<SPECIFICATION>

SPEC.No. ASDIQ-SPE-121(00)
Date: Jun.18,2022

To :

CUSTOMER'S PRODUCT NAME

ASDI PRODUCT NAME:
SPI1045N-SERIES

RECEIPT CONFIRMATION

UNCONDITIONAL CONSENT	CONDITIONAL CONSENT

APPROVED	CHECKED

ASDI SIGNATURE

APPROVED	CHECKED	PREPARED
Xianglong Li	Liang Wang	Jiayin Cai

REV.	DATE	DESCRIPTION	APPROVED	CHECKED	PREPARED
00	Jun.18,2022	New release	Xianglong Li	Liang Wang	Jiayin Cai

CAUTION WHEN HANDLING

Before use the products, please read this specification.

CAUTION FOR SAFETY USING

When use the products, be careful to mentioned below for safety using.

CAUTION

*The product should be used within 12 monthes.
Focus on the storage conditions.
Solderability may become weak if it exceeds the period.
*Do not use and store the product in condition of gas corrosion
(Salt,Acid,Alkaline).
*The products must be preheated before soldering.
The operating temperature including self-generated heat must be within '- 40 ~ +125℃.
*Rework by soldering iron;Please keep the mentioned conditions in this specification.
*In case of insert P.C. Board on chassis, do not add mechanical stress to the product.
*Be careful to arrange of non-magnetic field type inductors.
The error may be caused by magnetic field coupling.
*In case handle the products, please use wrist strap for ground static discharge on human body.
The product keeps away from magnet or magnetized things.
*Do not use the product beyond the mentioned conditions in this specification.
*About an application
The products listed on this specification sheet are intended for use in general electronic equipment
(AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.
*The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property. Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below or for any other use exceeding the range or conditions set forth in this specification sheet.

1)Aerospace/Aviation equipment
2)Military equipment
3)Seabed equipment
4)Safety equipment
5)Medical equipment
6)Transportation control equipment
7)Power-generation control equipment which directly endanger human life
8)Atomic energy-related equipment
9)Other applications that are not considered general-purpose applications

If you intend to use the products in the following applications, please contact our sales office.
Transportation equipment (cars, electric trains, ships, etc.), Public information-processing equipment, Electric heating apparatus / burning equipment, Disaster prevention/crime prevention equipment
When using this product in general-purpose applications, you are kindly requested to take into consideration securing protection circuit/equipment or providing backup circuits, etc., to ensure higher safety.

1.INDEX

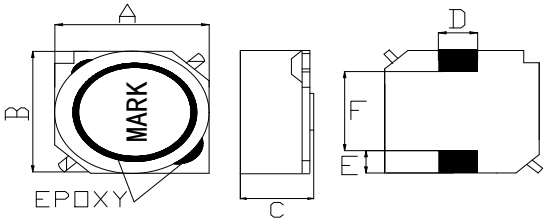
2.Manufacturing Location

China

(1)Features

1.This specification applies Low Profile Power Inductors.
2.100% Lead(Pb) & Halogen-Free and RoHS compliant.

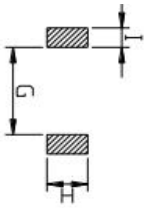
(2)Dimensions



UNIT:mm

Series	A	B	C	D	E	F
SPI1045N	10.1±0.3	10.1±0.3	4.8MAX	3.0REF	2.0REF	6.0REF

(3)Recommendend Land pattern



H(mm)	I(mm)	G(mm)
3.2 TYP	2.2TYP	5.8TYP

(4)Part Numbering

SPI	1045	N	-	100	M
A	B	C		D	E

A: Series
B: Dimension
C: Control S/N
D: Inductance 100=10μH
E: Inductance Tolerance M=±20%;

(5)Electrical Specifications

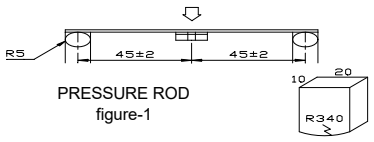
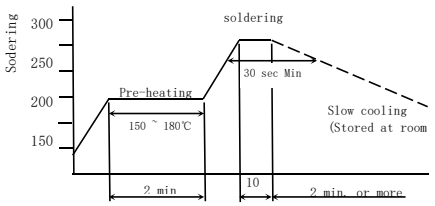
Table 1

ASDI Part Number	Inductance (μH)	Tolerance (%)	Test Frequency (Hz)	DCR (Ω) Max	I sat(A) L/L0:30% MAX	Irms(A) (The temperature rises to 40℃MAX)
SPI1045N-100M	10.00	±20%	1kHz/0.25V	60.00	3.00	2.80
SPI1045N-150M	15.00	±20%	1kHz/0.25V	47.2±20%	2.40	2.20
SPI1045N-151M	150.0	±20%	1kHz/0.25V	350±20%	0.79	0.81
SPI1045N-220M	22.00	±20%	1kHz/0.25V	0.095	2.10	2.00
SPI1045N-330M	33.00	±20%	1kHz/0.25V	0.140	1.70	1.60
SPI1045N-102M	1000	±20%	1kHz/0.25V	3.600	0.32	0.29

Note:

Isat：Based on inductance change (△L/L0：≦-35%) @ ambient temp. 25℃
Irms：Based on temperature rise (△T：40℃ typ.)

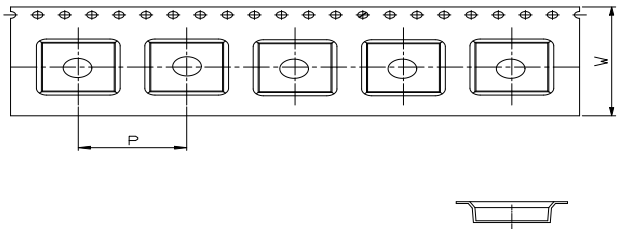
(6)Reliability Tests

No.	Test item	Performance	Test details
1	Substrate bending	△L/Lo≦±5% There shall be no mechanical damage or electrical damege.	The sample shall be soldered onto the printed circuit boardin figure 1 and a load applied unitil the figure in the arrowdirection is made approximately 3mm. (keep time 30 seconds) F(Pressurization)  PRESSURE ROD figure-1
2	Vibration	△L/Lo≦±5% There shall be no mechanical damage or electrical damege.	The sample shall be soldered onto the printed circuit board and when a vibration having an amplitude of 1.52mm and a frequency of from 10 to 55Hz/1 minute repeated should be applied to the 3 directions (X,Y,Z) for 2 hours each. (A total of 6 hours)
3	Solderability	New solder more than 90%.	Flux (rosin, isopropyl alcohol{JIS-K-1522}) shall be coated over the whole of the sample before hard, the sample shall then be preheated for about 2 minutes in a temperature of 130～150℃ and after it has been immersed to a depth 0.5mmbelow for 3±0.2 seconds fully in molten solder M705 witha temperature of 245±2℃. More than 90% of the electrode sections shall be couered with new solder smoothly when the sample is taken out of the solder bath.
4	Resistance to Soldering heat (reflow soldering)	There shall be no damage or problems.	Temperature profile of reflow soldering  The specimen shall be passed through the reflow oven with the condition shown in the above profile for 1 time. The specimen shall be stored at standard atmospheric conditions for 1 hour, after which the measurement shall be made.
5	Insulation resistance	There shall be no other damage or problems.	DC 100V voltage shall be applied across this sample of top surface and the terminal. The insulation resistance shall be more than 1×10^8 Ω.
6	Dielectric withstand voltage	There shall be no other damage or problems.	AC 100V voltage shall be applied for 1 minute acrosset the topsurface and the terminal of this sample
7	Temperature characteristics	△L/L20℃≦±10% 0～2000 ppm/℃	The test shall be performed after the sample has stabilized in an ambient temperature of - 40 to +125 ℃,and the value calculated based on the value applicable in a normal temperature and narmal humidity shall be △L/L 20℃≦± 10%.

No.	Test item	Performance	Test details
8	High temperature storage	△L/Lo≦±5% There shall be no mechanical damage.	The sample shall be left for 500 hours in an atmospere with a temperature of 125±2℃ and a normal humidity. Upon completion of the measurement shall be made after the sample has been left in a normal temperature and normal humidity for 1 hour.
9	Low temperature storage	△L/Lo≦±5% There shall be no mechanical damage.	The sample shall be left for 500 hours in an atmosphere with a temperature of -40±3℃. Upon completion of the test, the measurement shall be made after the sample has been left in a normal temperature and normal humidity for 1 hour.
10	Change of temperature	△L/Lo≦±5% There shall be no other damage of problems	The sample shall be subject to 5 continuos cycles, such as shown in the table 2 below and then it shall be subjected to standard stmospheric conditions for 1 hour, after which measurementshall be made. table 2 1: −40±3℃ (Themostat No.1), 10 min. 2: Standard atmospheric, 5 sec. or less, No.1→No.2 3: 125±2℃ (Themostat No.2), 30 min. 4: Standard atmospheric, 5 sec. or less, No.2→No.1
11	Moisuture storage	△L/Lo≦±5% There shall be no mechanical damage.	The sample shall be left for 500 hours in a temperature of 40±2℃ and a humidity(RH) of 90～95%. Upon completion of the test, the measurement shall be madeafter the sample has been left in a normal temperature andnormal humidity more than 1 hour.
Test conditions: The sample shall be reflow soldered onto the printed circuit board in every test.			

(7)Packaging Information

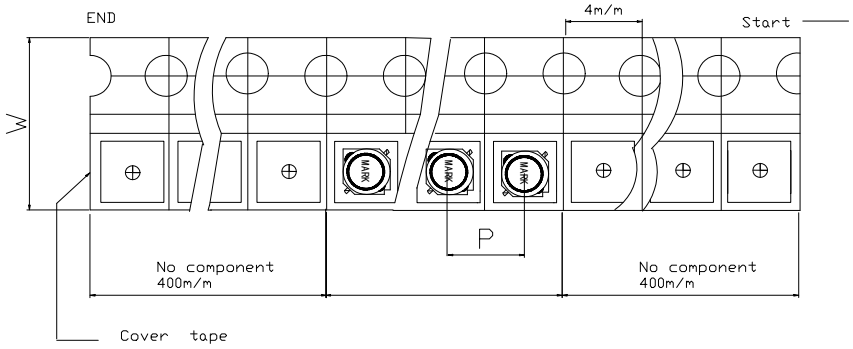
7-1,carrier tape dimensions(mm)



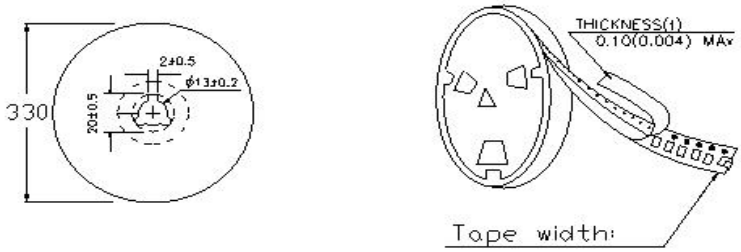
W	24
P	16

Note: After the tape is woven, the outermost layer of the reel is 400mmMIN, and the innermost layer is 400mmMIN.

7-2,Taping Dimensions



7-3,Reel Dimensions(mm)



7-4,Packaging Quantity

Type	Chip / Reel
SPI1045N-SERIES	500pcs/Reel

(8)Note

·Storage Conditions

To maintain the solderability of terminal electrodes:

1. ASDI products meet IPC/JEDEC J-STD-020D standard-MSL, level 1.
2. Temperature and humidity conditions: Temperature: 5 to 30deg.C, Humidity: 75% Max.
3. Recommended products should be used within 12 months form the time of delivery.
4. 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.