



SPECIFICATION FOR APPROVAL

CUSTOMER : STD

CUSTOMER PART NO :

PRODUCTS : SMD POWER INDUCTOR

PART NO: MCSG Series

DATE: 2018.08.17

SALES: 产品部

E-MAIL: Eily@szmorechance.com

APPROVAL SIGNATURE 客户承认签章	

APPROVAL	CHECK BY	DRAWN BY
Honey	Baron	Eily

苏州茂昌电子有限公司

Suzhou MoreChance Electronics Co.,Ltd

公司地址:苏州市吴中区宝带东路399号中润中心1419-1420(12B)

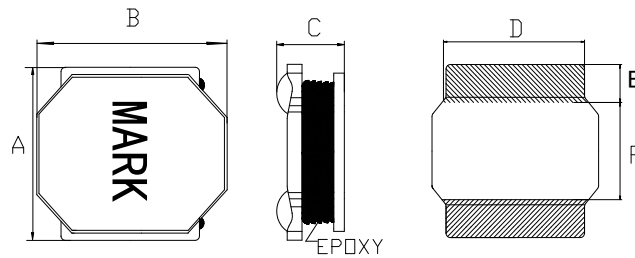
Add:Room1419-1420(12B) zhongRun center Building ,NO 399 Baodai East Rd , Wuzhoug District,Suzhou

TEL:0512-68562977 FAX:0512-68563299

公司地址:深圳市宝安区沙井街道办中心路108号锐钧商务大厦19楼19J

TEL:0755-27389457 FAX:0755-23217683

SMD Power Inductors



Featur

1. High current and inductance capacity.
2. Specially designed for surface mounting equipment, good for high density application.
3. Low profile very effective in space-conscious applications
4. Low resistance and high-energy storage

Application

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

Product Identification

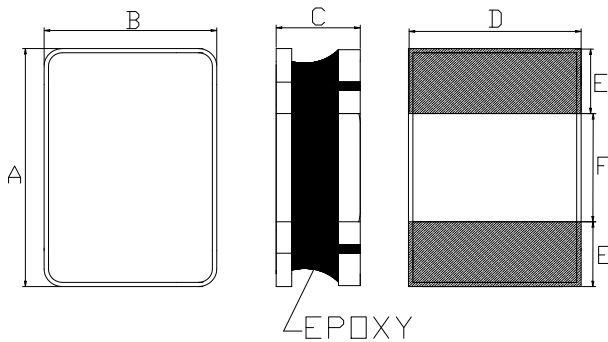
MC SG 25210Z R47 M
A B C D E

- | | |
|-----------------------|--|
| A Company code | D Inductance. (for example R47= 0.47uH) |
| B Series Name. | E Inductance Tolerance. (for example |
| C Dimension. | K=±10% ,M=±20% ,N=±30%) |

Shielded Construction--MCSG25210Z Series

1. Mechanical & Dimensions

(UNIT: mm)



A	2.5+0.3/-0.1
B	2.0+0.35/-0.05
C	1.05MAX
D	2.0+0.35/-0.05
E	0.825 ± 0.3
F	0.9 ± 0.3

2. Electrical characteristics

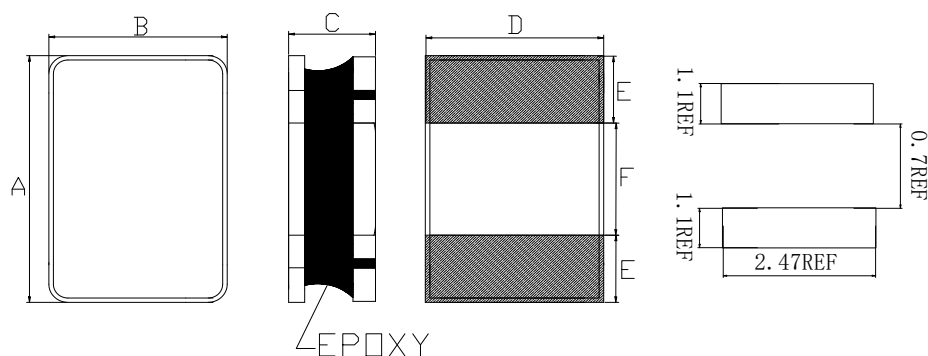
Part Number	Inductance L0(uH)	DCR (mΩ)	I-sat (Amps)	MARKING
	1MHZ/0.1V	MAX	≥65%L0	
MCSG25210ZR47N	0.47 ± 30%	36	2.57	
MCSG25210ZR68N	0.68 ± 20%	49	2.45	
MCSG25210Z1R0M	1.0 ± 20%	66	2.05	
MCSG25210Z1R5M	1.5 ± 20%	108	1.70	
MCSG25210Z2R2M	2.2 ± 20%	145	1.55	
MCSG25210Z3R3M	3.3 ± 20%	204	1.10	
MCSG25210Z4R7M	4.7 ± 20%	300	0.95	
MCSG25210Z6R8M	6.8 ± 20%	444	0.80	
MCSG25210Z100M	10 ± 20%	564	0.65	
MCSG25210Z150M	15 ± 20%	900	0.45	
MCSG25210Z220M	22 ± 20%	1344	0.40	

3. Operating -40°C ~ +125°C (Including self-temperature rise)

Shielded Construction--MCSG25212Z Series

1. Mechanical & Dimensions

(UNIT: mm)



A	2.5+0.3/-0.1
B	2.0+0.35/-0.05
C	1.25MAX
D	2.0+0.35/-0.05
E	0.8REF
F	1.0REF

2. Electrical characteristics

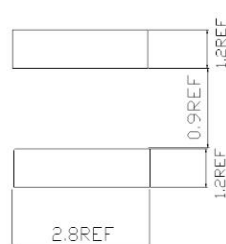
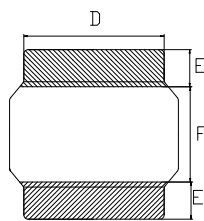
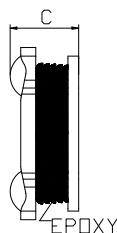
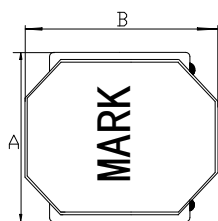
Part Number	Inductance L0(uH)	DCR (mΩ)	I-sat (Amps)	MARKING
	1MHZ/0.1V	MAX	≥65%L0	
MCSG25212ZR24N	0.24 ± 30%	34	4.05	
MCSG25212ZR47N	0.47 ± 20%	44	3.60	
MCSG25212ZR68N	0.68 ± 20%	57	2.70	
MCSG25212Z1R0N	1.0 ± 20%	66	2.45	
MCSG25212Z1R5M	1.5 ± 20%	86	2.05	
MCSG25212Z2R2M	2.2 ± 20%	120	1.90	
MCSG25212Z3R3M	3.3 ± 20%	160	1.50	
MCSG25212Z4R7M	4.7 ± 20%	228.8	1.35	
MCSG25212Z6R8M	6.8 ± 20%	325	1.00	
MCSG25212Z100M	10 ± 20%	492	0.75	
MCSG25212Z150M	15 ± 20%	648	0.56	
MCSG25212Z220M	22 ± 20%	1020	0.50	

3. Operating -40°C ~ +125°C (Including self-temperature rise)

Shielded Construction--MCSG31Z Series

1. Mechanical & Dimensions

(UNIT: mm)



A	3.0 ± 0.2
B	3.0 ± 0.2
C	1.2 MAX
D	2.5 ± 0.3
E	0.9 ± 0.3
F	1.2 ± 0.3

2. Electrical characteristics

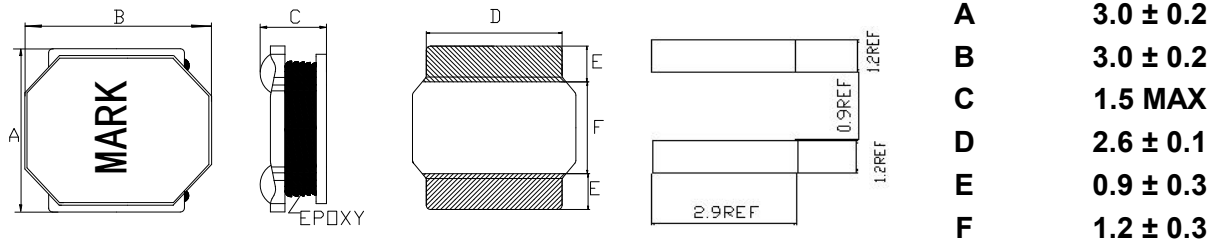
Part Number	Inductance L0(uH)	DCR (mΩ)	I-sat (Amps)	MARKING
	100KHZ/0.25V	MAX	≥65%L0	
MCSG31Z1R0N	1.0 ± 30%	85	1.40	1R0
MCSG31Z1R5N	1.5 ± 30%	104	1.27	1R5
MCSG31Z2R2N	2.2 ± 30%	143	1.15	2R2
MCSG31Z3R3N	3.3 ± 30%	189	0.97	3R3
MCSG31Z4R7M	4.7 ± 20%	293	0.75	4R7
MCSG31Z6R8M	6.8 ± 20%	397	0.55	6R8
MCSG31Z100M	10 ± 20%	520	0.55	100
MCSG31Z150M	15 ± 20%	850	0.42	150
MCSG31Z220M	22 ± 20%	1300	0.35	220
MCSG31Z330M	33 ± 20%	2020	0.29	330
MCSG31Z470M	47 ± 20%	2535	0.22	470

3. Operating -40°C ~ +125°C (Including self-temperature rise)

Shielded Construction--MCSG315Z Series

1. Mechanical & Dimensions

(UNIT: mm)



2. Electrical characteristics

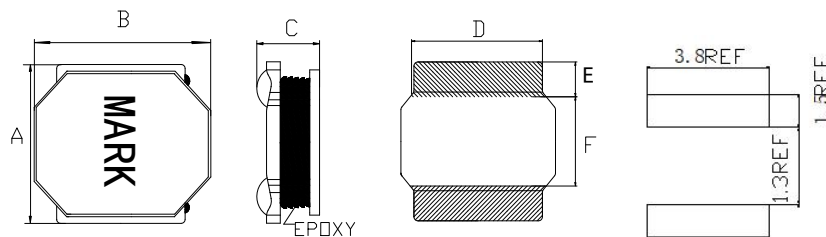
Part Number	Inductance L0(uH)	DCR (mΩ)	I-sat (Amps)	MARKING
	100KHZ/0.25V	MAX	≥65%L0	
MCSG315Z1R0N	1.0 ± 30%	48	2.32	1R0
MCSG315Z1R5N	1.5 ± 30%	50 ± 30%	2.10	1R5
MCSG315Z2R2M	2.2 ± 20%	60 ± 30%	1.60	2R2
MCSG315Z3R3M	3.3 ± 20%	104	1.30	3R3
MCSG315Z4R7M	4.7 ± 20%	160	1.10	4R7
MCSG315Z6R8M	6.8 ± 20%	180 ± 30%	0.85	6R8
MCSG315Z100M	10 ± 20%	260 ± 30%	0.70	100
MCSG315Z150M	15 ± 20%	337 ± 30%	0.60	150
MCSG315Z220M	22 ± 20%	460 ± 30%	0.52	220
MCSG315Z330M	33 ± 20%	1066	0.44	330
MCSG315Z470M	47 ± 20%	1600	0.35	470

3. Operating -40°C ~ +125°C (Including self-temperature rise)

Shielded Construction--MCSG418Z Series

1.Mechanical & Dimensions

(UNIT: mm)



A	4.0 ± 0.2
B	4.0 ± 0.2
C	1.85 MAX
D	3.5 ± 0.2
E	1.2 ± 0.3
F	1.6 ± 0.3

2.Electrical characteristics

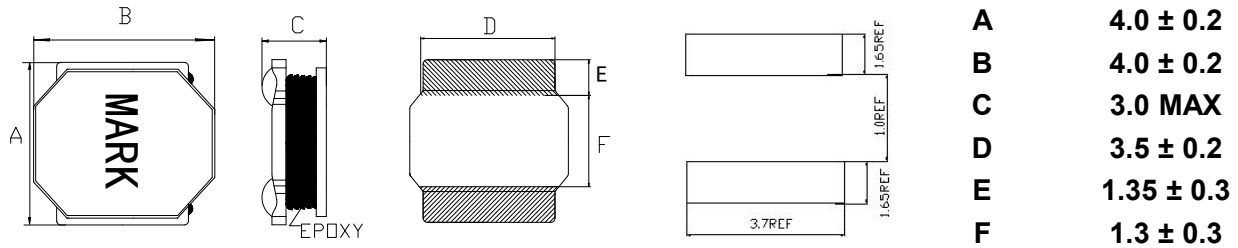
Part Number	Inductance L0(uH)	DCR (mΩ)	I-sat (Amps)	MARKING
	100KHZ/0.25V	MAX	≥65%L0	
MCSG418ZR56N	0.56±30%	24	5.50	R56
MCSG418Z1R0M	1.0±20%	25±30%	4.50	1R0
MCSG418Z1R2N	1.2±30%	48	3.50	1R2
MCSG418Z2R2M	2.2±20%	45±30%	2.70	2R2
MCSG418Z3R3M	3.3±20%	84	2.15	3R3
MCSG418Z4R7M	4.7±20%	90±30%	2.00	4R7
MCSG418Z5R6M	5.6±20%	100±30%	1.65	5R6
MCSG418Z6R8M	6.8±20%	110±30%	1.60	6R8
MCSG418Z100M	10±20%	180±30%	1.30	100
MCSG418Z150M	15±20%	250±30%	0.95	150
MCSG418Z220M	22±20%	360±30%	0.80	220
MCSG418Z330M	33±20%	530±30%	0.65	330
MCSG418Z470M	47±20%	650±30%	0.57	470
MCSG418Z680M	68±20%	1000±30%	0.46	680
MCSG418Z101M	100±20%	1500±30%	0.41	101
MCSG418Z151M	150±20%	2400±30%	0.32	151
MCSG418Z221M	220±20%	4800	0.28	221

3.Operating -40°C ~ +125°C (Including self-temperature rise)

Shielded Construction--MCSG43Z Series

1.Mechanical & Dimensions

(UNIT: mm)



2.Electrical characteristics

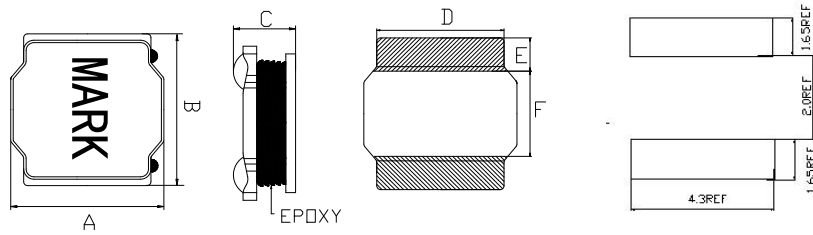
Part Number	Inductance L0(uH)	DCR (mΩ)	I-sat (Amps)	MARKING
	100KHZ/0.25V	MAX	≥65%L0	
MCSG43Z1R0N	1.0±30%	22±30%	5.00	1R0
MCSG43Z1R5M	1.5±20%	32±30%	4.80	1R5
MCSG43Z2R2M	2.2±20%	35±30%	4.50	2R2
MCSG43Z3R3M	3.3±20%	50±30%	3.00	3R3
MCSG43Z4R7M	4.7±20%	60±30%	2.90	4R7
MCSG43Z6R8M	6.8±20%	100±30%	2.20	6R8
MCSG43Z100M	10±20%	120±30%	2.00	100
MCSG43Z150M	15±20%	220±30%	1.70	150
MCSG43Z220M	22±20%	225±30%	1.30	220
MCSG43Z330M	33±20%	360±30%	1.10	330
MCSG43Z470M	47±20%	460±30%	0.98	470
MCSG43Z560M	56±20%	534±30%	0.88	560
MCSG43Z680M	68±20%	836±30%	0.77	680
MCSG43Z101M	100±20%	1110±30%	0.70	101
MCSG43Z151M	150±20%	1400±30%	0.50	151
MCSG43Z221M	220±20%	3500±30%	0.33	221

3.Operating -40°C ~ +125°C (Including self-temperature rise)

Shielded Construction--MCSG52Z Series

1. Mechanical & Dimensions

(UNIT: mm)



A	5.0 ± 0.2
B	5.0 ± 0.2
C	2.0 MAX
D	4.0 ± 0.2
E	1.35 ± 0.3
F	2.3 ± 0.3

2. Electrical characteristics

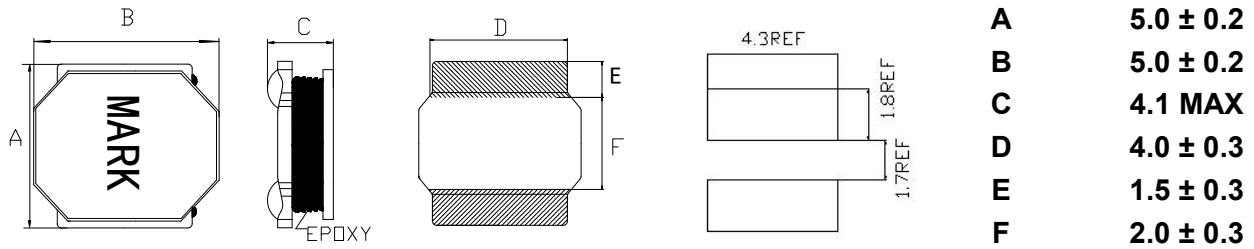
Part Number	Inductance L0(uH)	DCR (mΩ)	I-sat (Amps)	MARKING
	100KHZ/0.25V	MAX	≥65%L0	
MCSG52Z1R0N	1.0±30%	22±30%	4.33	1R0
MCSG52Z1R5N	1.5±30%	26±30%	4.10	1R5
MCSG52Z2R2N	2.2±30%	38±30%	3.60	2R2
MCSG52Z3R3M	3.3±20%	45±30%	3.00	3R3
MCSG52Z4R7M	4.7±20%	60±30%	2.50	4R7
MCSG52Z6R8M	6.8±20%	83±30%	2.05	6R8
MCSG52Z100M	10±20%	120±30%	1.44	100
MCSG52Z150M	15±20%	180±30%	1.40	150
MCSG52Z220M	22±20%	226±30%	1.15	220
MCSG52Z270M	27±20%	300±30%	1.05	270
MCSG52Z330M	33±20%	356±30%	1.00	330
MCSG52Z470M	47±20%	505±30%	0.82	470
MCSG52Z680M	68±20%	640±30%	0.59	680
MCSG52Z101M	100±20%	1021±30%	0.55	101
MCSG52Z221M	220±20%	2200±30%	0.28	221
MCSG52Z102M	1000±20%	14Ω±30%	0.10	102

3. Operating -40°C ~ +125°C (Including self-temperature rise)

Shielded Construction--MCSG54Z Series

1. Mechanical & Dimensions

(UNIT: mm)



2. Electrical characteristics

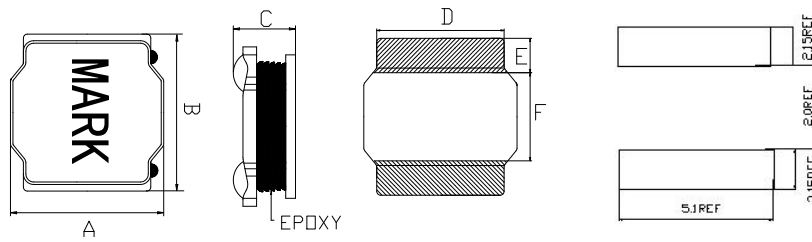
Part Number	Inductance L0(uH)	DCR (mΩ)	I-sat (Amps)	MARKING
	100KHZ/0.25V	MAX	≥65%L0	
MCSG54Z1R0N	1.0±30%	18	7.35	1R0
MCSG54Z1R5N	1.5±30%	28	5.00	1R5
MCSG54Z2R2M	2.2±20%	20±30%	4.90	2R2
MCSG54Z3R3M	3.3±20%	26±30%	3.95	3R3
MCSG54Z4R7M	4.7±20%	32±30%	3.50	4R7
MCSG54Z6R8M	6.8±20%	45±30%	2.90	6R8
MCSG54Z100M	10±20%	60±30%	2.30	100
MCSG54Z150M	15±20%	80±30%	2.00	150
MCSG54Z220M	22±20%	130±30%	1.60	220
MCSG54Z270M	27±20%	160±30%	1.40	270
MCSG54Z330M	33±20%	180±30%	1.30	330
MCSG54Z470M	47±20%	310±30%	1.02	470
MCSG54Z560M	56±20%	340±30%	1.00	560
MCSG54Z680M	68±20%	500±30%	0.85	680
MCSG54Z101M	100±20%	560±30%	0.66	101
MCSG54Z221M	220±20%	1.8Ω±30%	0.40	221

3. Operating -40°C ~ +125°C (Including self-temperature rise)

Shielded Construction--MCSG628Z Series

1. Mechanical & Dimensions

(UNIT: mm)



A	6.0 ± 0.2
B	6.0 ± 0.2
C	3.0 MAX
D	4.9 ± 0.3
E	1.85 ± 0.3
F	2.3 ± 0.3

2. Electrical characteristics

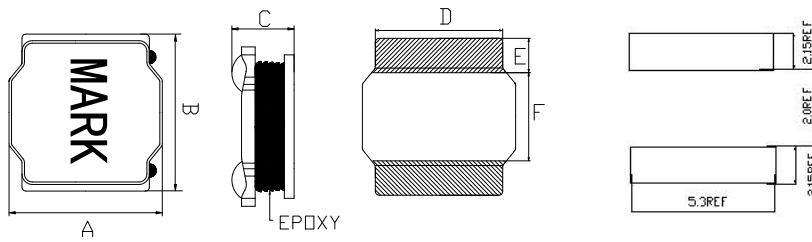
Part Number	Inductance L0(uH)	DCR (mΩ)	I-sat (Amps)	MARKING
	100KHZ/0.25V	MAX	$\geq 65\%L0$	
MCSG628Z1R0N	1.0±30%	20	5.75	1R0
MCSG628Z1R5N	1.5±30%	25	5.25	1R5
MCSG628Z2R2M	2.2±20%	28	5.10	2R2
MCSG628Z3R3M	3.3±20%	40	3.80	3R3
MCSG628Z4R7M	4.7±20%	45	3.70	4R7
MCSG628Z5R6M	5.6±20%	60	3.15	5R6
MCSG628Z6R8M	6.8±20%	65	3.00	6R8
MCSG628Z100M	10±20%	85	2.50	100
MCSG628Z120M	12±20%	96	2.00	120
MCSG628Z150M	15±20%	125	2.00	150
MCSG628Z220M	22±20%	185	1.45	220
MCSG628Z270M	27±20%	210	1.50	270
MCSG628Z330M	33±20%	260	1.20	330
MCSG628Z470M	47±20%	410	1.15	470
MCSG628Z560M	56±20%	420	0.85	560
MCSG628Z680M	68±20%	546	0.85	680
MCSG628Z820M	82±20%	680	0.80	820
MCSG628Z101M	100±20%	750	0.75	101
MCSG628Z151M	150±20%	860	0.50	151
MCSG628Z331M	330±20%	2400	0.27	331
MCSG628Z471M	470±20%	3500	0.23	471
MCSG628Z102M	1000±20%	7800	0.20	102

3. Operating -40°C ~ +125°C (Including self-temperature rise)

Shielded Construction--MCSG645Z Series

1. Mechanical & Dimensions

(UNIT: mm)



A	6.0 ± 0.2
B	6.0 ± 0.2
C	4.5 MAX
D	4.9 ± 0.2
E	1.65 ± 0.3
F	2.7 ± 0.3

2. Electrical characteristics

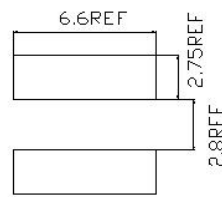
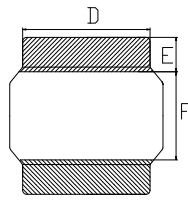
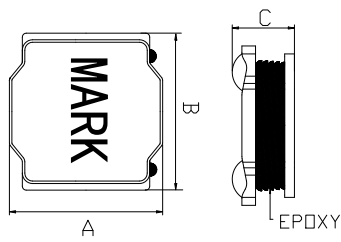
Part Number	Inductance L0(uH) 100KHZ/0.25V	DCR (mΩ) MAX	I-sat (A) ≥65%L0	MARKING
MCSG645Z1R0M	1.0±20%	11±30%	9.85	1R0
MCSG645Z1R5M	1.5±20%	12±30%	9.00	1R5
MCSG645Z1R8M	1.8±20%	18±30%	7.00	1R8
MCSG645Z2R2M	2.2±20%	18±30%	6.90	2R2
MCSG645Z3R3M	3.3±20%	21±30%	5.90	3R3
MCSG645Z4R7M	4.7±20%	26±30%	5.00	4R7
MCSG645Z5R6M	5.6±20%	28±30%	4.27	5R6
MCSG645Z6R8M	6.8±20%	31±30%	3.90	6R8
MCSG645Z8R2M	8.2±20%	46±30%	3.30	8R2
MCSG645Z100M	10±20%	46±30%	3.30	100
MCSG645Z120M	12±20%	60±30%	2.80	120
MCSG645Z150M	15±20%	65±30%	2.58	150
MCSG645Z220M	22±20%	115±30%	2.08	220
MCSG645Z270M	27±20%	120±30%	1.90	270
MCSG645Z330M	33±20%	140±30%	1.65	330
MCSG645Z470M	47±20%	200±30%	1.44	470
MCSG645Z680M	68±20%	290±30%	1.40	680
MCSG645Z101M	100±20%	416±30%	0.98	101
MCSG645Z121M	120±20%	466±30%	0.88	121
MCSG645Z151M	150±20%	580±30%	0.80	151
MCSG645Z221M	220±20%	803±30%	0.72	221
MCSG645Z331M	330±20%	2000±30%	0.50	331
MCSG645Z102M	1000±20%	5200±30%	0.24	102

3. Operating -40°C ~ +125°C (Including self-temperature rise)

Shielded Construction--MCSG84Z Series

1. Mechanical & Dimensions

(UNIT: mm)



A	8.0 ± 0.3
B	8.0 ± 0.3
C	4.2 MAX
D	6.3 ± 0.2
E	2.45 ± 0.3
F	3.1 ± 0.3

2. Electrical characteristics

Part Number	Inductance L0(uH) 100KHZ/0.25V	DCR (mΩ) MAX	I-sat (Amps) ≥65%L0	MARKING
MCSG84Z1R0N	1.0±30%	7.0±30%	10.15	1R0
MCSG84Z1R5N	1.5±30%	10±30%	8.15	1R5
MCSG84Z2R2M	2.2±20%	12±30%	8.00	2R2
MCSG84Z3R3M	3.3±20%	17±30%	6.50	3R3
MCSG84Z4R7M	4.7±20%	19±30%	5.90	4R7
MCSG84Z6R8M	6.8±20%	24±30%	4.95	6R8
MCSG84Z100M	10±20%	40±30%	4.30	100
MCSG84Z150M	15±20%	61	2.95	150
MCSG84Z220M	22±20%	66±30%	2.50	220
MCSG84Z330M	33±20%	110±30%	2.07	330
MCSG84Z470M	47±20%	195	1.75	470
MCSG84Z680M	68±20%	196±30%	1.45	680
MCSG84Z101M	100±20%	290±30%	1.15	101
MCSG84Z221M	220±20%	600±30%	0.85	221
MCSG84Z331M	330±20%	890±30%	0.68	331
MCSG84Z471M	470±20%	1500±30%	0.55	471
MCSG84Z681M	680±20%	2040±30%	0.48	681

4. Operating -40°C ~ +125°C (Including self-temperature rise)

SPECIFICATION FOR APPROVAL

4. Reliability and Testing Conditions / Pin Type Power Inductors

Item	Specification	Conditions															
Operating temperature range	-25°C ~ +120°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.	<p>Unit: Second</p>															
Solder Heat Resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	<p>Unit: Second</p>															
Heat resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 96 hours in 85±5°C and 2 hour drying under normal condition.															
Cold resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 96 hours in -40±5°C 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. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Times (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40±5°C</td> <td>30</td> </tr> <tr> <td>2</td> <td>Room Temperature</td> <td>Within 3</td> </tr> <tr> <td>3</td> <td>85±5°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±5°C	30	2	Room Temperature	Within 3	3	85±5°C	30	4	Room Temperature	Within 3
Step	Temperature (°C)	Times (min.)															
1	-40±5°C	30															
2	Room Temperature	Within 3															
3	85±5°C	30															
4	Room Temperature	Within 3															
Humidity Resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 96 hours in 40±2°C and 90 to 95% humidity , and 2 hour drying under normal condition.															
Vibration Test	Inductance within ±5% 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															

Molding Power Inductors

5.Recommended Soldering Conditions

Figure 1. Re-flow Soldering

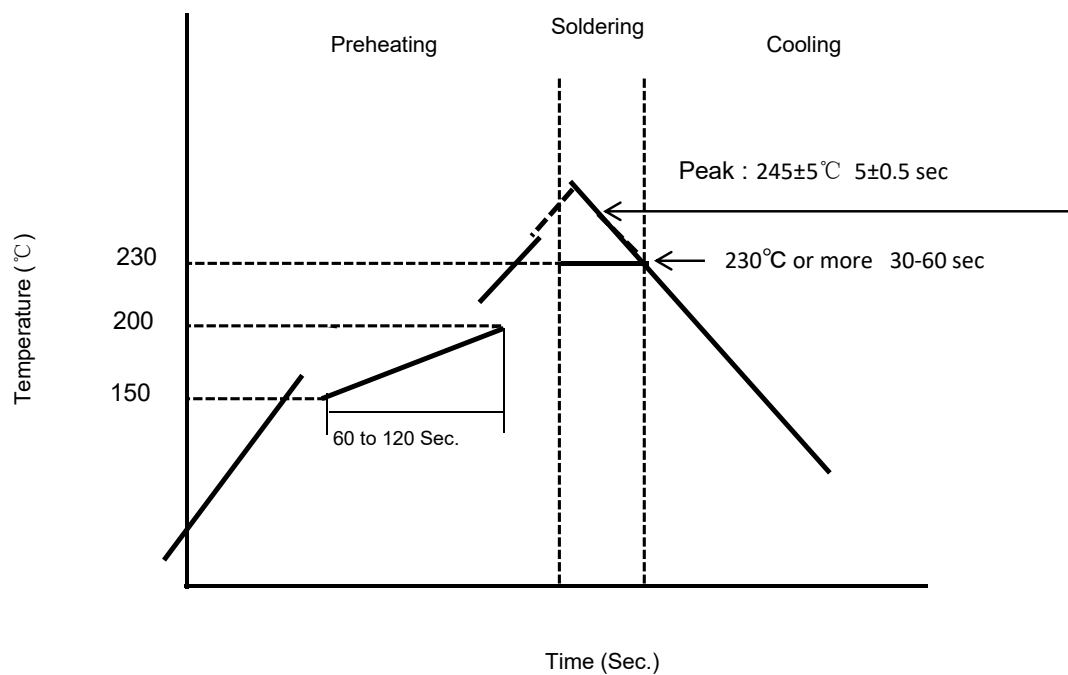
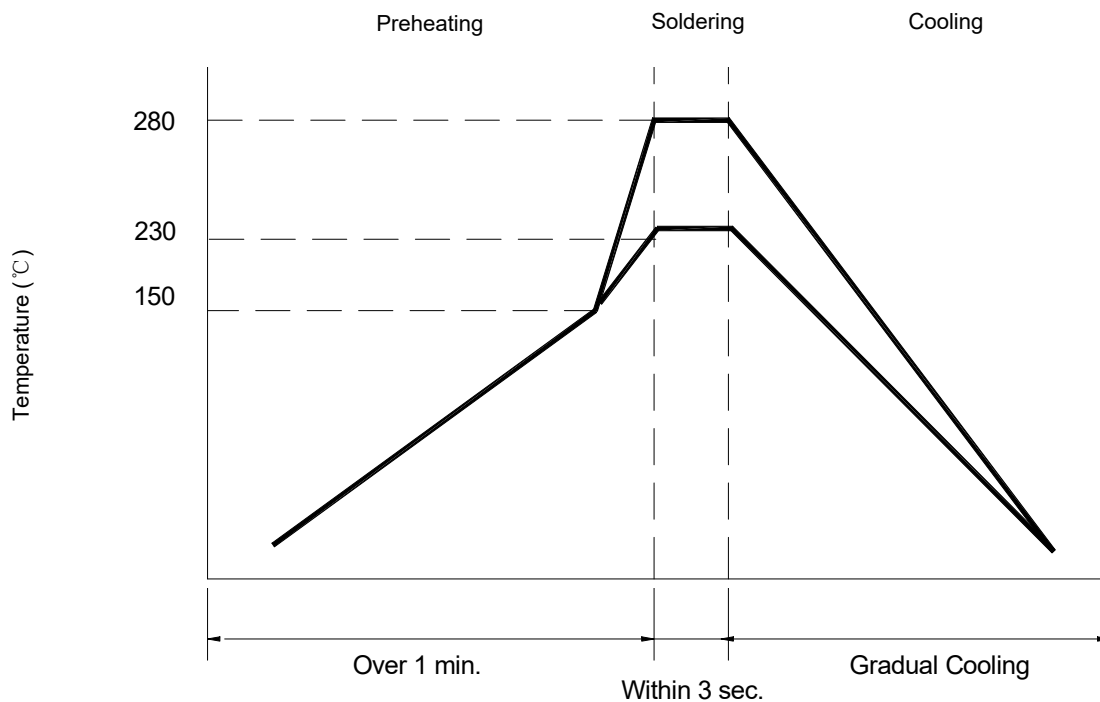
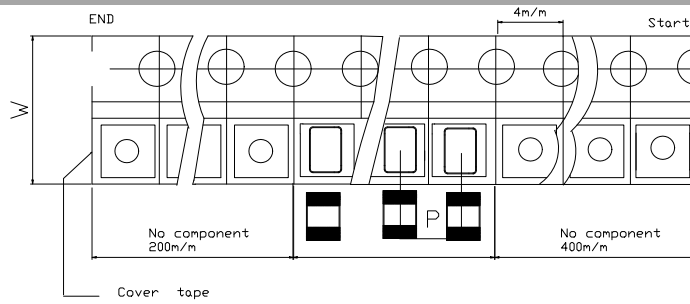


Figure 2. Hand Soldering

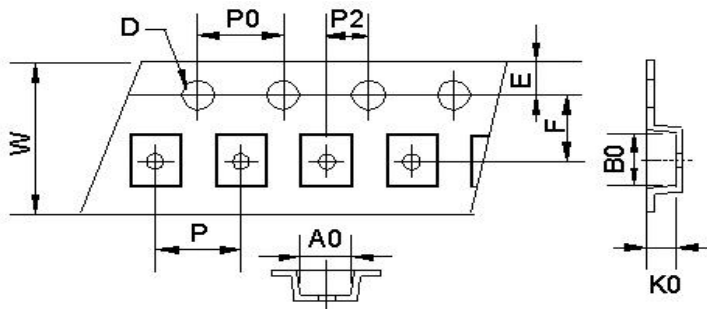


Molding Power Inductors

6. Packaging



MCSG25210Z、MCSG25212Z包装



TYPE	Ao(mm)	Bo(mm)	Ko(mm)	D(mm)	E(mm)	F(mm)	W(mm)	P(mm)	P0(mm)	P2(mm)
MCSG31Z Series	3.2	3.2	1.4	1.55	1.75	3.5	8	4.0	4.0	2.0
MCSG315Z Series	3.15	3.15	1.6	1.55	1.75	3.5	8.0	4.0	4.0	2.0
MCSG418Z Series	4.25	4.25	2.1	1.55	1.75	5.5	12	8.0	4.0	2.0
MCSG43Z Series	4.3	4.3	3.1	1.55	1.75	5.5	12.0	8.0	4.0	2.0
MCSG52Z Series	5.3	5.3	2.2	1.55	1.75	5.5	12.0	8.0	4.0	2.0
MCSG54Z Series	5.3	5.3	4.4	1.55	1.75	5.5	12.0	8.0	4.0	2.0
MSG628Z Series	6.3	6.3	3	1.55	1.75	7.5	16.0	8.0	4.0	2.0
MCSG645Z Series	6.5	6.5	4.7	1.55	1.75	7.5	16.0	12.0	4.0	2.0
MCSG84Z Series	8.5	8.5	4.3	1.55	1.75	7.5	16.0	12.0	4.0	2.0

MCSG25210Z	2000pcs/Reel	MCSG52Z	2500pcs/Reel
MCSG25212Z	2000pcs/Reel	MCSG54Z	1500pcs/Reel
MCSG31Z	2000pcs/Reel	MSG628Z	2000pcs/Reel
MCSG315Z	2000pcs/Reel	MCSG645Z	1500pcs/Reel
MCSG418Z	3000pcs/Reel	MCSG84Z	1000pcs/Reel
MCSG43Z	2000pcs/Reel		

※Storage Conditions

1. Temperature and humidity conditions: -40°C ~ +85°C and 70% RH.
2. Recommended products should be used within 6 months from 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.