Data Sheet

Customer:	
Product:	**Shielded SMD Power Inductor – SDA Series**
Size:	**0420/0430/0530/0630/0660/0730/0750/0880/1006/1010/1508/1510/1513**
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RoHS Compliant

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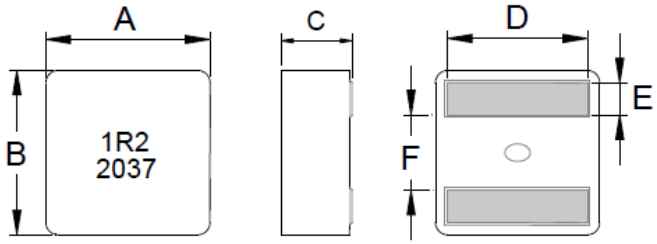
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Shielded SMD Power Inductor

Shielded SMD Power Inductor





Recommend PC Board Pattern

Dimensions

Type	A mm	B mm	C mm	D mm	E mm	F mm	L mm	G mm	H mm
SDA0420LR	4.4±0.2	4.4±0.2	1.9±0.2	3.4±0.3	0.88±0.2	1.6±0.25	3.4 ref	1.4 ref	3.8 ref
SDA0430LR	4.4±0.2	4.4±0.2	2.8±0.2	3.4±0.3	0.88±0.2	1.6±0.25	3.4 ref	1.4 ref	3.8 ref
SDA0530A	6.0±0.2	5.7±0.2	2.9±0.2	4.3±0.3	1.1±0.2	2.3±0.25	4.5 ref	2.0 ref	4.7 ref
SDA0630A	7.2±0.2	6.9±0.2	See Table	See Table	1.4±0.2	2.6±0.25	5.6 ref	2.5 ref	5.6 ref
SDA0660LR	7.2±0.2	6.9±0.2	5.8±0.2	5.3±0.3	1.4±0.2	2.6±0.25	5.6 ref	2.5 ref	5.6 ref
SDA0730A	8.4±0.3	8.0±0.3	2.9±0.2	See Table	1.75±0.2	3.15±0.25	7.4 ref	2.8 ref	7.2 ref
SDA0750A	8.4±0.3	8.0±0.3	4.8±0.2	See Table	1.75±0.2	3.15±0.25	7.4 ref	2.8 ref	7.2 ref
SDA0880A	8.9±0.3	8.5±0.3	7.7±0.3	See Table	1.8±0.2	3.5±0.3	8.0 ref	2.7 ref	7.8 ref
SDA1006A	11.9±0.3	11.0±0.3	5.7±0.3	See Table	2.4±0.2	4.5±0.3	10.5 ref	3.7 ref	11.0 ref
SDA1010A	11.9±0.3	11.0±0.3	9.7±0.3	See Table	2.4±0.2	4.4±0.3	10.5 ref	3.7 ref	11.0 ref
SDA1508A	17.5±0.3	16.5±0.3	7.7±0.3	13.2±0.5	3.2±0.2	7.0±0.3	15.0 ref	6.0 ref	15.0 ref
SDA1510A	17.5±0.3	16.5±0.3	9.7±0.3	13.2±0.5	3.2±0.2	7.0±0.3	15.0 ref	6.0 ref	15.0 ref
SDA1513A	17.5±0.3	16.5±0.3	12.7±0.3	13.2±0.5	3.2±0.2	7.0±0.3	15.0 ref	6.0 ref	15.0 ref

Features

- Low loss realized with low DCR
- High performance realized by metal dust core.
- Ultra low buzz noise, due to composite construction.
- 100% Lead(Pb)-Free and RoHS compliant.

Applications

- Commercial applications

Inductance and rated current ranges

- SDA0420LR 0.47~2.20μH 12.5~4.8A
- SDA0430LR 1.00~3.30μH 9.0~5.3A
- SDA0530A 0.47~4.70μH 24.0~7.0A
- SDA0630A 0.33~4.50μH 28.0~8.0A
- SDA0660LR 1.00~22.0μH 16.0~5.0A
- SDA0730A 1.00~4.70μH 28.0~12.2A
- SDA0750A 2.20~5.60μH 17.0~11.0A
- SDA0880A 3.30~10.0μH 20.0~10.0A
- SDA1006A 2.20~10.0μH 36.0~13.0A
- SDA1010A 4.70~10.0μH 21.4~14.6A
- SDA1508A 2.20~22.0μH 49.0~16.0A
- SDA1510A 4.7~33.0μH 39.0~16.7A
- SDA1513A 4.7~33.0μH 40.0~16.0A
- Test equipment:
  L/Q: HP4284A,HP4395A,CH11025,CH3302,CH1320,CH1320S LCR Meter.
  DCR: CH16502,Agilent 33420A Micro Ohm Meter,or EQU.

Characteristics

- All test data referenced to 25℃ ambient.
- Current that causes the specified temperature rise from 25℃ ambient.
- The part temperature (ambient + temp rise) should not exceed 125℃ under worst case operating conditions. Circuit design, component, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.
- Irms Testing : Temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components. Therefore temperature rise should be verified in application conditions.
- Operating temperature:-40~+125℃(Including self - temperature rise)
- Storage temperature:-10~+40℃,50~60%RH(Product without taping);-40~+125℃(on board)
- Shelf life: 1 years Max
- SDA0420LR/SDA0430LR
  Sturation Current (Isat 1) will cause L0 to drop approximately 10%
  Sturation Current (Isat 2) will cause L0 to drop approximately 20%
  Sturation Current (Isat 3) will cause L0 to drop approximately 30%
- SAD0530A/SDA0630A/SDA0660LR/SDA0730A/SDA0750A/SDA0880A /SDA1006A/SDA1010A/SDA1508A/SDA1510A/SDA1513A
  Sturation Current (Isat) will cause L0 to drop approximately 30%
- SDA0420LR/SDA0430LR/SDA0660LR
  Rated operating voltage (across inductor) 15V ref.
- SDA0530A/SDA0630A/SDA0730A/SDA0750A/SDA0880A/SDA1006A /SDA1010A/SDA1508A/SDA1510A/SDA1513A
  Rated operating voltage (across inductor) 40V ref.

Shielded SMD Power Inductor

■Product Identification

SDA	0420	M	T	A	1R0
Product Type	Dimensions (BxC)	Inductor Tolerance	Packaging Style	Material Code	Inductance
	0420: 4.4×1.9 0430:4.4x2.8 0530:5.7x2.9 0630:6.9xSee SPEC Table 0660:6.9x5.8 0730:8.0x2.9 0750:8.0x4.8 0880:8.5x7.7 1006:11.0x5.7 1010:11.0x9.7 1508:16.5x7.7 1510:16.5x9.7 1513:16.5x12.7	M: ±20%	T: Tape and Reel	A: A Material LR:LR Material	R47:0.47μH 1R0: 1.00μH 100:10μH

■Electrical Characteristics

SDA0420 / LR Material (□:Tolerance)

Part No	Inductance (μH)	Tolerance	Test Condition	DCR(mΩ)		I sat (A)				I rms (A) Typ.	
				Typ.	Max.	Typ.			Max.	20℃ rise	40℃ rise
						1	2	3	3		
SDA0420□TLRR47	0.47	M	100KHz,0.1V	6.0	6.8	7.0	10.0	14.0	12.5	9.8	13.2
SDA0420□TLRR56	0.56	M	100KHz,0.1V	6.9	7.8	6.0	9.0	13.0	11.3	9.5	12.6
SDA0420□TLRR68	0.68	M	100KHz,0.1V	7.3	8.2	5.2	8.0	11.6	10.0	9.2	12.0
SDA0420□TLR1R0	1.00	M	100KHz,0.1V	10.6	11.7	4.5	5.4	9.2	8.0	8.0	11.0
SDA0420□TLR1R5	1.50	M	100KHz,0.1V	14.4	15.8	4.1	4.5	7.5	6.7	6.7	9.1
SDA0420□TLR2R2	2.20	M	100KHz,0.1V	21.35	23.5	3.1	3.8	6.0	4.8	6.0	8.0

SDA0430 / LR Material (□:Tolerance)

Part No	Inductance (μH)	Tolerance	Test Condition	DCR(mΩ)		I sat (A)				I rms(A) Typ.	
				Typ.	Max.	Typ.			Max.	20℃ rise	40℃ rise
						1	2	3	3		
SDA0430□TLR1R0	1.00	M	100KHz,0.1V	9.1	10.1	5.0	6.8	9.8	9.0	8.0	11.0
SDA0430□TLR1R2	1.20	M	100KHz,0.1V	10.4	11.5	4.6	6.4	9.2	8.7	7.8	9.8
SDA0430□TLR1R5	1.50	M	100KHz,0.1V	12.0	13.2	4.1	5.6	8.0	7.0	7.0	9.0
SDA0430□TLR2R2	2.20	M	100KHz,0.1V	20.5	22.6	3.6	5.1	7.0	6.1	6.0	7.8
SDA0430□TLR3R3	3.30	M	100KHz,0.1V	26.0	28.6	3.3	4.8	6.2	5.3	5.0	6.6

SDA0660 / LR Material (□:Tolerance)

Part No	Inductance (μH)	Tolerance	Test Condition	DCR(mΩ)		I sat (A)		I rms(A) Typ.	
				Typ.	Max.	Typ.	Max.	20℃ rise	40℃ rise
SDA0660□TLR1R0	1.00	M	100KHz,0.1V	3.9	4.29	18.0	16.0	15.0	19.0
SDA0660□TLR2R2	2.20	M	100KHz,0.1V	7.0	7.80	14.0	12.0	11.0	14.0
SDA0660□TLR3R3	3.30	M	100KHz,0.1V	11.0	12.1	11.5	10.5	9.0	12.0
SDA0660□TLR4R7	4.70	M	100KHz,0.1V	13.1	14.4	10.5	9.5	8.0	11.0
SDA0660□TLR8R2	8.20	M	100KHz,0.1V	22.5	24.8	8.5	8.0	6.0	8.0
SDA0660□TLR100	10.0	M	100KHz,0.1V	26.6	29.3	7.6	6.8	5.0	7.0
SDA0660□TLR150	15.0	M	100KHz,0.1V	39.0	43.0	5.8	5.2	4.5	6.0
SDA0660□TLR220	22.0	M	100KHz,0.1V	55.0	60.5	5.6	5.0	3.8	5.0

■Electrical Characteristics

SDA0530 / A Material (□:Tolerance)

Part No	Inductance (μH)	Tolerance	Test Condition	DCR(mΩ)		I sat (A)		I rms(A) Typ.	
				Typ.	Max.	Typ.	Max.	20℃ rise	40℃ rise
SDA0530□TAR47	0.47	M	100KHz,0.1V	3.75	4.13	26.0	24.0	13.7	18.4
SDA0530□TAR56	0.56	M	100KHz,0.1V	4.05	4.52	22.2	20.2	13.6	17.7
SDA0530□TAR82	0.82	M	100KHz,0.1V	5.25	5.78	19.7	17.6	9.90	12.9
SDA0530□TA1R0	1.00	M	100KHz,0.1V	6.90	7.60	16.5	14.3	9.00	12.2
SDA0530□TA1R5	1.50	M	100KHz,0.1V	10.1	11.2	14.0	12.5	8.00	10.5
SDA0530□TA2R2	2.20	M	100KHz,0.1V	13.2	14.5	10.0	9.0	7.20	9.70
SDA0530□TA3R3	3.30	M	100KHz,0.1V	21.0	23.1	9.5	8.7	5.90	8.10
SDA0530□TA4R7	4.70	M	100KHz,0.1V	33.0	36.3	8.2	7.0	4.30	5.90

SDA0630 / A Material (□:Tolerance)

Part No	Inductance (μH)	Tolerance	Test Condition	DCR(mΩ)		I sat (A)		I rms(A) Typ.		C(mm)	D(mm)
				Typ.	Max.	Typ.	Max.	20℃ rise	40℃ rise		
SDA0630□TAR33	0.33	M	100KHz,0.1V	2.25	2.50	32.0	28.0	20.0	25.0	2.8±0.2	5.55±0.3
SDA0630□TAR68	0.68	M	100KHz,0.1V	4.7	5.17	25.0	21.0	15.0	20.0	2.8±0.2	5.30±0.3
SDA0630□TA1R0	1.00	M	100KHz,0.1V	5.50	6.05	23.0	18.0	13.0	18.0	2.8±0.2	5.20±0.3
SDA0630□TA1R5	1.50	M	100KHz,0.1V	8.30	9.13	20.0	15.5	11.0	15.0	2.9±0.2	5.15±0.3
SDA0630□TA2R2	2.20	M	100KHz,0.1V	11.0	12.2	15.9	11.0	7.00	10.0	2.9±0.2	5.05±0.3
SDA0630□TA3R3	3.30	M	100KHz,0.1V	18.8	20.8	12.2	9.00	6.00	8.00	2.9±0.2	5.00±0.3
SDA0630□TA4R5	4.50	M	100KHz,0.1V	23.0	25.3	10.0	8.00	5.00	7.00	2.9±0.2	5.00±0.3

SDA0730 / A Material (□:Tolerance)

Part No	Inductance (μH)	Tolerance	Test Condition	DCR(mΩ)		I sat (A)		I rms(A) Typ.		D(mm)
				Typ.	Max.	Typ.	Max.	20℃ rise	40℃ rise	
SDA0730□TA1R0	1.00	M	100KHz,0.1V	4.55	5.00	30.0	28.0	16.1	21.8	6.6±0.3
SDA0730□TA1R5	1.50	M	100KHz,0.1V	7.50	8.25	25.0	23.5	12.0	15.3	6.6±0.3
SDA0730□TA2R2	2.20	M	100KHz,0.1V	12.4	13.7	19.0	17.0	10.0	13.0	6.2±0.3
SDA0730□TA3R3	3.30	M	100KHz,0.1V	16.3	18.0	15.0	13.0	8.00	10.0	6.2±0.3
SDA0730□TA4R7	4.70	M	100KHz,0.1V	24.2	26.7	13.5	12.2	6.90	9.00	6.2±0.3

SDA0750 / A Material (□:Tolerance)

Part No	Inductance (μH)	Tolerance	Test Condition	DCR(mΩ)		I sat (A)		I rms(A) Typ.		D(mm)
				Typ.	Max.	Typ.	Max.	20℃ rise	40℃ rise	
SDA0750□TA2R2	2.20	M	100KHz,0.1V	5.8	6.4	21.0	17.0	11.0	14.0	6.2±0.3
SDA0750□TA3R3	3.30	M	100KHz,0.1V	10.4	11.44	17.0	14.0	10.0	13.0	6.2±0.3
SDA0750□TA4R7	4.70	M	100KHz,0.1V	14.0	15.4	15.0	13.0	8.5	11.0	6.2±0.3
SDA0750□TA5R6	5.60	M	100KHz,0.1V	15.6	17.2	13.0	11.0	7.0	10.0	6.2±0.3

SDA0880 / A Material (□:Tolerance)

Part No	Inductance (μH)	Tolerance	Test Condition	DCR(mΩ)		I sat (A)		I rms(A) Typ.		D(mm)
				Typ.	Max.	Typ.	Max.	20℃ rise	40℃ rise	
SDA0880□TA3R3	3.30	M	100KHz,0.1V	6.6	7.3	23.0	20.0	13.5	18.0	6.9±0.4
SDA0880□TA4R7	4.70	M	100KHz,0.1V	8.9	9.8	19.0	17.0	10.5	14.6	6.9±0.4
SDA0880□TA6R8	6.80	M	100KHz,0.1V	13.0	14.3	14.5	12.5	8.0	11.3	6.9±0.4
SDA0880□TA100	10.0	M	100KHz,0.1V	20.8	22.9	11.0	10.0	6.6	8.7	6.9±0.4

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SDA1006 / A Material (□:Tolerance)

Part No	Inductance (μH)	Tolerance	Test Condition	DCR(mΩ)		I sat (A)		I rms(A) Typ.		D(mm)
				Typ.	Max.	Typ.	Max.	20℃ rise	40℃ rise	
SDA1006□TA2R2	2.20	M	100KHz,0.1V	4.40	4.84	35.0	30.0	14.0	20.0	9.0±0.5
SDA1006□TA3R3	3.30	M	100KHz,0.1V	7.00	7.70	28.0	25.0	11.4	16.8	9.0±0.5
SDA1006□TA4R7	4.70	M	100KHz,0.1V	9.70	10.72	25.0	22.0	8.7	14.0	9.0±0.5
SDA1006□TA5R6	5.60	M	100KHz,0.1V	10.8	11.9	20.0	17.0	7.0	12.0	8.8±0.5
SDA1006□TA6R8	6.80	M	100KHz,0.1V	11.8	13.0	18.0	15.5	6.0	10.5	8.8±0.5
SDA1006□TA8R2	8.20	M	100KHz,0.1V	15.0	16.5	16.5	14.0	5.0	9.5	8.8±0.5
SDA1006□TA100	10.0	M	100KHz,0.1V	16.5	18.2	15.0	13.0	4.5	9.0	8.8±0.5

SDA1010 / A Material (□:Tolerance)

Part No	Inductance (μH)	Tolerance	Test Condition	DCR(mΩ)		I sat (A)		I rms(A) Typ.		D(mm)
				Typ.	Max.	Typ.	Max.	20℃ rise	40℃ rise	
SDA1010□TA4R7	4.70	M	100KHz,0.1V	5.2	5.7	25.4	21.4	17.5	24.0	9.3±0.5
SDA1010□TA5R6	5.60	M	100KHz,0.1V	6.5	7.2	23.6	19.6	15.7	21.2	9.3±0.5
SDA1010□TA6R8	6.80	M	100KHz,0.1V	8.1	8.9	21.8	18.5	14.0	18.5	9.0±0.5
SDA1010□TA8R2	8.20	M	100KHz,0.1V	10.8	12.4	18.3	16.3	12.9	17.1	9.0±0.5
SDA1010□TA100	10.0	M	100KHz,0.1V	12.5	13.75	17.5	14.6	11.5	15.5	9.0±0.5

SDA1508 / A Material (□:Tolerance)

Part No	Inductance (μH)	Tolerance	Test Condition	DCR(mΩ)		I sat (A)		I rms(A) Typ.	
				Typ.	Max.	Typ.	Max.	20℃ rise	40℃ rise
SDA1508□TA2R2	2.20	M	100KHz,0.1V	2.15	2.48	55.0	49.0	28.0	37.0
SDA1508□TA3R0	3.00	M	100KHz,0.1V	2.50	3.00	46.0	41.0	26.0	34.5
SDA1508□TA4R7	4.70	M	100KHz,0.1V	4.30	5.16	37.0	32.0	20.0	26.5
SDA1508□TA5R3	5.30	M	100KHz,0.1V	4.45	5.34	35.0	31.0	19.5	26.0
SDA1508□TA6R2	6.20	M	100KHz,0.1V	5.40	6.50	34.0	31.0	17.0	23.0
SDA1508□TA8R2	8.20	M	100KHz,0.1V	6.60	7.92	28.0	25.0	13.0	19.0
SDA1508□TA100	10.0	M	100KHz,0.1V	8.00	9.60	24.0	21.0	11.0	16.0
SDA1508□TA150	15.0	M	100KHz,0.1V	12.50	15.00	21.0	18.0	10.0	13.0
SDA1508□TA220	22.0	M	100KHz,0.1V	19.30	23.20	19.0	16.0	9.0	12.0

SDA1510 / A Material (□:Tolerance)

Part No	Inductance (μH)	Tolerance	Test Condition	DCR(mΩ)		I sat (A)		I rms(A) Typ.	
				Typ.	Max.	Typ.	Max.	20℃ rise	40℃ rise
SDA1510□TA4R7	4.7	M	100KHz,0.1V	3.40	3.80	43.0	39.0	22.0	30.0
SDA1510□TA5R6	5.6	M	100KHz,0.1V	3.82	4.20	38.0	34.0	21.0	28.0
SDA1510□TA6R8	6.8	M	100KHz,0.1V	4.18	4.60	36.0	31.0	20.0	26.0
SDA1510□TA8R2	8.2	M	100KHz,0.1V	6.00	7.20	32.0	28.0	19.0	25.0
SDA1510□TA100	10.0	M	100KHz,0.1V	7.10	8.60	29.0	26.0	18.0	24.0
SDA1510□TA150	15.0	M	100KHz,0.1V	9.20	11.50	23.0	20.0	14.0	18.0
SDA1510□TA220	22.0	M	100KHz,0.1V	13.2	15.8	20.0	18.0	11.0	16.0
SDA1510□TA330	33.0	M	100KHz,0.1V	18.7	20.0	18.7	16.7	9.0	13.0

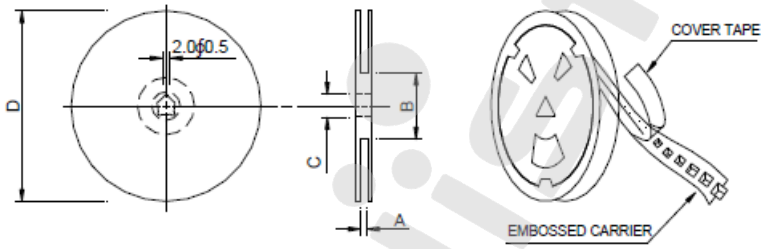
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SDA1513 / A Material (□:Tolerance)

Part No	Inductance (μH)	Tolerance	Test Condition	DCR(mΩ)		I sat (A)		I rms(A) Typ.	
				Typ.	Max.	Typ.	Max.	20℃ rise	40℃ rise
SDA1513□TA4R7	4.70	M	100KHz,0.1V	3.0	3.3	44.0	40.0	23.0	31.0
SDA1513□TA5R6	5.60	M	100KHz,0.1V	3.5	3.9	40.0	35.0	22.0	29.0
SDA1513□TA6R8	6.80	M	100KHz,0.1V	3.8	4.2	37.0	32.0	21.0	27.0
SDA1513□TA8R2	8.20	M	100KHz,0.1V	5.1	5.74	33.0	29.0	20.0	26.0
SDA1513□TA100	10.0	M	100KHz,0.1V	6.3	7.0	30.0	27.0	19.0	25.0
SDA1513□TA150	15.0	M	100KHz,0.1V	6.8	7.5	25.5	21.0	16.0	22.0
SDA1513□TA220	22.0	M	100KHz,0.1V	12.6	13.86	22.0	19.0	12.0	17.0
SDA1513□TA330	33.0	M	100KHz,0.1V	18.5	22.2	19.0	16.0	9.0	14.0

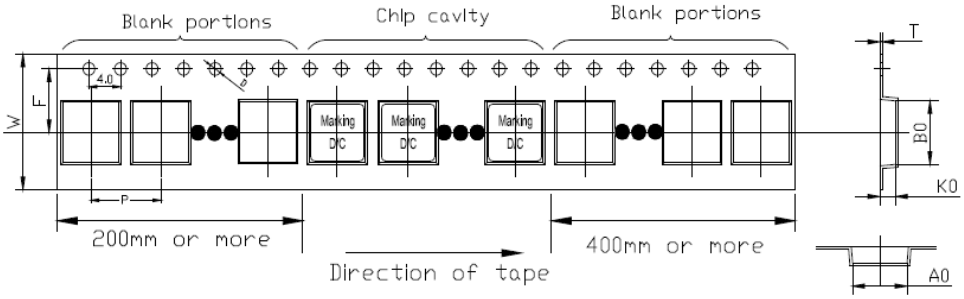
■Packaging Information

Reel Dimension



Type	Packaging Quantity	Tape Width(mm)	Reel Diameter(inch)	A (mm)	B (mm)	C (mm)	D (mm)
SDA0420LR	3000	12	13	12.4+2/-0	100±2	13+0.5/-0.2	330
SDA0430LR	2000	12	13	12.4+2/-0	100±2	13+0.5/-0.2	330
SDA0530A	2000	16	13	16.4+2/-0	100±2	13+0.5/-0.2	330
SDA0630A	1000	16	13	16.4+2/-0	100±2	13+0.5/-0.2	330
SDA0660LR	750	16	13	16.4+2/-0	100±2	13+0.5/-0.2	330
SDA0730A	1500	16	13	16.4+2/-0	100±2	13+0.5/-0.2	330
SDA0750A	800	16	13	16.4+2/-0	100±2	13+0.5/-0.2	330
SDA0880A	450	24	13	24.4+2/-0	100±2	13+0.5/-0.2	330
SDA1006A	500	24	13	24.4+2/-0	100±2	13+0.5/-0.2	330
SDA1010A	300	24	13	24.4+2/-0	100±2	13+0.5/-0.2	330
SDA1508A	200	32	13	32.4+2/-0	100±2	13+0.5/-0.2	330
SDA1510A	150	32	13	32.4+2/-0	100±2	13+0.5/-0.2	330
SDA1513A	100	32	13	32.4+2/-0	100±2	13+0.5/-0.2	330

Tape Dimension



Type	B0 (mm)	A0 (mm)	K0 (mm)	P (mm)	W (mm)	F (mm)	T (mm)	D (mm)
SDA0420LR	4.7±0.1	4.7±0.1	2.3±0.1	8.0±0.1	12.0±0.3	5.5±0.1	0.35±0.1	1.5±0.1
SDA0430LR	4.7±0.1	4.7±0.1	3.3±0.1	8.0±0.1	12.0±0.3	5.5±0.1	0.35±0.1	1.5±0.1
SDA0530A	6.1±0.1	6.4±0.1	3.3±0.1	8.0±0.1	16.0±0.3	7.5±0.1	0.35±0.05	1.5±0.1
SDA0630A	7.3±0.1	7.6±0.1	3.3±0.1	12.0±0.1	16.0±0.3	7.5±0.1	0.35±0.05	1.5±0.1
SDA0660LR	6.3±0.1	7.6±0.1	6.3±0.1	12.0±0.1	16.0±0.3	7.5±0.1	0.35±0.1	1.5±0.1
SDA0730A	8.4±0.1	8.8±0.1	3.3±0.1	12.0±0.1	16.0±0.3	7.5±0.1	0.35±0.1	1.5±0.1
SDA0750A	8.4±0.1	8.8±0.1	5.3±0.1	12.0±0.1	16.0±0.3	7.5±0.1	0.35±0.1	1.5±0.1
SDA0880A	8.9±0.1	9.4±0.1	8.5±0.1	16.0±0.1	24.0±0.3	7.5±0.1	0.35±0.1	1.5±0.1
SDA1006A	11.5±0.1	12.4±0.1	6.3±0.1	16.0±0.1	24.0±0.3	11.5±0.1	0.35±0.1	1.5±0.1
SDA1010A	11.5±0.1	12.4±0.1	10.3±0.1	16.0±0.1	24.0±0.3	11.5±0.1	0.35±0.1	1.5±0.1
SDA1508A	17.0±0.1	18.0±0.1	8.5±0.1	24.0±0.1	32.0±0.3	14.2±0.1	0.50±0.05	1.5±0.1
SDA1510A	17.0±0.1	18.0±0.1	10.5±0.1	24.0±0.1	32.0±0.3	14.2±0.1	0.50±0.05	1.5±0.1
SDA1513A	17.0±0.1	18.0±0.1	13.6±0.1	24.0±0.1	32.0±0.3	14.2±0.1	0.50±0.05	1.5±0.1

■Environmental Characteristics

Electrical Perhormance Test

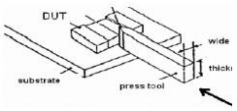
Item	Test Method	Test Method
Inductance	Refer to standard electrical characteristics list.	HP4284A,CH11025,CH3302,CH1320,CH1320S LCR Meter
DCR		CH16502,Agilent33420A Micro-Ohm Meter
Saturation Current (Isat)	Approximately ΔL30%	Saturation DC Current (Isat) will cause L0 to drop ΔL(%)
Heat Rated Current (Irms)	Approximately ΔT20℃ & ΔT40℃	Heat Rated Current (Irms) will cause the coil temperature rise ΔT(℃). 1. Applied the allowed DC current 2. Temperature measured by digital surface themometer

Reliability Test

Item	Test Method	Test Method
Lift Test	Appearance：No damage. Inductance：within±10% of initial value Q：Shall not exceed the specification value. RDC：within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through IR reflow for 3 times. (IPC/JEDEC J-STD-020E Classification Reflow Profiles) Temperature：125±2℃(Inductor, ambient + temp rise) Applied current: rated current Duration ：1000±12hrs Measured at room temperature after placing for 24±2 hrs.
Load Humidity		Preconditioning: Run through IR reflow for 3 times. (IPC/JEDEC J-STD-020E Classification Reflow Profiles) Humidity ：85±2%R.H, Temperature：85±2℃ Duration：1000hrs Min. Bead: with 100% rated current. Inductance：with 100% rated current Measured at room temperature after placing for 24±2 hrs.

Reliability Test

<table>
<tr><th>Item</th><th>Test Method</th><th>Test Method</th></tr>
<tr><td>Moisture Resistance</td><td rowspan="5">Appearance：No damage.
Inductance：within±10% of initial value
Q：Shall not exceed the specification value.
RDC：within ±15% of initial value and shall not exceed the specification value</td><td>Preconditioning: Run through IR reflow for 3 times.
(IPC/JEDEC J-STD-020E Classification Reflow Profiles)
1.Baked at 50℃ for 25hrs, measured at room temperature after placing for 4 hrs.
2.Raise temperature to 65±2℃ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25℃ in 2.5hrs.
3.Raise temperature to 65±2℃ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25℃ in 2.5hrs,keep at 25℃ for 2hrs then keep at -10℃ for 3hrs
4.Keep at 25℃ 80-100%RH for 15min and vibrate at the frequency of 10 to 55 Hz to 10 Hz, measure at room temperature after placing for 1~2 hrs.</td></tr>
<tr><td>Thermal shock</td><td>Preconditioning: Run through IR reflow for 3 times.
(IPC/JEDEC J-STD-020E Classification Reflow Profiles)
Condition for 1 cycle
Step1：-40±2℃ 30±5min ,
Step2：125±2℃ ≦0.5min
Step3：125±2℃ 30±5min : Number of cycles： 500
Measured at room temperature after placing for 24±2 hrs</td></tr>
<tr><td>Vibration</td><td>Preconditioning: Run through IR reflow for 3 times.
(IPC/JEDEC J-STD-020E Classification Reflow Profiles)
Oscillation Frequency: 10Hz～2KHz～10Hz for 20 minute
Equipment： Vibration checker
Total Amplitude:10g
Testing Time : 12 hours(20 minutes, 12 cycles each of 3 orientations)</td></tr>
<tr><td>Bending</td><td>Shall be mounted on a FR4 substrate of the following dimensions:≧0805 inch(2012mm):40x100x1.2mm
<0805 inch(2012mm):40x100x0.8mm
Bending depth:≧0805 inch(2012mm):1.2mm
<0805 inch(2012mm):0.8mm ;
duration of 10 sec.</td></tr>
<tr><td>Shock</td><td><table><tr><th>Type</th><th>Peak value (g's)</th><th>Normal duration (D) (ms)</th><th>Wave form</th><th>Velocity change (Vi)ft/sec</th></tr><tr><td>SDM</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr><tr><td>Lead</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr></table></td></tr>
<tr><td>Solderability</td><td>More than 95% of the terminal electrode should be covered with solder</td><td>a. Method B1, 4 hrs @155°C dry heat @235°C±5°C
Test time:5 +0/-0.5 seconds.

b. Method D category 3. (steam aging 8 hours ± 15 min)@260°C±5°C
Test time: 30 +0/-0.5 seconds.</td></tr>
<tr><td>Resistance to soldering Heat</td><td rowspan="2">Appearance：No damage.
Inductance：within±10% of initial value
Q：Shall not exceed the specification value.
RDC：within ±15% of initial value and shall not exceed the specification value</td><td>Depth: completely cover the termination
<table><tr><th>Temperature(℃)</th><th>Time(s)</th><th>Temperature ramp/immersion and emersion rate</th><th>Number of heat cycles</th></tr><tr><td>260±5 (solder temp)</td><td>10±1</td><td>25mm/s ± 6mm/s</td><td>1</td></tr></table></td></tr>
<tr><td>Terminal Strength</td><td>Preconditioning: Run through IR reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles)
With the component mounted on a PCB with the device to be tested, applyaforce(>0805inch(2012mm):1kg,<=0805inch(2012mm): 0.5kg) to the side of a device being tested. This force shall be applied for 60 +1 seconds. Also the force shall be applied gradually as not to apply a shock to the component being tested.
</td></tr>
</table>

Note : When there are questions concerning measurement result : measurement shall be made after 48 ± 2 hours of recovery under the standard condition

■Soldering Specifications

Soldering

Mildly activated rosin fluxes are preferred. Viking terminations are suitable for re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

IR Solder Reflow

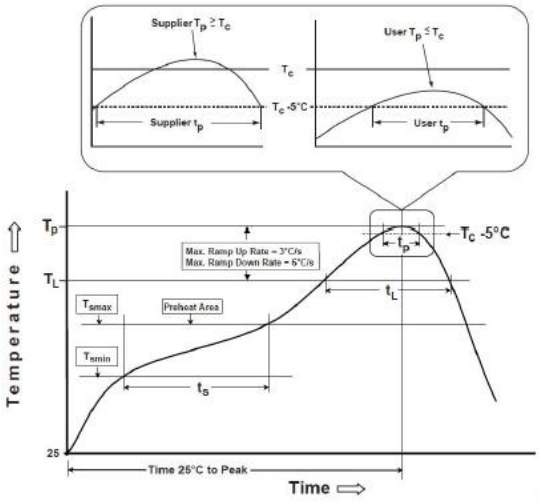
Recommended temperature profiles for lead free re-flow soldering as below(J-STD-020E)

Iron Reflow

Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended.

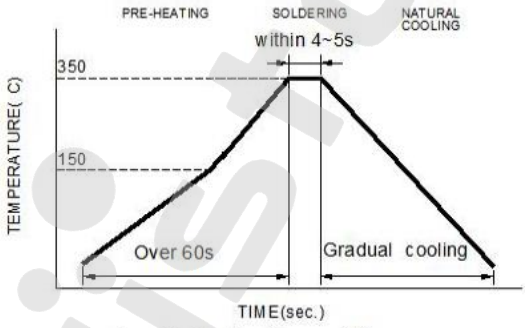
- Preheat circuit and products to 150℃
- Never contact the ceramic with the iron tip
- Use a 20 watt soldering iron with tip diameter of 1.0mm
- 355℃ tip temperature (max)
- 1.0mm tip diameter (max)
- Limit soldering time to 4~5sec.

IR Soldering Reflow



iles

Iron soldering temperature profiles



Iron Soldering times: 1 times max.

Soldering iron Method : 350± 5℃ max

Profile Type:	Pb-Free Assembly
Preheat -Temperature Min(T_{smin}) -Temperature Max(T_{smax}) -Time(t_s)from(T_{smin} to T_{smax})	 150℃ 200℃ 60-120seconds
Ramp-up rate($T_L$to T_p)	3℃/second max.
Liquidus temperature(T_L) Time(t_L)maintained above T_L	217℃ 60-150 seconds
Classification temperature(T_c)	See Table (1.2)
Time(t_p) at Tc- 5℃ (Tp should be equal to or less than Tc.)	< 30 seconds
Ramp-down rate(T_p to T_L)	6℃ /second max.
Time 25℃ to peak temperature	8 minutes max.

Tp: maximum peak package body temperature, Tc: the classification temperature.
For user (customer) **Tp** should be equal to or less than **Tc.**

Package Thickness/Volume and Classification Temperature (T_c)

	Package Thickness	Volume mm^3 <350	Volume mm^3 350-2000	Volume mm^3 >2000
PB-Free Assembly	<1.6mm	260℃	260℃	260℃
	1.6-2.5mm	260℃	250℃	245℃
	≥2.5mm	250℃	245℃	245℃

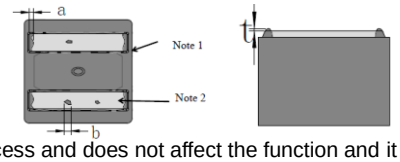
Reflow is referred to standard IPC/JEDEC J-STD-020E。

■Appearance Criterion

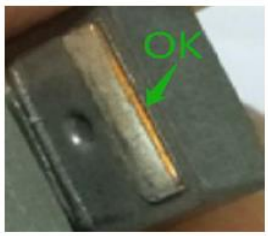
PAD residual powder、inner wire exposed、imprinting

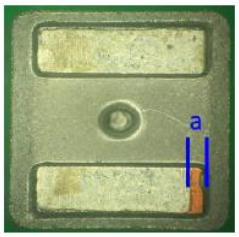
The residual powder on both side of pad is norm and within following criteria are acceptable

a	10% max of the length of pad.
b	5% max of the area on one single pad.
c	0.08mm max.



Note:
1. The imprinting mark below the part, are norm in manufacturing process and does not affect the function and it is acceptable.
2. Residual powder on the product body is inevitable and accepted.



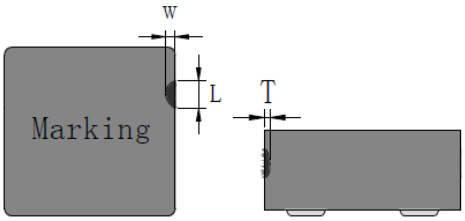




Front lit imprinting is acceptable.

Chip

Chip off is generated during molding and manufacturing process.
Chip off acceptance limits subjected to the product size.
Our current Defect limit is based on the IPC-A-610-2017 standard of Method 9.4.
Some chip off does not impact the product function, see the IPC standard 1 & 2.



T	25 % of the thickness
W	25 % of the width
L	50 % of the length

Defects usually occur at the corners and edges of the product,There will be a slight defect black and rough, but not exposed copper, and does not affect the product performance and reliability.
Each considered separately

Crack

Production process of cracks appearing in the body is inevitable, some slight crack is caused because the molding, is not oxidized, crack on the product will not affect product performance.
We have done a reliability test of crack products, even if cracks is more than 0.2mm width also will not affect the electrical properties of the product, crack limits as follows (Length≦1/3 body, width≦0.2mm ---OK)



Severely crack: not acceptable.
More obvious cracks extended from side to side.



Moderate crack: not acceptable.
Very obvious and may result in powder come off and exposed of copper wire.

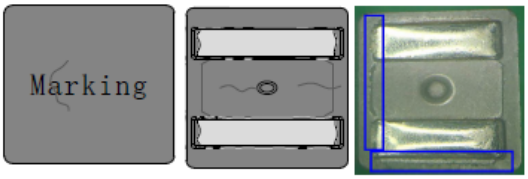


Slight wire expose: acceptable
wire exposed during Press process.



Lead wire imprint: acceptable
Turns of wires that close to the edge and imprint show.





Slight crack: acceptable.
Products from a slight crack in the baking process due to thermal expansion, and it is not obvious by visual inspection (Must not exceed the blue square area).

Oxidation(rust)

the contains iron composite, although the resin has a protective effect of oxidation,but there will be small amount of product that may occur oxidation.The oxidation area of each surface is allowed to be about 25% (in the case of non-reliability test),it is recommend that customer use this product in humidity controlled environment.The basic steps should be to protect the surface oxidation, including the sealed packages to PCB mount inductors. To avoid the adverse effects caused by oxidation,Oxidation occurs at the surface only allows the internal oxidation is not allowed, oxidized surface will not affect the reliability of the product.

Shielded SMD Power Inductor



4sides slightly oxidized side:
Acceptable



Top and bottom slightly oxidized side:
Acceptable



Spray printing effect :
can be accepted if recognizable

Oxidation (rust) area refer to Standard Chip 2.
P.S.:Visual Condition :visual inspection.

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version A1	Apr 10,2025		-Add Shelf life.