



Unshielded Power Inductor–SM Series



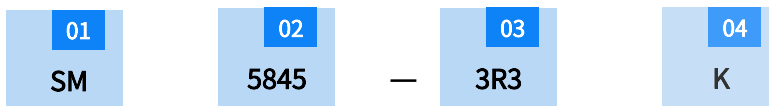
FEATURES

- ROHS, Halogen free and REACH Compliance.
- Unshielded power inductor.
- High current rating, Large terminal surface for good PCB bonding.
- Various package size and wide inductance range.

APPLICATIONS

Portable computers, LED televisions, TV,DC/DC converter and power supply for VTRs.

PRODUCT IDENTIFICATION



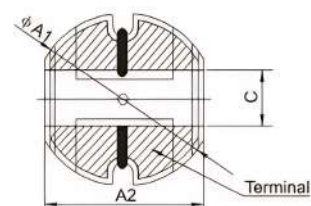
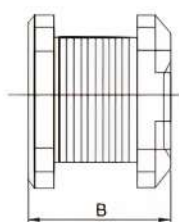
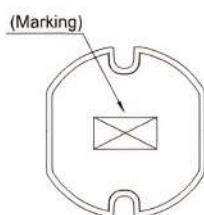
01 Type	
SM	Unshielded Power Inductor

05 Tolerance	
J	±5%
K	±10%
M	±20%

02 External Dimensions (LxW)(mm)	
3511	3.5x 1.1
3516	3.5x 1.6
3521	3.5x 2.1
4520	4.5x 2.0
4532	4.5x 3.2
5830	5.8x 3.0
5845	5.8x 4.5
7835	7.8x 3.5
7850	7.8x 5.0
1040	10.0x 4.0
1054	10.0x 5.4
1070	10.0x 7.0
1082	10.0x 8.2

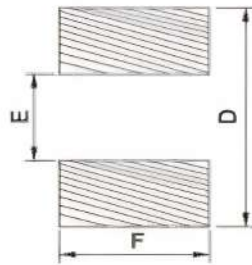
04 Nominal Inductance	
Example	Nominal value
3R3	3.3uH
330	33uH
331	330uH
332	3300uH

SHAPE AND DIMENSIONS



Part Number	Dimensions(mm)			
	ΦA1	A2	B	C(REF)
SM3511	3.5±0.2	3.0±0.2	1.1±0.3	0.8
SM3516	3.5±0.2	3.0±0.2	1.6±0.3	0.8
SM3521	3.5±0.2	3.0±0.2	2.1±0.3	0.8
SM4520	4.5±0.2	4.0±0.2	2.0±0.3	1.2
SM4532	4.5±0.2	4.0±0.2	3.2±0.3	1.2
SM5830	5.8±0.2	5.2±0.2	3.0±0.3	1.5
SM5845	5.8±0.2	5.2±0.2	4.5±0.3	1.5
SM7835	7.8±0.2	7.0±0.2	3.5±0.3	2.1
SM7850	7.8±0.2	7.0±0.2	5.0±0.3	2.1
SM1040	10.0±0.2	9.0±0.2	4.0±0.3	2.5
SM1054	10.0±0.2	9.0±0.2	5.4±0.3	2.5
SM1070	10.0±0.2	9.0±0.2	7.0±0.3	2.5
SM1082	10.0±0.2	9.0±0.2	8.2±0.3	2.5

RECOMMENDED PC BOARD PATTERN



Part Number	Dimensions(mm)		
	D	E	F
SM3511	3.9±0.2	1.0±0.2	3.4±0.2
SM3516	3.9±0.2	1.0±0.2	3.4±0.2
SM3521	3.9±0.2	1.0±0.2	3.4±0.2
SM4520	4.9±0.2	1.0±0.2	4.4±0.2
SM4532	4.9±0.2	1.0±0.2	4.4±0.2
SM5830	6.2±0.2	1.2±0.2	5.4±0.2
SM5845	6.2±0.2	1.2±0.2	5.4±0.2
SM7835	8.2±0.2	1.8±0.2	7.2±0.2
SM7850	8.2±0.2	1.8±0.2	7.2±0.2
SM1040	10.4±0.2	2.3±0.2	9.2±0.2
SM1054	10.4±0.2	2.3±0.2	9.2±0.2
SM1070	10.4±0.2	2.3±0.2	9.2±0.2
SM1082	10.4±0.2	2.3±0.2	9.2±0.2



SPECIFICATIONS

● SM3511 TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
SM3511-1R0	1.0	K、M	100/0.25	0.08	1400
SM3511-1R5	1.5		100/0.25	0.11	1200
SM3511-2R2	2.2		100/0.25	0.14	1050
SM3511-3R3	3.3		100/0.25	0.20	1000
SM3511-4R7	4.7		100/0.25	0.25	850
SM3511-5R6	5.6		100/0.25	0.32	760
SM3511-6R8	6.8		100/0.25	0.334	720
SM3511-8R2	8.2		100/0.25	0.48	640
SM3511-100	10		100/0.25	0.56	580
SM3511-150	15		100/0.25	0.85	470
SM3511-220	22		100/0.25	0.98	340
SM3511-330	33		100/0.25	1.66	320
SM3511-470	47		100/0.25	2.0	240
SM3511-680	68		100/0.25	3.5	220

Note: When ordering, please specify tolerance code. Tolerance: K: $\pm 10\%$ 、M: $\pm 20\%$;

1. Operating temperature range -40 -125°C

2. Isat for Inductance drop 30% from its value without current

● SM3516 TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
SM3516-1R0	1.0	K、M	100/0.25	0.055	1800
SM3516-1R5	1.5		100/0.25	0.080	1450
SM3516-2R2	2.2		100/0.25	0.105	1150
SM3516-3R3	3.3		100/0.25	0.150	950
SM3516-4R7	4.7		100/0.25	0.22	750
SM3516-5R6	5.6		100/0.25	0.27	700
SM3516-6R8	6.8		100/0.25	0.30	650
SM3516-8R2	8.2		100/0.25	0.32	600



Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
SM3516-100	10	K、M	100/0.25	0.35	550
SM3516-150	15		100/0.25	0.45	450
SM3516-180	18		100/0.25	0.57	400
SM3516-220	22		100/0.25	0.73	350
SM3516-330	33		100/0.25	1.20	300
SM3516-470	47		100/0.25	2.0	250
SM3516-680	68		100/0.25	2.4	200

Note: When ordering, please specify tolerance code. Tolerance: K: ±10%, M: ±20%;
 1. Operating temperature range -40 -125°C
 2. Isat for Inductance drop 30% from its value without current

● **SM3521 TYPE**

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
SM3521-1R0	1.0	K、M	100/0.25	0.04	2250
SM3521-1R4	1.4		100/0.25	0.06	2000
SM3521-1R8	1.8		100/0.25	0.065	1800
SM3521-2R2	2.2		100/0.25	0.08	1700
SM3521-2R7	2.7		100/0.25	0.09	1500
SM3521-3R3	3.3		100/0.25	0.10	1450
SM3521-3R9	3.9		100/0.25	0.13	1200
SM3521-4R7	4.7		100/0.25	0.15	1150
SM3521-5R6	5.6		100/0.25	0.19	1050
SM3521-6R8	6.8		100/0.25	0.24	950
SM3521-8R2	8.2		100/0.25	0.28	900
SM3521-100	10		100/0.25	0.33	800
SM3521-120	12		100/0.25	0.36	700
SM3521-150	15		100/0.25	0.47	650
SM3521-180	18		100/0.25	0.53	600
SM3521-220	22		100/0.25	0.67	550
SM3521-270	27		100/0.25	0.91	500
SM3521-330	33		100/0.25	1.25	450



Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
SM3521-390	39	K、M	100/0.25	1.30	400
SM3521-470	47		100/0.25	1.80	350
SM3521-560	56		100/0.25	2.00	320
SM3521-680	68		100/0.25	2.30	300
SM3521-820	82		100/0.25	3.15	280
SM3521-101	100		100/0.25	3.50	260
SM3521-271	270		100/0.25	10.0	160
SM3521-331	330		100/0.25	12.5	140
SM3521-471	470		100/0.25	21.5	120

Note: When ordering, please specify tolerance code. Tolerance: K: ±10%, M: ±20%;
 1. Operating temperature range -40 -125°C
 2. Isat for Inductance drop 30% from its value without current

● **SM4520 TYPE**

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
SM4520-1R0	1.0	K、M	100/0.25	0.035	2700
SM4520-1R5	1.5		100/0.25	0.04	2500
SM4520-2R2	2.2		100/0.25	0.055	2000
SM4520-3R3	3.3		100/0.25	0.07	1750
SM4520-4R7	4.7		100/0.25	0.095	1500
SM4520-5R6	5.6		100/0.25	0.11	1400
SM4520-6R8	6.8		100/0.25	0.14	1200
SM4520-8R2	8.2		100/0.25	0.16	1100
SM4520-100	10		100/0.25	0.20	1000
SM4520-150	15		100/0.25	0.29	820
SM4520-180	18		100/0.25	0.34	800
SM4520-220	22		100/0.25	0.40	680
SM4520-330	33		100/0.25	0.60	550
SM4520-470	47		100/0.25	1.0	460
SM4520-680	68		100/0.25	1.3	390
SM4520-820	82		100/0.25	1.5	350



● SM4532 TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
SM4532-1R0	1.0	K、M	100/0.25	0.033	3800
SM4532-1R4	1.4		100/0.25	0.038	3300
SM4532-1R8	1.8		100/0.25	0.042	2910
SM4532-2R2	2.2		100/0.25	0.047	2600
SM4532-2R7	2.7		100/0.25	0.052	2430
SM4532-3R3	3.3		100/0.25	0.058	2150
SM4532-3R9	3.9		100/0.25	0.076	1980
SM4532-4R7	4.7		100/0.25	0.094	1700
SM4532-5R6	5.6		100/0.25	0.101	1600
SM4532-6R8	6.8		100/0.25	0.120	1450
SM4532-8R2	8.2		100/0.25	0.132	1260
SM4532-100	10		100/0.25	0.182	1150
SM4532-120	12		100/0.25	0.210	1050
SM4532-150	15		100/0.25	0.235	850
SM4532-180	18		100/0.25	0.338	840
SM4532-220	22		100/0.25	0.378	760
SM4532-270	27		100/0.25	0.522	710
SM4532-330	33		100/0.25	0.540	640
SM4532-390	39		100/0.25	0.750	590
SM4532-470	47		100/0.25	0.844	540
SM4532-330	68		100/0.25	0.930	370
SM4532-330	100		100/0.25	1.350	400
SM4532-330	220		100/0.25	2.600	300
SM4532-330	330		100/0.25	3.500	220
SM4532-330	470		100/0.25	4.200	180
SM4532-330	560		100/0.25	6.000	120
SM4532-330	680	100/0.25	7.000	100	
SM4532-330	1000	100/0.25	12.5	50	

Note: When ordering, please specify tolerance code. Tolerance: K: ±10%、M: ±20%;

1. Operating temperature range -40 -125°C

2. Isat for Inductance drop 30% from its value without current



● SM5845 TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
SM5845-1R0	1.0	K、M	100/0.25	0.018	5000
SM5845-1R8	1.8		100/0.25	0.025	4000
SM5845-2R7	2.7		100/0.25	0.028	3000
SM5845-3R3	3.3		100/0.25	0.030	2500
SM5845-3R9	3.9		100/0.25	0.032	2000
SM5845-4R7	4.7		100/0.25	0.035	1800
SM5845-5R6	5.6		100/0.25	0.040	1650
SM5845-6R8	6.8		100/0.25	0.045	1600
SM5845-8R2	8.2		100/0.25	0.055	1500
SM5845-100	10		100/0.25	0.10	1440
SM5845-120	12		100/0.25	0.12	1400
SM5845-150	15		100/0.25	0.14	1300
SM5845-180	18		100/0.25	0.15	1230
SM5845-220	22		100/0.25	0.18	1110
SM5845-270	27		100/0.25	0.20	970
SM5845-330	33		100/0.25	0.23	880
SM5845-390	39		100/0.25	0.32	800
SM5845-470	47		100/0.25	0.37	720
SM5845-560	56		100/0.25	0.42	680
SM5845-680	68		100/0.25	0.46	610
SM5845-820	82		100/0.25	0.60	580
SM5845-101	100		100/0.25	0.70	520
SM5845-121	120	100/0.25	0.93	480	
SM5845-151	150	100/0.25	1.10	400	
SM5845-181	180	100/0.25	1.38	380	
SM5845-221	220	100/0.25	1.57	350	

Note: When ordering, please specify tolerance code. Tolerance: K: ±10%、M: ±20%;

1. Operating temperature range -40 -125°C

2. Isat for Inductance drop 30% from its value without current



● SM7835 TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
SM7835-1R0	1.0	K、M	100/0.25	0.015	6500
SM7835-2R7	2.7		100/0.25	0.025	3800
SM7835-3R3	3.3		100/0.25	0.030	3500
SM7835-3R9	3.9		100/0.25	0.032	3000
SM7835-4R7	4.7		100/0.25	0.040	2800
SM7835-5R6	5.6		100/0.25	0.055	2600
SM7835-6R8	6.8		100/0.25	0.065	2400
SM7835-8R2	8.2		100/0.25	0.075	2000
SM7835-100	10		100/0.25	0.080	1900
SM7835-120	12		100/0.25	0.090	1700
SM7835-150	15		100/0.25	0.095	1500
SM7835-180	18		100/0.25	0.100	1400
SM7835-220	22		100/0.25	0.13	1200
SM7835-270	27		100/0.25	0.15	1100
SM7835-330	33		100/0.25	0.18	1000
SM7835-390	39		100/0.25	0.22	900
SM7835-470	47		100/0.25	0.25	850
SM7835-560	56		100/0.25	0.30	800
SM7835-680	68		100/0.25	0.33	700
SM7835-820	82		100/0.25	0.41	650
SM7835-101	100		100/0.25	0.48	600
SM7835-120	120		100/0.25	0.60	550
SM7835-151	150		100/0.25	0.75	500
SM7835-181	180		100/0.25	1.02	450
SM7835-221	220		100/0.25	1.2	400
SM7835-271	270		100/0.25	1.4	320
SM7835-331	330		100/0.25	1.7	280
SM7835-471	470		100/0.25	2.5	250
SM7835-561	560		100/0.25	3.0	240
SM7835-681	680		100/0.25	3.7	220
SM7835-821	820	100/0.25	4.3	200	



● SM7850 TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
SM7850-1R0	1.0	K、M	100/0.25	0.030	6800
SM7850-1R8	1.8		100/0.25	0.035	5260
SM7850-2R7	2.7		100/0.25	0.040	4020
SM7850-3R3	3.3		100/0.25	0.045	3600
SM7850-3R9	3.9		100/0.25	0.050	3260
SM7850-4R7	4.7		100/0.25	0.055	2970
SM7850-5R6	5.6		100/0.25	0.060	2740
SM7850-6R8	6.8		100/0.25	0.065	2530
SM7850-8R2	8.2		100/0.25	0.070	2360
SM7850-100	10		100/0.25	0.075	2070
SM7850-120	12		100/0.25	0.080	1850
SM7850-150	15		100/0.25	0.090	1670
SM7850-180	18		100/0.25	0.100	1520
SM7850-220	22		100/0.25	0.110	1400
SM7850-270	27		100/0.25	0.120	1240
SM7850-330	33		100/0.25	0.130	1160
SM7850-390	39		100/0.25	0.160	1050
SM7850-470	47		100/0.25	0.196	960
SM7850-560	56		100/0.25	0.240	870
SM7850-680	68		100/0.25	0.280	790
SM7850-820	82		100/0.25	0.370	720
SM7850-101	100		100/0.25	0.430	650
SM7850-121	120		100/0.25	0.470	590
SM7850-151	150		100/0.25	0.640	530
SM7850-181	180		100/0.25	0.710	490
SM7850-221	220		100/0.25	0.960	440
SM7850-271	270		100/0.25	1.15	400
SM7850-331	330		100/0.25	1.30	360
SM7850-391	390		100/0.25	1.80	330
SM7850-471	470		100/0.25	2.00	300
SM7850-561	560	100/0.25	2.20	280	



Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
SM7850-681	680	K	100/0.25	2.75	250
SM7850-821	820		100/0.25	3.10	230
SM7850-102	1000		100/0.25	3.85	200
SM7850-152	1500		100/0.25	5.20	180
SM7850-182	1800		100/0.25	7.00	160
SM7850-202	2000		100/0.25	7.00	160
SM7850-222	2200		100/0.25	8.30	150
SM7850-302	3000		100/0.25	8.90	150

Note: When ordering, please specify tolerance code. Tolerance: K: ±10%, M: ±20%;

1. Operating temperature range -40 -125°C

2. Isat for Inductance drop 30% from its value without current

● **SM1040 TYPE**

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
SM1040-1R0	1.0	K、M	100/0.25	0.015	7200
SM1040-1R8	1.8		100/0.25	0.020	4900
SM1040-2R7	2.7		100/0.25	0.025	4200
SM1040-3R3	3.3		100/0.25	0.030	3500
SM1040-3R9	3.9		100/0.25	0.032	3300
SM1040-4R7	4.7		100/0.25	0.035	3200
SM1040-5R6	5.6		100/0.25	0.040	2800
SM1040-6R8	6.8		100/0.25	0.046	2600
SM1040-8R2	8.2		100/0.25	0.052	2350
SM1040-100	10		100/0.25	0.071	2150
SM1040-120	12		100/0.25	0.076	2000
SM1040-150	15		100/0.25	0.090	1700
SM1040-180	18		100/0.25	0.089	1650
SM1040-220	22		100/0.25	0.10	1450
SM1040-270	27		100/0.25	0.12	1350
SM1040-330	33		100/0.25	0.13	1200
SM1040-390	39		100/0.25	0.16	1100
SM1040-470	47		100/0.25	0.19	1000



Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
SM1040-560	56	K、M	100/0.25	0.22	900
SM1040-680	68		100/0.25	0.25	800
SM1040-820	82		100/0.25	0.30	750
SM1040-101	100		100/0.25	0.38	650
SM1040-121	120		100/0.25	0.44	600
SM1040-151	150		100/0.25	0.52	550
SM1040-181	180		100/0.25	0.60	500
SM1040-221	220		100/0.25	0.75	450
SM1040-271	270		100/0.25	0.88	400
SM1040-331	330		100/0.25	1.15	380
SM1040-391	390		100/0.25	1.38	340
SM1040-471	470		100/0.25	1.64	320
SM1040-561	560		100/0.25	2.06	290
SM1040-681	680		100/0.25	2.55	260
SM1040-821	820		100/0.25	3.10	240
SM1040-102	1000		100/0.25	3.55	220

Note: When ordering, please specify tolerance code. Tolerance: K: ±10%、M: ±20%;

1. Operating temperature range -40 -125°C

2. Isat for Inductance drop 30% from its value without current

● **SM1054 TYPE**

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
SM1054-1R0	1.0	K、M	100/0.25	0.010	7600
SM1054-1R8	1.8		100/0.25	0.012	6220
SM1054-2R7	2.7		100/0.25	0.020	4960
SM1054-3R3	3.3		100/0.25	0.025	4560
SM1054-3R9	3.9		100/0.25	0.028	4020
SM1054-4R7	4.7		100/0.25	0.031	3600
SM1054-5R6	5.6		100/0.25	0.035	3260
SM1054-6R8	6.8		100/0.25	0.039	2970
SM1054-8R2	8.2		100/0.25	0.042	2740



Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
SM1054-100	10	K、M	100/0.25	0.045	2530
SM1054-120	12		100/0.25	0.065	2210
SM1054-150	15		100/0.25	0.069	2070
SM1054-180	18		100/0.25	0.080	1850
SM1054-220	22		100/0.25	0.090	1670
SM1054-270	27		100/0.25	0.098	1520
SM1054-330	33		100/0.25	0.114	1340
SM1054-390	39		100/0.25	0.123	1240
SM1054-470	47		100/0.25	0.15	1160
SM1054-560	56		100/0.25	0.16	1050
SM1054-680	68		100/0.25	0.22	940
SM1054-820	82		100/0.25	0.27	870
SM1054-101	100		100/0.25	0.32	790
SM1054-121	120		100/0.25	0.40	690
SM1054-151	150		100/0.25	0.47	620
SM1054-220	220		100/0.25	0.68	510
SM1054-271	270		100/0.25	0.84	460
SM1054-331	330		100/0.25	1.01	420
SM1054-391	390		100/0.25	1.18	390
SM1054-471	470		100/0.25	1.42	350
SM1054-561	560		100/0.25	1.72	320
SM1054-681	680		100/0.25	2.10	290
SM1054-821	820		100/0.25	2.58	260
SM1054-102	1000		100/0.25	3.43	240

Note: When ordering, please specify tolerance code. Tolerance: K: $\pm 10\%$, M: $\pm 20\%$;

1. Operating temperature range -40 -125°C

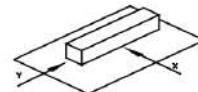
2. Isat for Inductance drop 30% from its value without current



DETAIL ELECTRICAL CHARACTERISTICS

1. Operating temperature range: -40 to + 105°C(Includes temperature when the coil is heated) .
2. External appearance: On visual inspection, the coil has no external defects.
3. Terminal strength: After soldering. Between copper plate and terminals of coil. Push in two directions of X.Y

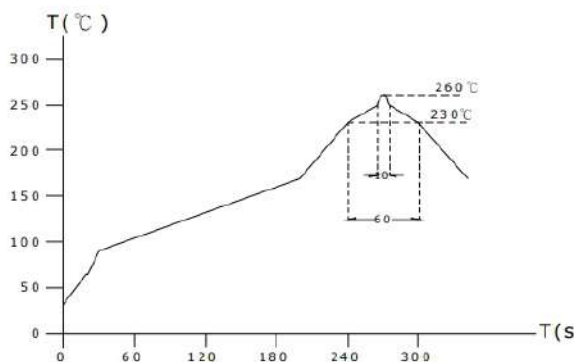
withstanding at below conditions.



Terminal should not peel off. (refer to figure at right) 5. 0N 60 sec.

4. Insulating resistance: Over 100MΩ at 100V D.C. between coil and core.
5. Dielectric strength: No dielectric breakdown at 100V D.C. for 1 minute between coil and core.
6. Temperature characteristics: Inductance coefficient $(0\sim 2,000)\times 10^{-6}/^{\circ}\text{C}$ (-25~+80°C degree Celsius), inductance deviation within $\pm 5.0\%$, after 96 hours.
7. Humidity characteristics(Moisture Resistance): Inductance deviation within $\pm 5\%$, after 96 hours in 90~95% relative humidity at $40 \pm 2^{\circ}\text{C}$ and 1 hour drying under normal condition.
8. Vibration resistance: Inductance deviation within $\pm 5\%$, after vibration for 1 hour. In each of three orientations at sweep vibration (10~55~10 Hz) with 1.5mm P-P amplitudes.
9. Shock resistance: Inductance deviation within $\pm 5\%$, after being dropped once with 981m/s² (100G) shock attitude upon a rubber block method shock testing machine, in three different orientations.
10. Resistance to Soldering Heat: 260°C, 10 seconds(See attached recommend reflow) .
11. Storage condition: Temperature Range: 0°C ~ 35°C; -40°C ~ 105°C (after PCB), Humidity Range: 50% ~ 70% RH.
12. Use components within 12 months. If 12 months or more have elapsed, check solderability before use.
13. Reflow profile recommend:

Lead-free heat endurance test



Lead-free the recommended reflow condition

