MORE® CHANCE 茂昌电子

CUSTOMER :	STD
PRODUCTS :	SHIELDED SMD POWER INDUCTOR
PART NO :	MCSHC Series
CUST P/ NO :	
DATE :	2021.08.30
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	-	-	-	2021.08.30

MCSHC Series

- *SHIELDED SMD POWER INDUCTOR*
- *Operating Temperature up tp -40 ℃ ~ 125 ℃*
- *High Current up to 95.0A*
- *Low DCR down to 0.18mOhms*
- *Environmental Lead free*
- *Environmental RoHS2.0 compliant*
- *Environmental halogen free*
- *Storage Temperature ：-40 ˚C to +125 ˚C.*
- *Packaging 13"Reel, Plastic tape: 12~24 mm wide*

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FEATURES

- Ferrite based with lower core loss
- Frerrite High Bs material.
- Accurate&low DCR design
- Ultra high current capacity.

Applications

- Multi-phase and Vcore regulators.
- Server and desktop VRMs and EVRDs.
- Data networking and storage systems.
- Graphics cards and battery power systems.
- Buck Converter,VRMs.

PRODUCT IDENTIFICATION

MC	SHC	444	Z	R10	M	R32
①	②	③	④	⑤	⑥	⑦

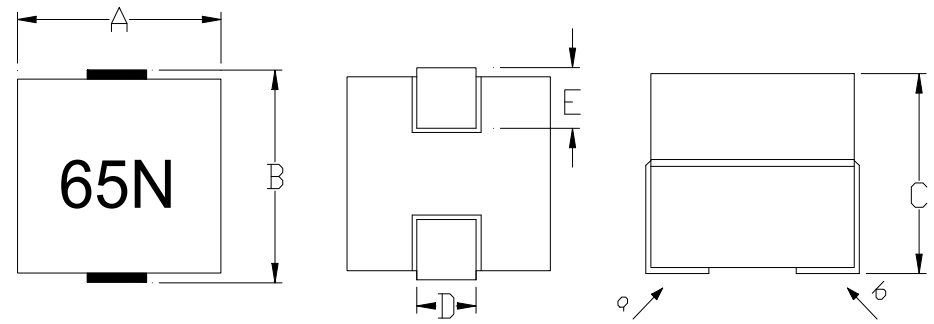
① Brand & Product classification
② Product Series NO.(SHC：SMD Power Inductors.)
③ External Dimensions.(444：L:4.0 × W:4.0 × H:4.0) [mm]
④ Separator code.
⑤ Nominal Inductance

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

⑥ Inductance Tolerance.(L：±15% ; M：±20% ; N：±30%)
⑦ Nominal DC Resistance.(R32：0.32mΩ)

Mechanical & Dimensions

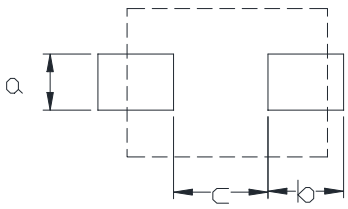
(Unit: mm)



Code	Dimensions
A	4.0 Max
B	4.2 Max
C	4.0 Max
D	1.4 Typ
E	1.3 Typ
F	4.8±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.9 Ref
b	1.7 Ref
c	0.9 Ref

Electrical Characteristics

Part Number	Inductance[1] (nH)	DCR[2] (mΩ)	I-sat[3.1] (Amps)Max	I-sat[3.2] (Amps)Max	I-sat[3.3] (Amps)Max	I-rms[4] (Amps)Typs
MCSHC444Z22NHMR32	22±20%	0.32±10%	40.0	34.0	32	19.0
MCSHC444Z65NHMR32	65±20%	0.32±10%	26.0	22.0	20	19.0
MCSHC444ZR10MR32	100±20%	0.32±10%	17.0	13.0	9.5	19.0

Note:

1.Inductance is measured at 100 KHz and 1.0 Vrms at 25℃

2.The nominal DCR is measured at 20℃ ambient temperature.

3.1The I-sat that will cause initial inductance value approximately 20% rolloff at 25℃

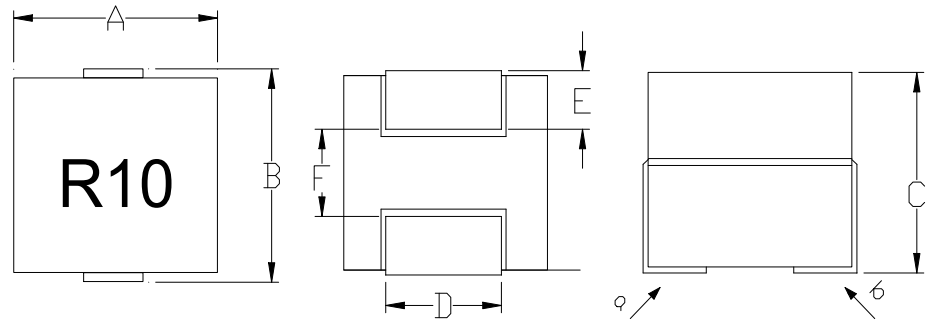
3.2The I-sat that will cause initial inductance value approximately 20% rolloff at 100℃

3.3The I-sat that will cause initial inductance value approximately 20% rolloff at 125℃

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

Mechanical & Dimensions

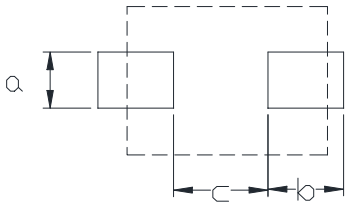
(Unit: mm)



Code	Dimensions
A	7.0 Max
B	7.0 Max
C	5.0 Max
D	2.5±0.3
E	1.52±0.3
F	6.05±0.5

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	2.8 Ref
b	1.8 Ref
c	5.75 Ref

Electrical Characteristics

Part Number	Inductance[1] (nH)	DCR[2] (mΩ)	I-sat[3.1] (Amps)Max	I-sat[3.2] (Amps)Max	I-rms[4] (Amps)Typs	
MCSHC75ZR15LR32	150±15%	0.32±10%	30.0	24.0	24.0	

Note:

1.Inductance is measured at 100 KHz and 1.0 Vrms at 25℃

2.The nominal DCR is measured at 20℃ ambient temperature.

3.1The I-sat that will cause initial inductance value approximately 20% rolloff at 25℃

3.2The I-sat that will cause initial inductance value approximately 20% rolloff at 100℃

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

Mechanical & Dimensions

(Unit: mm)

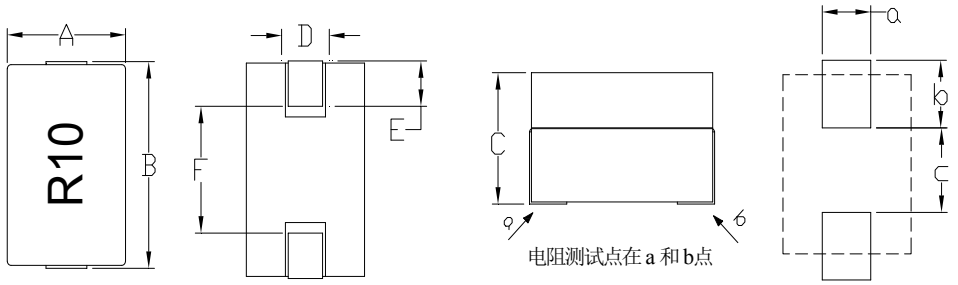
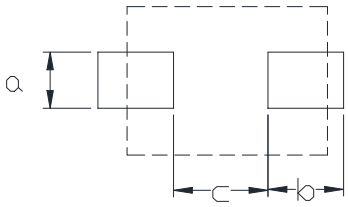


Fig. 26

Code	Dimensions
A	6.4 Max
B	9.6 Max
C	8.0 Max
D	2.14±0.2
E	2.3±0.3
F	4.6±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	2.54 Ref
b	3.2 Ref
c	4.0 Ref

Electrical Characteristics

Part Number	Inductance[1] (nH)	DCR[2] (mΩ)	I-sat[3.1] (Amps)Max	I-sat[3.2] (Amps)Max	I-rms[4] (Amps)Typs	
MCSHC09608ZR10LR29	100±15%	0.29±10%	94.0	81.0	51	
MCSHC09608ZR12LR29	120±15%	0.29±10%	79.0	68.0	51	
MCSHC09608ZR15LR29	150±15%	0.29±10%	65.0	54.0	51	
MCSHC09608ZR22LR29	220±15%	0.29±10%	44.0	37.0	51	
MCSHC09608ZR28LR29	280±15%	0.29±10%	34.0	29.0	51	
MCSHC09608ZR30LR29	300±15%	0.29±10%	32.0	27.0	51	

Note:

1.Inductance is measured at 100 KHz and 1.0 Vrms at 25℃

2.The nominal DCR is measured at 20℃ ambient temperature.

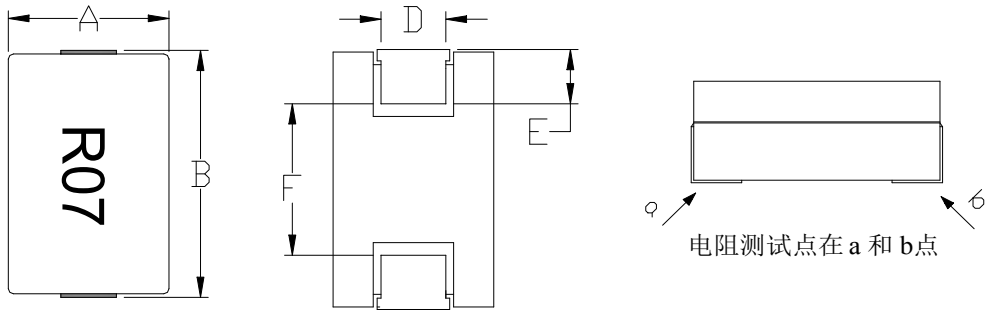
3.1The I-sat that will cause initial inductance value approximately 20% rolloff at 25℃

3.2The I-sat that will cause initial inductance value approximately 20% rolloff at 125℃

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

Mechanical & Dimensions

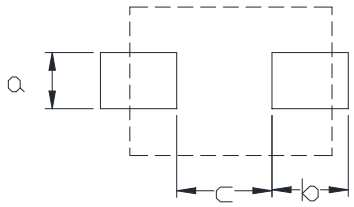
(Unit: mm)



Code	Dimensions
A	6.8±0.3
B	9.3±0.3
C	5.3±0.2
D	2.3±0.15
E	2.3±0.3
F	4.8±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	2.6 Ref
b	2.6 Ref
c	4.5 Ref

Electrical Characteristics

Part Number	Inductance[1] (nH)	DCR[2] (mΩ)	I-sat[3.1] (Amps)Max	I-sat[3.2] (Amps)Max	I-sat[3.3] (Amps)Max	I-rms[4] (Amps)Typs
MCSHC09755Z70NHMR14	70±20%	0.14±10%	100.0	85.0	75	65.0

Note:

1.Inductance is measured at 100 KHz and 1.0 Vrms at 25℃

2.The nominal DCR is measured at 20℃ ambient temperature.

3.1The I-sat that will cause initial inductance value approximately 20% rolloff at 25℃

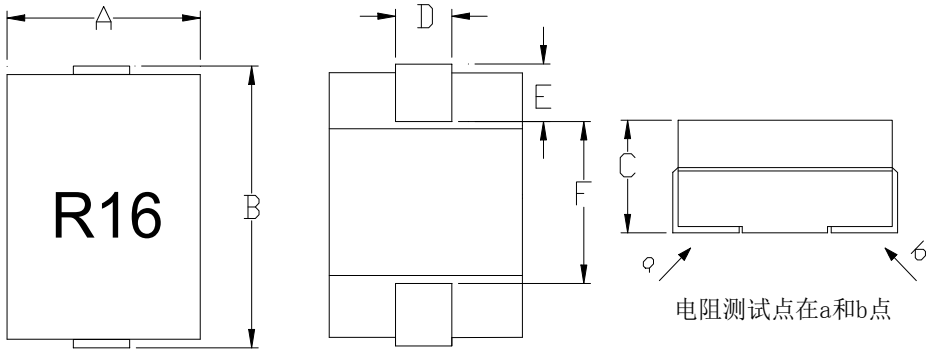
3.2The I-sat that will cause initial inductance value approximately 20% rolloff at 100℃

3.3The I-sat that will cause initial inductance value approximately 20% rolloff at 125℃

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

Mechanical & Dimensions

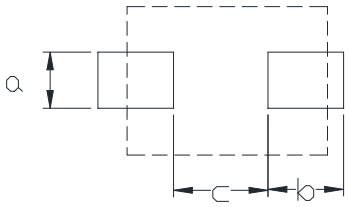
(Unit: mm)



Code	Dimensions
A	6.8±0.2
B	10.0±0.3
C	5.0 Max
D	2.54±0.2
E	2.03±0.3
F	5.94±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	2.85 Ref
b	2.3 Ref
c	5.6 Ref

Electrical Characteristics

Part Number	Inductance[1] (nH)	DCR[2] (mΩ)	I-sat[3.1] (Amps)Max	I-sat[3.2] (Amps)Max	I-sat[3.3] (Amps)Max	I-rms[4] (Amps)Typs
MCSHC10705R16LR23	150±20%	0.23±10%	53,≧115nH	45,≧115nH	45,≧95nH	37.0

Note:

1.Inductance is measured at 100 KHz and 1.0 Vrms at 25℃

2.The nominal DCR is measured at 20℃ ambient temperature.

3.1The I-sat that will cause rolloff nominal inductance value at 25℃

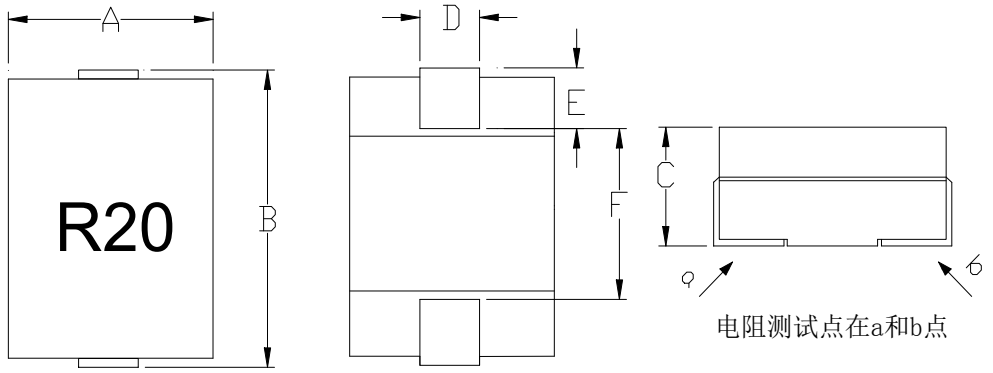
3.2The I-sat that will cause rolloff nominal inductance value at 85℃

3.3The I-sat that will cause rolloff nominal inductance value at 125℃

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

Mechanical & Dimensions

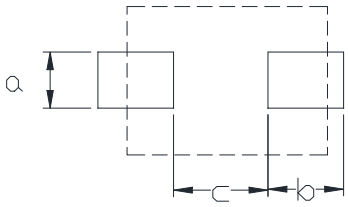
(Unit: mm)



Code	Dimensions
A	6.8±0.2
B	10.0±0.3
C	5.0 Max
D	2.54±0.2
E	2.03±0.3
F	5.94±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	2.8 Ref
b	2.4 Ref
c	5.60 Ref

Electrical Characteristics

Part Number	Inductance[1] (nH)	DCR[2] (mΩ)	I-sat[3] (Amps)Max	I-rms[4] (Amps)Typs		
MCSHC10705R20LR29	200±15%	0.29±10%	43,≧140nH	41.0		

Note:

1.Inductance is measured at 100 KHz and 1.0 Vrms at 25℃

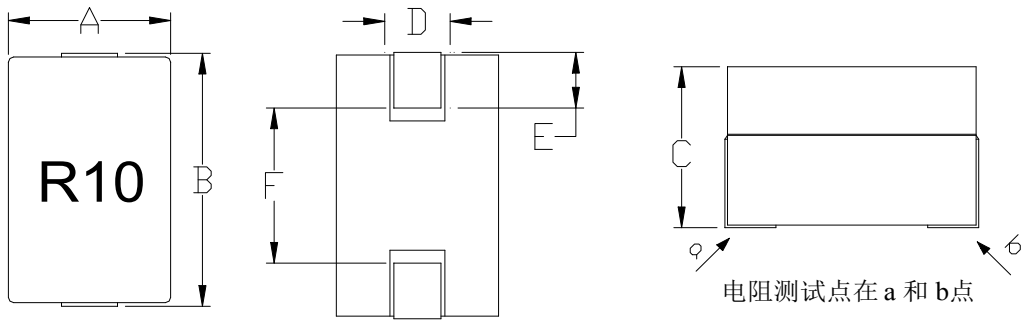
2.The nominal DCR is measured at 20℃ ambient temperature.

3.The I-sat that will cause rolloff nominal inductance value at 25℃

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

Mechanical & Dimensions

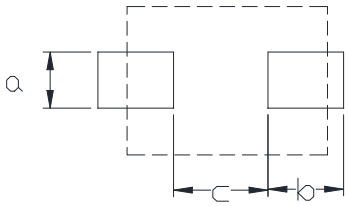
(Unit: mm)



Code	Dimensions
A	8.0 Max
B	10.6 Max
C	7.0 Max
D	2.1±0.2
E	2.2±0.3
F	5.7±0.5

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	2.6 Ref
b	3.0 Ref
c	5.0 Ref

Electrical Characteristics

Part Number	Inductance[1] (nH)	DCR[2] (mΩ)	I-sat[3.1] (Amps)Max	I-sat[3.2] (Amps)Max	I-rms[4] (Amps)Typs	
MCSHC10807ZR12LR29	120±15%	0.29±10%	94.0	86.0	61.0	
MCSHC10807ZR15LR29	150±15%	0.29±10%	75.0	60.0	61.0	
MCSHC10807ZR18LR29	180±15%	0.29±10%	60.0	50.0	61.0	
MCSHC10807ZR22LR29	220±15%	0.29±10%	50.00	40.0	61.0	
MCSHC10807ZR27LR29	270±15%	0.29±10%	41.00	33.0	61.0	
MCSHC10807ZR30LR29	300±15%	0.29±10%	35.00	30.0	61.0	
MCSHC10807ZR33LR29	330±15%	0.29±10%	33.00	26.0	61.0	
MCSHC10807ZR39LR29	390±15%	0.29±10%	28.00	22.0	61.0	
MCSHC10807ZR47LR29	470±15%	0.29±10%	23.00	19.0	61.0	

Note:

1.Inductance is measured at 100 KHz and 1.0 Vrms at 25℃

2.The nominal DCR is measured at 20℃ ambient temperature.

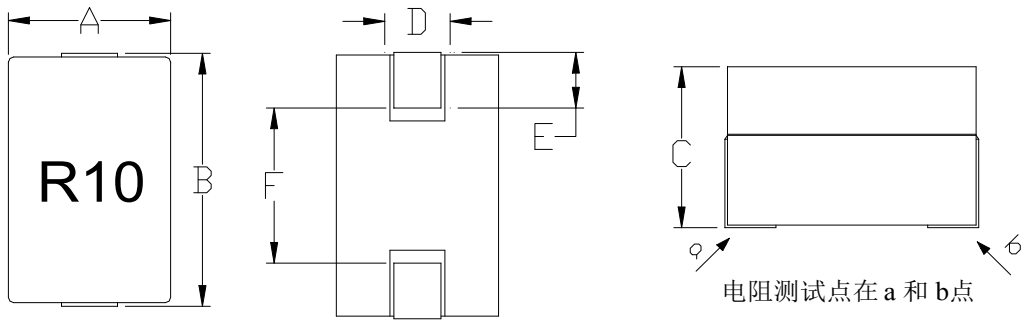
3.1 The I-sat that will cause initial inductance value approximately 20% rolloff at 25℃

3.2 The I-sat that will cause initial inductance value approximately 20% rolloff at 125℃

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

Mechanical & Dimensions

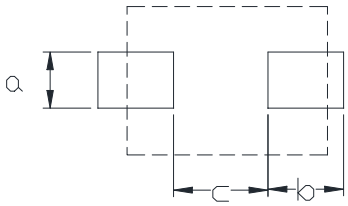
(Unit: mm)



Code	Dimensions
A	8.0 Max
B	10.4 Max
C	7.5 Max
D	2.25±0.2
E	2.54±0.3
F	5.1±0.5

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	2.6 Ref
b	2.8 Ref
c	4.70 Ref

Electrical Characteristics

Part Number	Inductance[1] (nH)	DCR[2] (mΩ)	I-sat[3.1] (Amps)Max	I-sat[3.2] (Amps)Max	I-rms[4] (Amps)Typs	
MCSHC10875ZR12LR29	120±15%	0.29±10%	94.0	86.0	61.0	
MCSHC10875ZR15LR29	150±15%	0.29±10%	76.0	70.0	61.0	
MCSHC10875ZR17LR29	170±15%	0.29±10%	66.0	60.0	61.0	
MCSHC10875ZR22LR29	220±15%	0.29±10%	50.0	43.0	61.0	
MCSHC10875ZR23LR29	230±15%	0.29±10%	48.0	40.0	61.0	
MCSHC10875ZR27LR29	270±15%	0.29±10%	40.0	34.0	61.0	
MCSHC10875ZR30LR29	300±15%	0.29±10%	35.0	30.0	61.0	

Note:

1.Inductance is measured at 100 KHz and 1.0 Vrms at 25℃

2.The nominal DCR is measured at 20℃ ambient temperature.

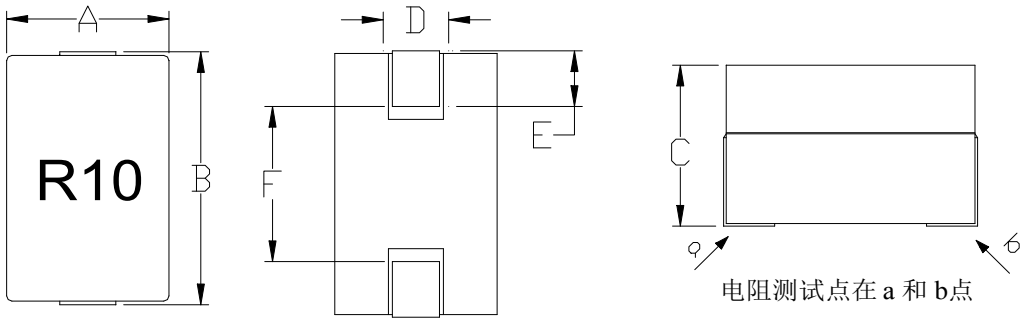
3.1 The I-sat that will cause initial inductance value approximately 20% rolloff at 25℃

3.2 The I-sat that will cause initial inductance value approximately 20% rolloff at 100℃

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

Mechanical & Dimensions

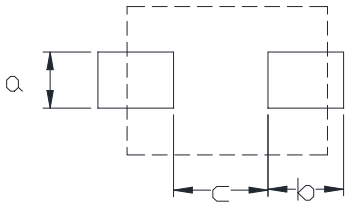
(Unit: mm)



Code	Dimensions
A	8.0 Max
B	10.4 Max
C	8.0 Max
D	2.1±0.2
E	2.54±0.3
F	4.7±0.5

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	2.54 Ref
b	3.65 Ref
c	4.06 Ref

Electrical Characteristics

Part Number	Inductance[1] (nH)	DCR[2] (mΩ)	I-sat[3.1] (Amps)Max	I-sat[3.2] (Amps)Max	I-sat[3.3] (Amps)Max	I-rms[4] (Amps)Typs
MCSHC10808ZR12LR18	120±15%	0.18±10%	95.0	84.0	77.0	68.0
MCSHC10808ZR15LR18	150±15%	0.18±10%	79.0	70.0	66.0	68.0
MCSHC10808ZR18LR18	180±15%	0.18±10%	62.0	56.0	52.0	68.0
MCSHC10808ZR22LR18	220±15%	0.18±10%	58.0	51.0	47.0	68.0

Note:

1.Inductance is measured at 100 KHz and 1.0 Vrms at 25℃

2.The nominal DCR is measured at 20℃ ambient temperature.

3.1 The I-sat that will cause initial inductance value approximately 20% rolloff at 25℃

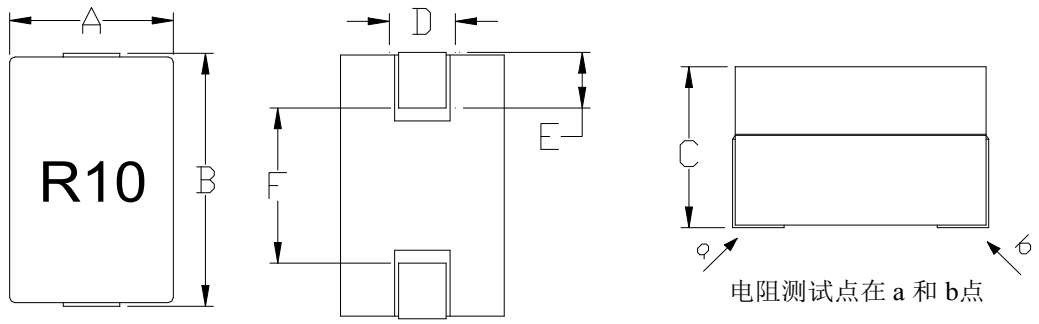
3.2 The I-sat that will cause initial inductance value approximately 20% rolloff at 100℃

3.3 The I-sat that will cause initial inductance value approximately 20% rolloff at 125℃

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

Mechanical & Dimensions

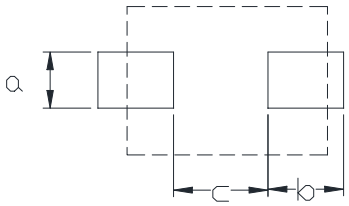
(Unit: mm)



Code	Dimensions
A	7.2 Max
B	11.2 Max
C	7.5 Max
D	1.9±0.2
E	2.5±0.3
F	5.8±0.5

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	2.1 Ref
b	3.1 Ref
c	5.0 Ref

Electrical Characteristics

Part Number	Inductance[1.1] (nH)	Inductance[1.2] (nH)	DCR[2] (mΩ)	I-sat[3.1] (Amps)Max	I-sat[3.2] (Amps)Max	I-rms[4] (Amps)Typs
MCSHC11775ZR12LR29	120±15%	86 min	0.29±10%	90.0	72.0	55.0
MCSHC11775ZR15LR29	150±15%	108 min	0.29±10%	70.0	56.0	55.0
MCSHC11775ZR23LR29	230±15%	166 min	0.29±10%	45.0	36.0	55.0
MCSHC11775ZR30LR29	300±15%	217 min	0.29±10%	35.0	28.0	55.0
MCSHC11775ZR40LR29	400±15%	288 min	0.29±10%	25.0	20.0	55.0
MCSHC11775ZR51LR29	510±15%	364 min	0.29±10%	18.0	14.5	55.0

Note:

1.1 Inductance is measured at 100 KHz and 1.0 Vrms at 25℃

1.2 The Inductance is measured at I-sat[3.1] and 100 KHz and 0.1 Vrms at 25℃

2.The nominal DCR is measured at 20℃ ambient temperature.

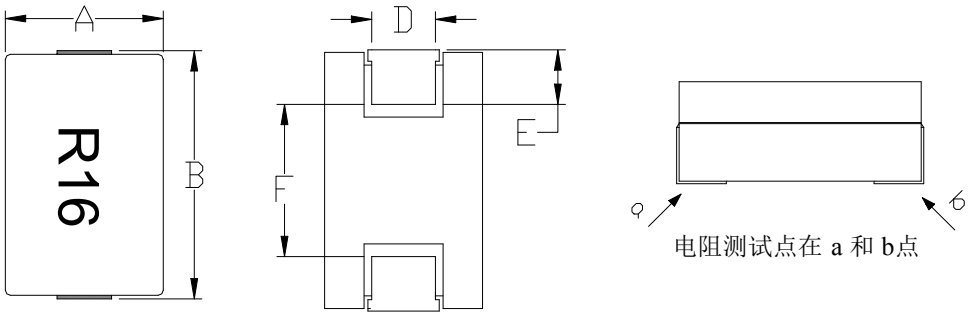
3.1 The I-sat that will cause initial inductance value approximately 20% rolloff at 25℃

3.2 The I-sat that will cause initial inductance value approximately 20% rolloff at 100℃

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

Mechanical & Dimensions

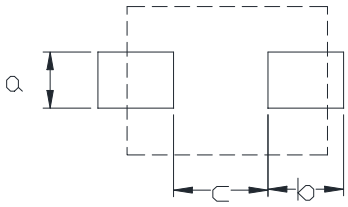
(Unit: mm)



Code	Dimensions
A	6.8±0.2
B	10.5±0.3
C	5.0 Max
D	2.54±0.2
E	2.3±0.3
F	5.94±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	2.8 Ref
b	2.6 Ref
c	5.60 Ref

Electrical Characteristics

Part Number	Inductance[1] (nH)	DCR[2] (mΩ)	I-sat[3.1] (Amps)Max	I-sat[3.2] (Amps)Max	I-rms[4] (Amps)Typs	
MCSHC10705R16LHR23	160±15%	0.23±10%	60,≧70nH	60,≧70nH	40.0	

Note:

1.Inductance is measured at 100 KHz and 1.0 Vrms at 25℃

2.The nominal DCR is measured at 20℃ ambient temperature.

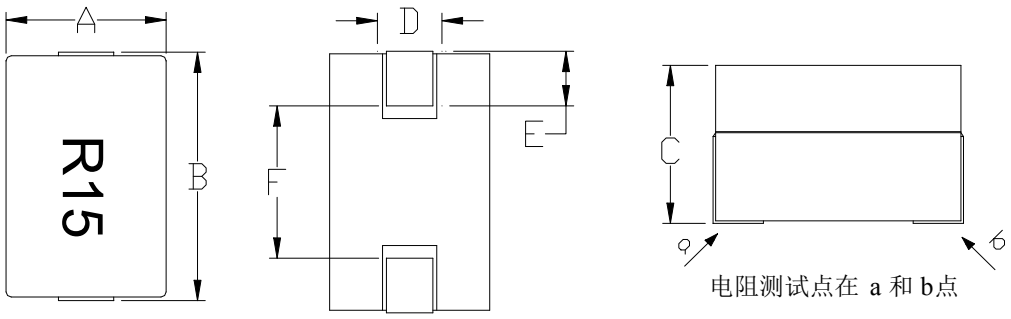
3.1The I-sat that will cause rolloff nominal inductance value at 25℃

3.2The I-sat that will cause rolloff nominal inductance value at 100℃

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

Mechanical & Dimensions

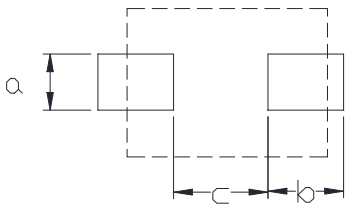
(Unit: mm)



Code	Dimensions
A	7.0 Max
B	10.5±0.3
C	2.9 Max
D	2.3±0.2
E	3.1±0.3
F	4.3±0.5

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	2.6 Ref
b	3.4 Ref
c	4.0 Ref

Electrical Characteristics

Part Number	Inductance[1] (nH)	DCR[2] (mΩ)	I-sat[3.1] (Amps)Max	I-sat[3.2] (Amps)Max	I-rms[4] (Amps)Typs	
MCSHC10703R15LHR40	150±15%	0.4±10%	60,≧80nH	60,≧80nH	40.0	

Note:

1.Inductance is measured at 100 KHz and 1.0 Vrms at 25℃

2.The nominal DCR is measured at 20℃ ambient temperature.

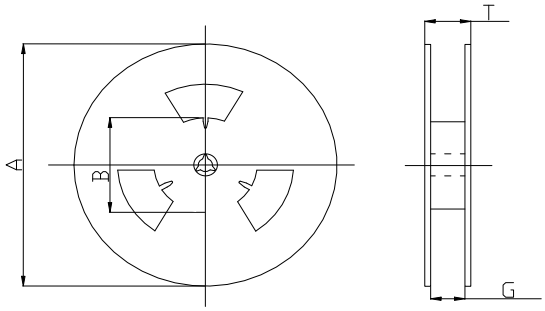
3.1The I-sat that will cause rolloff nominal inductance value at 25℃

3.2The I-sat that will cause rolloff nominal inductance value at 125℃

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)	G(mm)	T(mm)	Chip/Reel
MCSHC444	13" x 12mm	330	100	12.5	16.7	2000
MCSHC75	13" x 16mm	330	100	16.5	20.7	1000
MCSHC09608	13" x 24mm	330	100	24.5	28.7	700
MCSHC09755	13" x 24mm	330	100	24.5	28.7	800
MCSHC10705(R23)	13" x 24mm	330	100	24.5	28.7	1000
MCSHC10705(R29)	13" x 24mm	330	100	24.5	28.7	1000
MCSHC10807(R29)	13" x 24mm	330	100	24.5	28.7	500
MCSHC10875(R29)	13" x 24mm	330	100	24.5	28.7	600
MCSHC10808(R18)	13" x 24mm	330	100	24.5	28.7	500
MCSHC11775(R29)	13" x 24mm	330	100	24.5	28.7	500
MCSHC10705H(R23)	13" x 24mm	330	100	24.5	28.7	800
MCSHC10703H(R40)	13" x 24mm	330	100	24.5	28.7	1200

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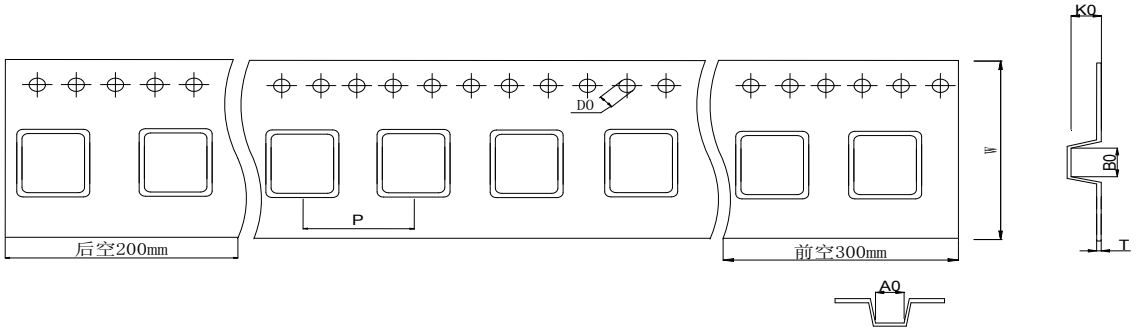
Packaging

Tape Dimension:



P/N	Ao	Bo	Ko	P	W					
MCSHC444	4.2±0.1	4.4±0.1	4.2±0.1	8.0±0.1	12.0±0.3					
MCSHC75	7.3±0.1	7.3±0.1	5.2±0.1	12.0±0.1	16.0±0.3					
MCSHC09608	6.7±0.1	10.3±0.1	8.2±0.1	12.0±0.1	24±0.3					
MCSHC09755	7.2±0.1	9.8±0.1	5.7±0.1	12.0±0.1	24±0.3					
MCSHC10705(R23)	7.2±0.1	9.4±0.1	5.3±0.1	12.0±0.1	24±0.3					
MCSHC10705(R29)	7.5±0.1	10.4±0.1	5.1±0.1	12.0±0.1	24±0.3					
MCSHC10807(R29)	8.2±0.1	10.7±0.1	7.6±0.1	16.0±0.1	24±0.3					
MCSHC10875(R29)	8.2±0.1	10.6±0.1	7.6±0.1	12.0±0.1	24±0.3					
MCSHC10808(R18)	8.4±0.1	10.5±0.1	8.2±0.1	16.0±0.1	24±0.3					
MCSHC11775(R29)	7.4±0.1	11.4±0.1	7.5±0.1	16.0±0.1	24±0.3					
MCSHC10705H(R23)	7.2±0.1	11±0.1	5.2±0.1	12.0±0.1	24±0.3					
MCSHC10703H(R40)	7.2±0.1	10.9±0.1	3.0±0.1	16.0±0.1	24±0.3					

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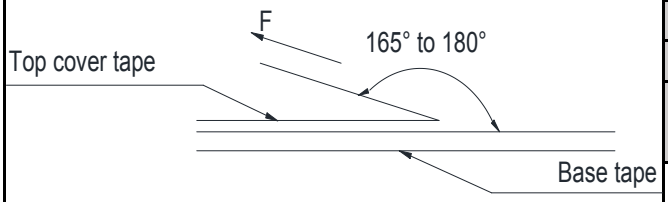
Tearing Off Force:



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. Recommended products should be used within 6 months form the time of delivery.
2. 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.

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Recommended Soldering Conditions

Figure 1. Re-flow Soldering

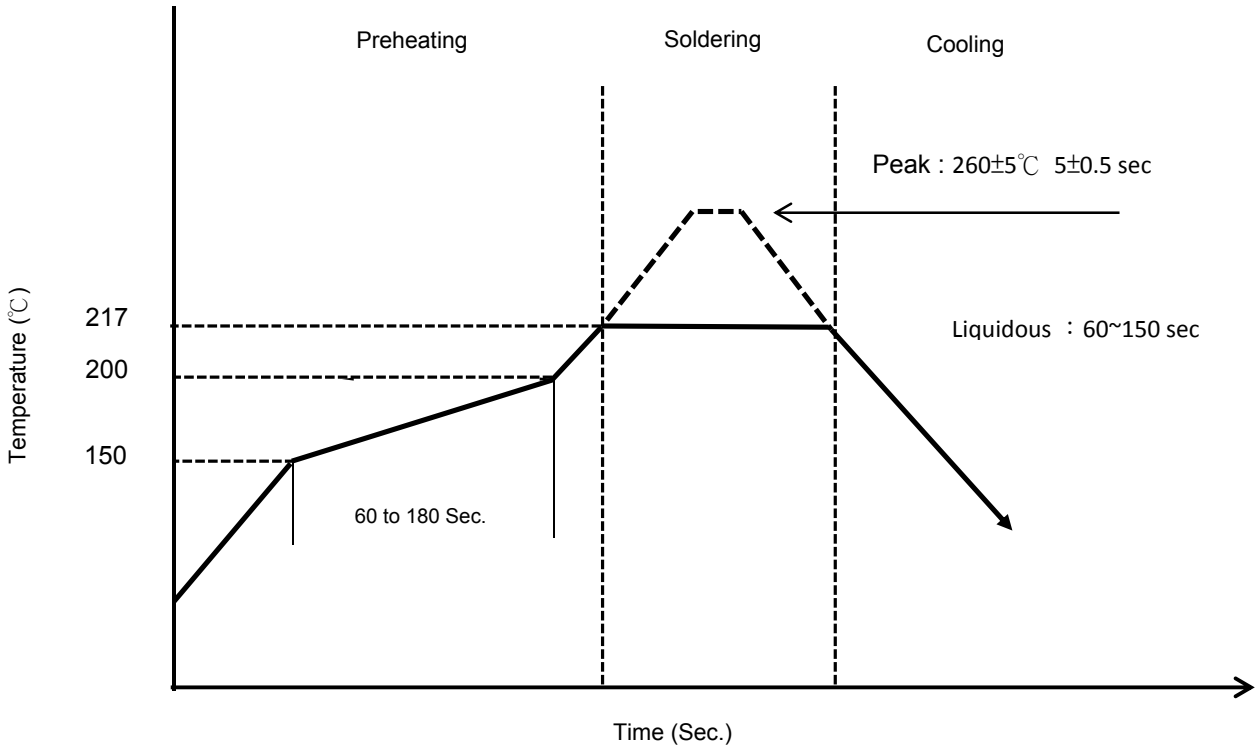
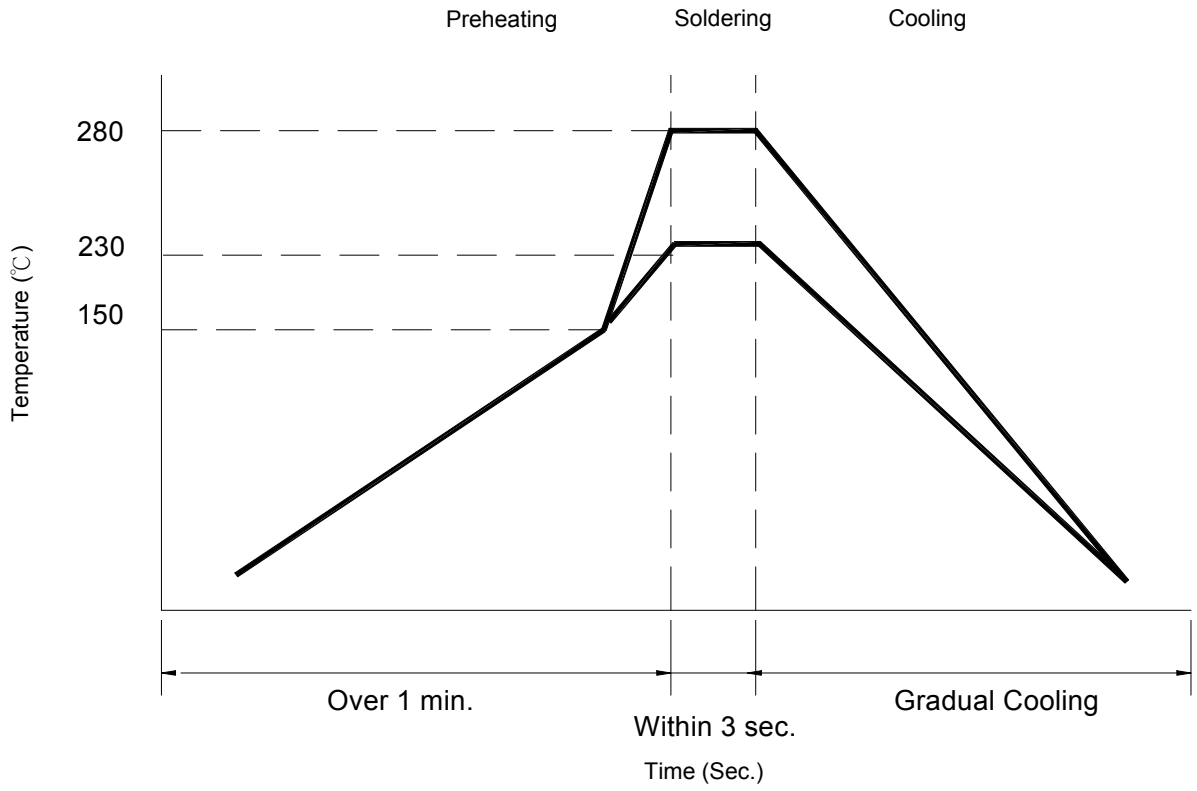
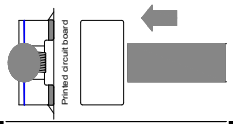


Figure 2. Hand Soldering



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±5°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±5°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℃ and 90 to 95% humidity , and 2 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. Step / Temperature (℃) / Times (min.) 1 / -40±5℃ / 30 2 / Room Temperature / Within 3 3 / 125±5℃ / 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	Solder a chip to test substrate, and then laterally apply a load 10N in the arrow direction, Duration :5s 
Drop Test	Inductance within ±20% of initial value. The appearance shall not break.	Drop 3 times on a concrete floor from a height of 75cm by inimum packing