SPECIFICATION FOR APPROVAL

CUSTOMER	
CUSTOMER'S P/N	
DATE	10/Aug/2023 REVISION NO. A
PART NO.	AHCI100512T-R10LT
DRAWN NO.	220616-EN01

Signature

Approved by	Checked by	Drawn by
零件 2023/08/10 承認課	蔡 2023/08/10 柏良	刘 2023/08/10 科云

今展科技股份有限公司

ARLITECH ELECTRONIC CORP.

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SPECIFICATION FOR APPROVAL

ECN HISTORY LIST

REV	DATE	DESCRIPTION	CHECK	APPROVED
A	23.08.10	New release	Keyun Liu	

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SPECIFICATION FOR APPROVAL

CUSTOMER			
CUSTOMER'S P/N		**PAGE**	1/9
ARLITECH P/N	AHCI100512T-R10LT	**REVISION**	A
DRAWN NO.	220616-EN01	**DATE**	2023/08/10

PRODUCT IDENTIFICATION

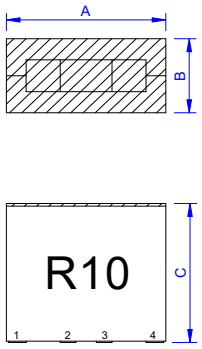
AHCI	100512	T	-	R10	L	T
1	2	3		4	5	6

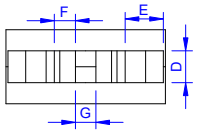
1. Product Series
2. Dimension : Length*Width*High
3. Type : Type Code
4. Inductance : R10=0.10uH
5. Tolerance : L=±15%
6. Package : T= Taping reel ;V= Vacuum Packing

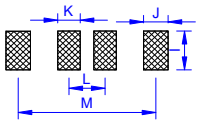
SPECIFICATION FOR APPROVAL

CUSTOMER			
CUSTOMER'S P/N		**PAGE**	2/9
ARLITECH P/N	AHCI100512T-R10LT	**REVISION**	A
DRAWN NO.	220616-EN01	**DATE**	2023/08/10

SHAPE & DIMENSION (UNIT:mm)







Recommended land pattern

A	10.0 MAX
B	5.0 MAX
C	12.0 MAX
D	2.5±0.2
E	2.7±0.2
F	1.1±0.2
G	1.46±0.3
I	3.00
J	1.75
K	1.30
L	2.20
M	8.50

ELECTRICAL SPECIFICATION

MEAS. ITEM	SPEC.				TEST FREQ.	CONDITIONS(Ta=20~25℃)
L(1-4&2-3)	0.10	uH	±	15%	100KHz/1V	Idc=0A
DCR(1-4)	0.125	mΩ	±	10%		Ta=25℃
DCR(2-3)	0.37	mΩ	±	10%		Ta=25℃
Isat(1-4)	90	A	Typ.		100KHz/1V	△L/L≒20%
Irms(1-4)	77	A	Typ.			△T≒40℃
Irms(2-3)	45	A	Typ.			△T≒40℃

※This product applies to Consumer Electronics only.
If needs to be used in high risk applications, please contact with our sales department .

GENERAL SPECIFICATION

Electrical specifications ： at 20~25℃
Operation Temperature： -40~+125℃ (Including self-temperature rise)
※The part temperature (ambient + temp rise) should not exceed 125℃ under the worst case operating conditions. Circuit design, component placement, PCB trace size and thickness, airflow and other cooling provision all affect the part temperature. Part temperature should be verified in the end application.
Storage Condition： +25℃±10℃,Humidity 40~70% RH

NOTE：

※Test Instrument： LCR METER(Chroma3250,Test1790)， BIAS CURRENT SOURCE(Chroma1320,Chroma1320S)

※Isat： For Inductance drop approximately 20% from its value without current.

※Irms： Typical Heat Rating D.C current would cause an approximately △T of 40℃(Ta=25℃)

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SPECIFICATION FOR APPROVAL

CUSTOMER			
CUSTOMER'S P/N		**PAGE**	3/9
ARLITECH P/N	AHCI100512T-R10LT	**REVISION**	A
DRAWN NO.	220616-EN01	**DATE**	2023/08/10

MATERIAL LIST



No.	ITEM	MATERIAL	VENDER	Remark
1	Core	Mn-Zn Ferrite	FERRUM OR EQUIVALENT	
2	Electrode	Cu-Ni-Sn	JIEHUI OR EQUIVALENT	

SPECIFICATION FOR APPROVAL

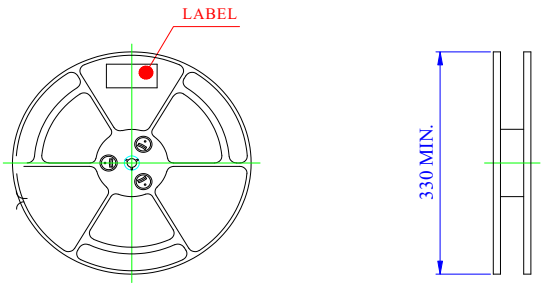
CUSTOMER			
CUSTOMER'S P/N			
ARLITECH P/N	AHCI100512T-R10LT	**PAGE**	4/9
DRAWN NO.	220616-EN01	**REVISION**	A
		DATE	2023/08/10

PACKAGING

Reel dimensions

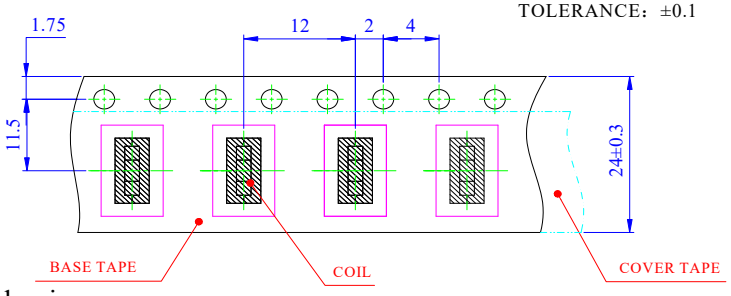
相关尺寸依据EIA-481-D规范管理

UNIT：mm



Tape dimensions

UNIT：mm
TOLERANCE：±0.1



Packaging

Quantity：400 pcs/reel
4 reels/carton
1600pcs/carton

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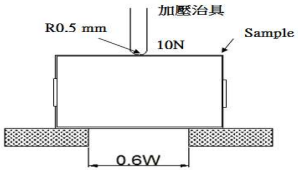
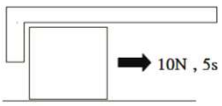
SPECIFICATION FOR APPROVAL

CUSTOMER			
CUSTOMER'S P/N		**PAGE**	5/9
ARLITECH P/N	AHCI100512T-R10LT	**REVISION**	A
DRAWN NO.	220616-EN01	**DATE**	2023/08/10

RELIABILITY TEST

MECHANICAL RELIABILITY

Test Items	Test Conditions	Criteria
Adhesion strength	A static load using a R0.5 pressing tool with 10N shall be applied to the body of the specimen in the direction of the arrow and shall be hold for 10s,measure after removing pressure. 	change from an initial value L:within±10%
Terminal strength	Add static load 10N to inductor through hole of test board for 5±2 sec. 	no detachment of terminal pin and no breakage of wire.
Vibration	Frequency: 10～55～10Hz Amplitude: 1.5mm Sweep time: 2 cycle Test Directions: X,Y,Z Test Time: 2 hours each direction	change from an initial value L:within±10%
Drop	Drop specimen three times on concrete floor from a height of 1 meter which mounted on test board.	change from an initial value L:within±10%

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SPECIFICATION FOR APPROVAL

CUSTOMER			
CUSTOMER'S P/N		**PAGE**	6/9
ARLITECH P/N	AHCI100512T-R10LT	**REVISION**	A
DRAWN NO.	220616-EN01	**DATE**	2023/08/10

RELIABILITY TEST

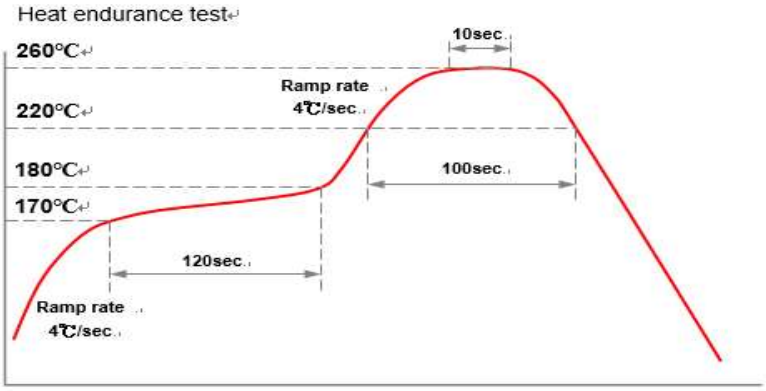
ENDURANCE RELIABILITY

Test Items	Test Conditions	Criteria
Low temperature storage	Placed at -40℃ for 500 hours, then measured at room ambient temperature after placing 24 hours.	change from an initial value L:within±10%
High temperature storage	Placed at +125℃ for 500 hours, then measured at room ambient temperature after placing 24 hours.	change from an initial value L:within±10%
Thermal shock	Condition for 1 cycle: -40℃, 30min. ～ +125℃,30min. Number of cycles:100	change from an initial value L:within±10%
Humidity resistance	Placed at 90 to 95%RH,+60±2℃ for 500 hours, then measured at room ambient temperature after placing 24 hours.	change from an initial value L:within±10%
High temperature dynamic operation test	Placed at +85℃ for 500 hours, then measured at room ambient temperature with current test after placing 24 hours.	Inductance shall be within ±10% of the initial value. Appearance: No damage
Solderability test	Terminals shall be immersed for 5 to 10 seconds in flux at room temperature.Dip sample into solder bath containing molten soldr at 245±3℃ for 3±0.5 seconds	New solder shall cover 90% minimun of the surface immersed.

SPECIFICATION FOR APPROVAL

CUSTOMER			
CUSTOMER'S P/N		**PAGE**	7/9
ARLITECH P/N	AHCI100512T-R10LT	**REVISION**	A
DRAWN NO.	220616-EN01	**DATE**	2023/08/10

REFLOW-PROFILE

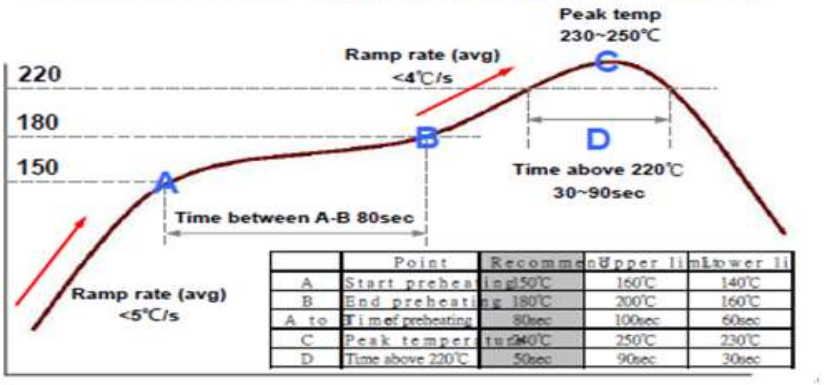


◎ The test should be made under the conditions according to the chart, after the test it is kept for 2 hours under the normal temperature and humidity.

◎ The reflow test can be done twice, but the interval should be more than one hour under the normal conditions.

◎ The reflow test conditions are based on the testing instruments available in

Recommended Reflow Profile (for EOC Solder paste S70G-HF)



	Point	Recommend	Upper li m	Lower li
A	Start preheating	150℃	160℃	140℃
B	End preheating	180℃	200℃	160℃
A to B	Time of preheating	80sec	100sec	60sec
C	Peak temperature	240℃	250℃	230℃
D	Time above 220℃	50sec	90sec	30sec

◎ The reflow condition recommended above is according to the machine used by our company. Big differences will arise as a result of the type of machine, reflow conditions, method, etc used. Hence, before setting up your reflow conditions, please confirm with the above.

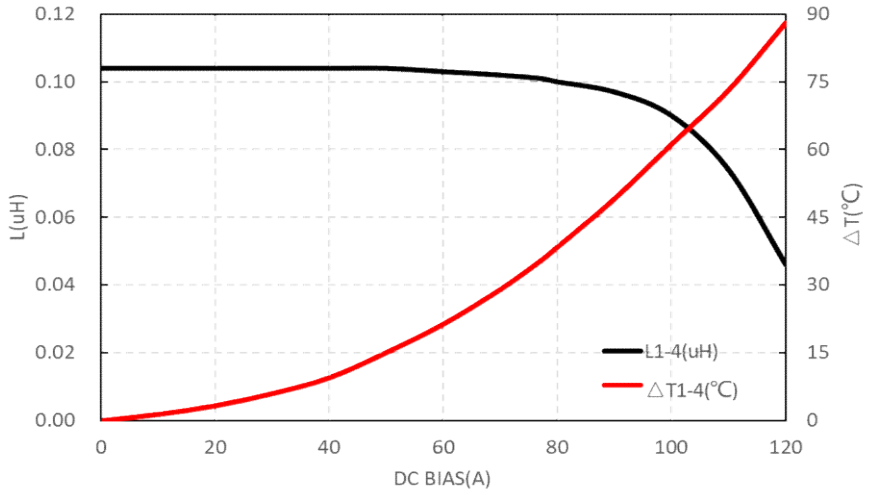
SPECIFICATION FOR APPROVAL

CUSTOMER			
CUSTOMER'S P/N		**PAGE**	8/9
ARLITECH P/N	AHCI100512T-R10LT	**REVISION**	A
DRAWN NO.	220616-EN01	**DATE**	2023/08/10

Current Characteristic

AHCI100512T-R10LT

DC BIAS(A)	L_{1-4}(uH)	$\triangle T_{1-4}$(℃)
0	0.104	0.0
10	0.104	1.4
20	0.104	3.3
30	0.104	6.0
40	0.104	9.5
50	0.104	15.1
60	0.103	21.4
70	0.102	29.1
77	0.101	35.4
80	0.100	38.5
90	0.097	49.2
100	0.090	61.3
110	0.074	73.3
120	0.046	88.2



※ DC bias current characteristics in the ambient temerature 20~25℃ Frequency 100KHz/1V

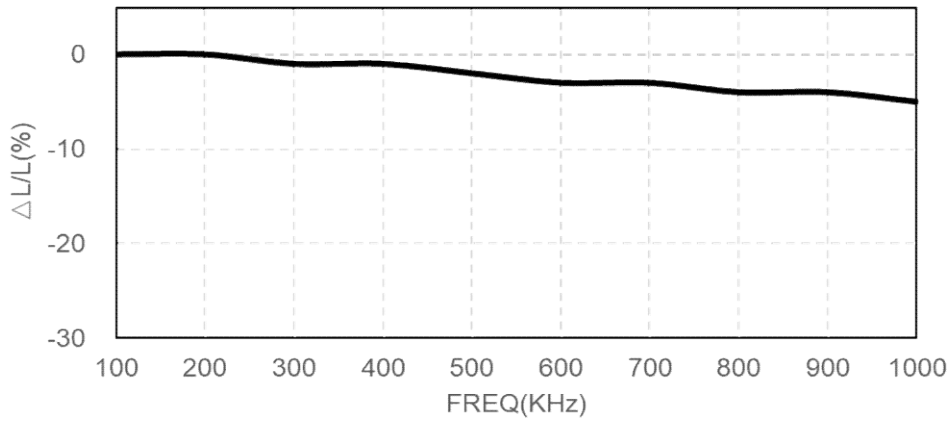
SPECIFICATION FOR APPROVAL

CUSTOMER			
CUSTOMER'S P/N		**PAGE**	9/9
ARLITECH P/N	AHCI100512T-R10LT	**REVISION**	A
DRAWN NO.	220616-EN01	**DATE**	2023/08/10

L-F CURVE

AHCI100512T-R10LT

FREQ(KHz)	L(uH)	△L/L(%)
100	0.100	0.00%
200	0.100	0.00%
300	0.099	-1.00%
400	0.099	-1.00%
500	0.098	-2.00%
600	0.097	-3.00%
700	0.097	-3.00%
800	0.096	-4.00%
900	0.096	-4.00%
1000	0.095	-5.00%



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SPECIFICATION FOR APPROVAL

CUSTOMER	
CUSTOMER'S P/N	
ARLITECH P/N	AHCI100512T-R10LT
DRAWN NO.	220616-EN01

TEST R.H.	40~85%
TEST TEMP.	20~25℃
DATE	2023/08/10

TEST DATA FOR PREPRODUCTION SAMPLE

TEST RESOLUTION								DIMENSION (Unit：mm)				
MEAS. ITEM	L(1-4&2-3) μH	DCR(1-4) mΩ	DCR(2-3) mΩ	Isat(1-4) uH	Irms(1-4) ℃			A	B	C	D	E
SPEC.	0.10 ± 15%	0.125 ± 10%	0.37 ± 10%	90A Typ. △L/L≒20%	77A Typ. △T≒40℃			10.0 MAX	5.0 MAX	12.0 MAX	2.5±0.2	2.7±0.2
TEST FREQ.	100KHz/1V			100KHz/1V								
1	0.104	0.124	0.375	0.097	35.4			9.83	4.98	11.67	2.53	2.73
2	0.100	0.128	0.370	0.095	36.0			9.82	4.96	11.66	2.53	2.75
3	0.101	0.125	0.369	0.095	35.4			9.85	4.96	11.70	2.50	2.71
4	0.098	0.125	0.370	0.094	35.0			9.83	4.97	11.69	2.52	2.72
5	0.100	0.124	0.370	0.095	35.9			9.82	4.98	11.65	2.51	2.71
6	0.103	0.124	0.372	0.096	36.3			9.81	4.97	11.67	2.53	2.68
7	0.104	0.125	0.368	0.097	35.8			9.84	4.96	11.66	2.52	2.74
8	0.102	0.126	0.374	0.096	36.5			9.84	4.98	11.68	2.50	2.70
9	0.100	0.126	0.378	0.096	36.2			9.82	4.99	11.67	2.51	2.75
10	0.100	0.125	0.371	0.095	35.9			9.85	4.98	11.65	2.52	2.73
AVG.	0.1012	0.1252	0.3717	0.0956	35.84			9.831	4.973	11.670	2.517	2.722
R	0.006	0.004	0.010	0.003	1.5			0.04	0.03	0.05	0.03	0.07

APPROVED BY	CHECKED BY	DRAWN BY
零件 2023/8/10 承認課	蔡 2023/8/10 柏良	刘 2023/8/10 科云