DCR[2] (mΩ) Typ	I-sat[3] (Amps)Typ	I-rms[4] (Amps)Typ	Marking	
MCSG42ZR47NH8	0.47±30%	28.0	10.00	6.40	R47	
MCSG42Z1R0MH8	1.0±20%	26.0	8.70	5.80	1R0	
MCSG42Z1R5MH8	1.5±20%	32.0	7.70	5.20	1R5	
MCSG42Z2R2MH8	2.2±20%	44.0	6.10	4.30	2R2	
MCSG42Z3R3MH8	3.3±20%	64.0	4.70	3.45	3R3	
MCSG42Z4R7MH8	4.7±20%	86.0	4.00	2.85	4R7	
MCSG42Z6R8MH8	6.8±20%	135.0	3.00	2.40	6R8	
MCSG42Z100MH8	10.0±20%	180.0	2.80	2.00	100	

Note:

1.Inductance is measured at 1.0 MHz and 1.0 Vrms.

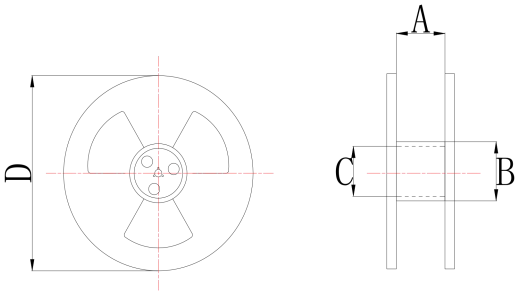
2.The nominal DCR is measured at 25℃ ambient temperature.

3.The I-sat that will cause initial inductance value approximately 35% rolloff.

4.The I-rms that will cause temperature rise approximate 40°C without core loss.

Packaging

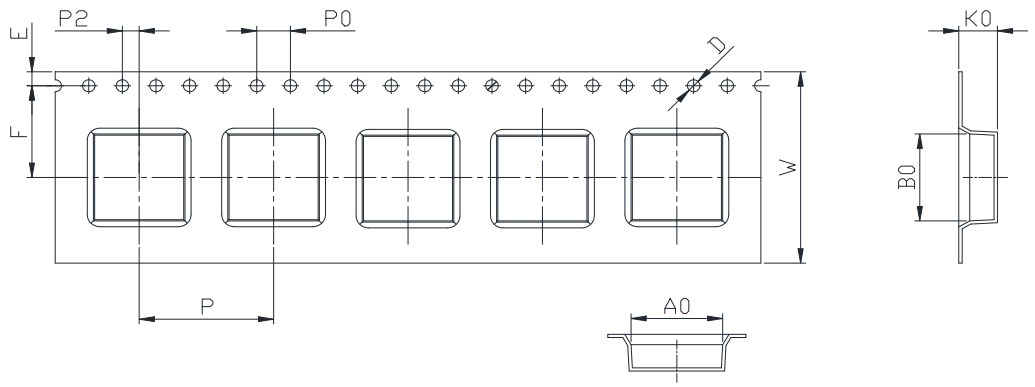
Reel Dimension:



P/N	Type	A(mm)	B(mm)	C(mm)	D(mm)	Chip/Reel
MCSG201610Z-F4	7" x 8mm	8.0 ± 2	39 ± 2	60 ± 0.5	180± 2	2,000
MCSG25210Z-F4	7" x 8mm	8.0 ± 2	39 ± 2	60 ± 0.5	180± 2	2,000
MCSG25212Z-F4	7" x 8mm	8.0 ± 2	39 ± 2	60 ± 0.5	180± 2	2,000
MCSG31Z-F8	7" x 8mm	8.0 ± 2	39 ± 2	60 ± 0.5	180± 2	2,000
MCSG312Z-F8	7" x 8mm	8.0 ± 2	39 ± 2	60 ± 0.5	180± 2	2,000
MCSG315Z-FC	7" x 8mm	8.0 ± 2	39 ± 2	60 ± 0.5	180± 2	2,000
MCSG412Z-F8	13" x 12mm	12.5 ± 2	100 ± 2	13 ± 0.5	330± 2	4,500
MCSG418Z-F8	13" x 12mm	12.5 ± 2	100 ± 2	13 ± 0.5	330± 2	3,500
MCSG43Z-FC	13" x 12mm	12.5 ± 2	100 ± 2	13 ± 0.5	330± 2	2,000
MCSG52Z-FC	13" x 12mm	12.5 ± 2	100 ± 2	13 ± 0.5	330± 2	2,500
MCSG54Z-FC	13" x 12mm	12.5 ± 2	100 ± 2	13 ± 0.5	330± 2	1,500
MCSG62Z-FC	13" x 12mm	12.5 ± 2	100 ± 2	13 ± 0.5	330± 2	3,000
MCSG628Z-FC	13" x 12mm	12.5 ± 2	100 ± 2	13 ± 0.5	330± 2	2,000
MCSG645Z-FC	13" x 16mm	16.5 ± 2	100 ± 2	13 ± 0.5	330± 2	1,500
MCSG84Z-FC	13" x 16mm	16.5 ± 2	100 ± 2	13 ± 0.5	330± 2	1,000
MCSG201610Z-HC	7" x 8mm	8.0 ± 2	39 ± 2	60 ± 0.5	180± 2	2,000
MCSG25210Z-HC	7" x 8mm	8.0 ± 2	39 ± 2	60 ± 0.5	180± 2	2,000
MCSG25212Z-HC	7" x 8mm	8.0 ± 2	39 ± 2	60 ± 0.5	180± 2	2,000
MCSG312Z-HC	7" x 8mm	8.0 ± 2	39 ± 2	60 ± 0.5	180± 2	2,000
MCSG412Z-H8	13" x 12mm	12.5 ± 2	100 ± 2	13 ± 0.5	330± 2	4,500
MCSG42Z-H8	13" x 12mm	12.5 ± 2	100 ± 2	13 ± 0.5	330± 2	3,000

Packaging

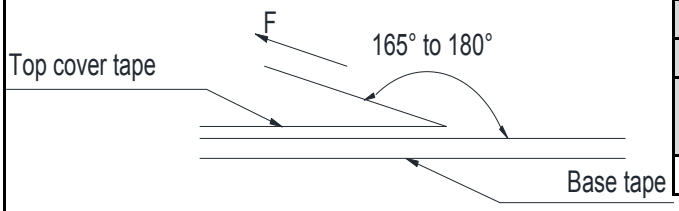
Tape Dimension:



P/N	Ao	Bo	Ko	E	F	D	P2	P	W	P0
MCSG201610Z-F4	2.0±0.1	2.4±0.1	1.2±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	4.0±0.1	8.0±0.3	4.0±0.1
MCSG25210Z-F4	2.4±0.1	3.0±0.1	1.2±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	4.0±0.1	8.0±0.3	4.0±0.1
MCSG25212Z-F4	2.4±0.1	3.0±0.1	1.4±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	4.0±0.1	8.0±0.3	4.0±0.1
MCSG31Z-F8	3.2±0.1	3.2±0.1	1.32±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	4.0±0.1	8.0±0.3	4.0±0.1
MCSG312Z-F8	3.3±0.1	3.3±0.1	1.4±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	4.0±0.1	8.0±0.3	4.0±0.1
MCSG315Z-FC	3.2±0.1	3.2±0.1	1.7±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	4.0±0.1	8.0±0.3	4.0±0.1
MCSG412Z-F8	4.25±0.1	4.25±0.1	1.40±0.1	1.75±0.1	5.5±0.1	1.55±0.1	2.0±0.1	8.0±0.1	12±0.3	4.0±0.1
MCSG418Z-F8	4.3±0.1	4.3±0.1	2.25±0.1	1.75±0.1	5.5±0.1	1.55±0.1	2.0±0.1	8.0±0.1	12±0.3	4.0±0.1
MCSG43Z-FC	4.3±0.2	4.3±0.2	3.25±0.1	1.75±0.1	5.5±0.1	1.55±0.1	2.0±0.1	8.0±0.1	12±0.3	4.0±0.1
MCSG52Z-FC	5.3±0.1	5.3±0.1	2.3±0.1	1.75±0.1	5.5±0.1	1.55±0.1	2.0±0.1	8.0±0.1	12±0.3	4.0±0.1
MCSG54Z-FC	5.3±0.1	5.3±0.1	4.2±0.1	1.75±0.1	5.5±0.1	1.55±0.1	2.0±0.1	8.0±0.1	12±0.3	4.0±0.1
MCSG62Z-FC	6.3±0.1	6.3±0.1	2.20±0.1	1.75±0.1	5.5±0.1	1.55±0.1	2.0±0.1	8.0±0.1	12±0.3	4.0±0.1
MCSG628Z-FC	6.3±0.1	6.3±0.1	3.0±0.1	1.75±0.1	5.5±0.1	1.55±0.1	2.0±0.1	8.0±0.1	12±0.3	4.0±0.1
MCSG645Z-FC	6.3±0.1	6.3±0.1	4.75±0.1	1.75±0.1	7.5±0.1	1.55±0.1	2.0±0.1	8.0±0.1	16±0.3	4.0±0.1
MCSG84Z-FC	8.7±0.1	8.7±0.1	4.5±0.1	1.75±0.1	7.5±0.1	1.55±0.1	2.0±0.1	12.0±0.1	16±0.3	4.0±0.1
MCSG201610Z-HC	2.0±0.1	2.4±0.1	1.2±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	4.0±0.1	8.0±0.3	4.0±0.1
MCSG25210Z-HC	2.4±0.1	3.0±0.1	1.2±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	4.0±0.1	8.0±0.3	4.0±0.1
MCSG25212Z-HC	2.4±0.1	3.0±0.1	1.4±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	4.0±0.1	8.0±0.3	4.0±0.1
MCSG312Z-HC	3.2±0.1	3.2±0.1	1.6±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	4.0±0.1	8.0±0.3	4.0±0.1
MCSG412Z-H8	4.25±0.1	4.25±0.1	1.4±0.1	1.75±0.1	5.5±0.1	1.55±0.1	2.0±0.1	8.0±0.1	12±0.3	4.0±0.1
MCSG42Z-H8	4.3±0.1	4.3±0.1	2.25±0.1	1.75±0.1	5.5±0.1	1.55±0.1	2.0±0.1	8.0±0.1	12±0.3	4.0±0.1

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 (℃)	Room Humidity (%)	Room atrn (hPa)	Teaming Speed (mm/min)
5~35	45~85	860~1060	300

※Storage Conditions

1. Temperature and humidity conditions: -40℃ ~ +85℃ 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

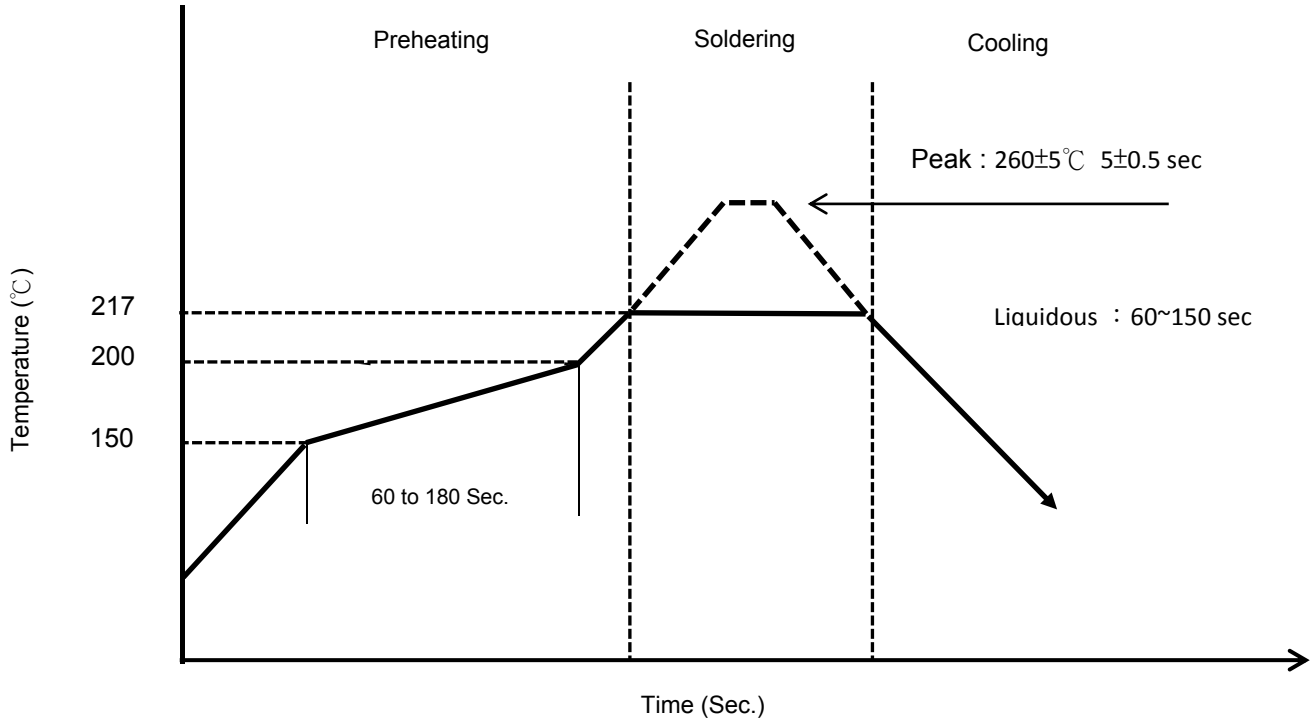
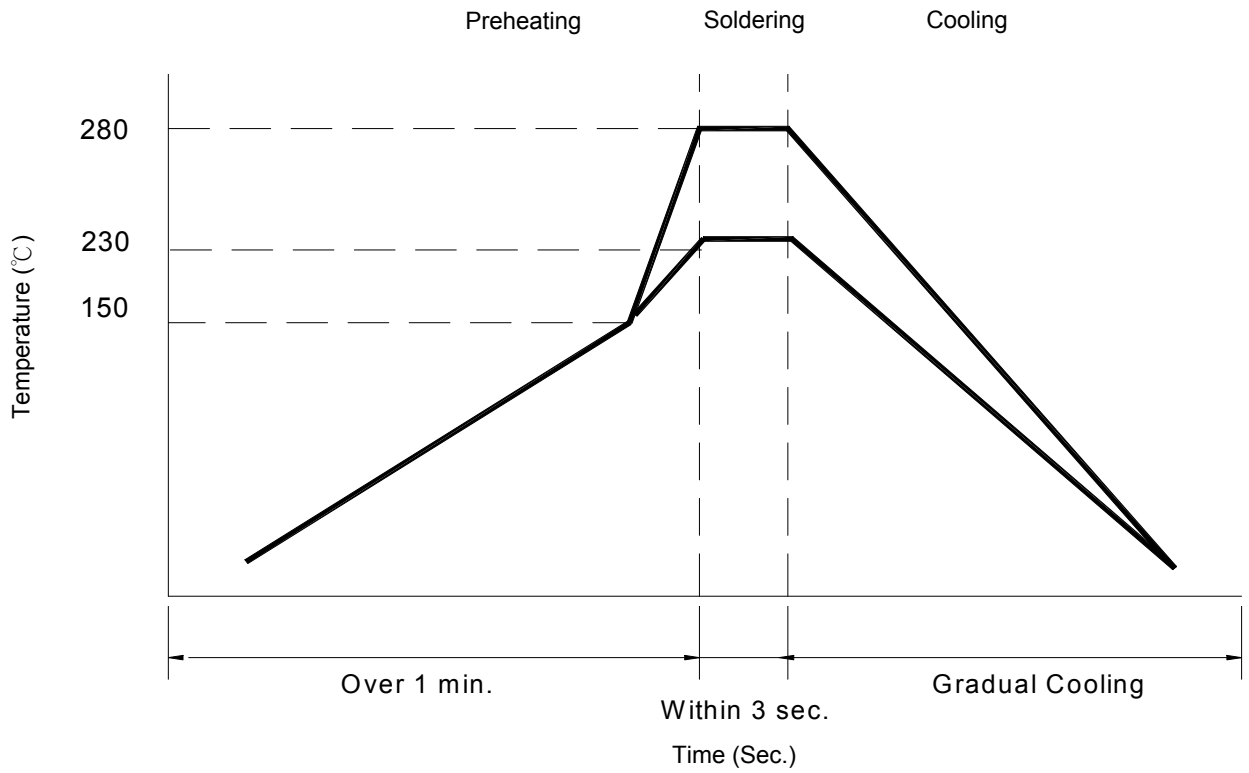


Figure 2. Hand Soldering



Reliability and Testing Conditions

Item	Specification	Conditions
Operating temperature range	-40℃ ~ +125℃ (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.	- Preheat: 150 ℃, 60 sec - Solder: Sn96.5%-Ag3%-Cu0.5% - Temperature: 245±5℃ - 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.	- 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±2°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 hour drying under normal condition.
Thermal shock	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 100 cycles of following condition.
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	Solder a chip to test substrate, and then laterally apply a load 10N in the arrow direction, Duration :5s
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

Step	Temperature (℃)	Times (min.)
1	-40±2°C	30
2	Room Temperature	Within 3
3	125±3°C	30
4	Room Temperature	Within 3