<SPECIFICATION>

SPEC.No. ASDIQ-SPE-107(00)
Date： Aug.27,2022

To :

CUSTOMER'S PRODUCT NAME

ASDI PRODUCT NAME:
SPUI32N-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	Aug.27,2022	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

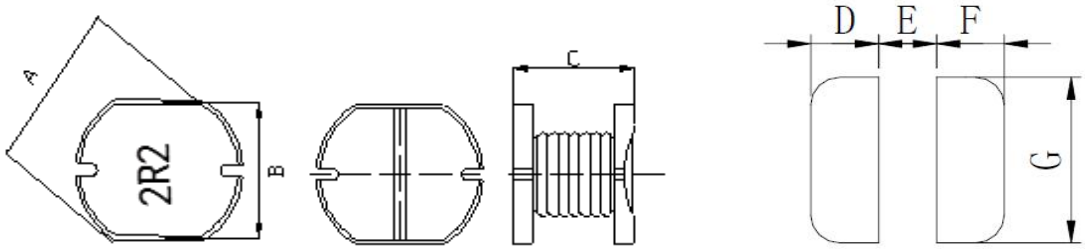
(1)Features

1.Small and Low profile inductor
2.It corresponds to high current.
3.Simple and Shield structure.
4.Available tape and reel for auto insertion.
5.100% Lead(Pb)-Free and RoHS compliant.

(2)Applications

-For small DC/DC converter(cellular phone,LCD/LED/OLED display, HDD, DSC etc)

(3)Dimensions



Series	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	G(mm)
SPUI32N	3.5±0.3	3.0±0.3	2.3MAX	1.25	1.0 REF	1.25 REF	3.2 REF

(4)Part Numbering

SPUI	32	N	-	2R2	M
A	B	C		D	E

A: Series
B: Dimension
C: Type
D: Inductance 2R2=2.20uH
E: Inductance Tolerance M=±20%
Marking interpretion R47=.47,100=10,101=100,102=1000
No magnetic shielding

(5)Electrical Specification

ASDI Part Number	Inductance	Rated current		DCR
	L0 (uH)±20%	Saturation current I sat (A)	Tempetature current I rms (A)	(mΩ)
	±10% @ 0 A			±20%. @25℃
SPUI32N-1R0M	1.00	3.50	2.98	35.0
SPUI32N-2R2M	2.20	2.35	2.55	51.0
SPUI32N-3R3M	3.30	1.9	2.10	75
SPUI32N-4R7M	4.70	1.60	1.70	104
SPUI32N-5R6M	5.60	1.40	1.55	120
SPUI32N-6R8M	6.80	1.25	1.35	140
SPUI32N-8R2M	8.20	1.20	0.90	180
SPUI32N-100M	10.0	1.02	1.15	215
SPUI32N-120M	12.0	0.97	90.00	250
SPUI32N-150M	15.0	0.80	0.85	290
SPUI32N-180M	18.0	0.75	0.55	360
SPUI32N-220M	22.0	0.70	0.75	392
SPUI32N-270M	27.0	0.58	0.52	450
SPUI32N-330M	33.0	0.61	0.67	530
SPUI32N-390M	39.0	0.53	0.45	640
SPUI32N-470M	47.0	0.52	0.55	750
SPUI32N-560M	56.0	0.38	0.33	900
SPUI32N-680M	68.0	0.41	0.43	1100
SPUI32N-820M	82.0	0.30	0.25	1380
SPUI32N-101K	100	0.33	0.36	1500
SPUI32N-121K	120	0.20	0.18	2000
SPUI32N-151K	150	0.18	0.15	2800
SPUI32N-221K	220	0.17	0.14	3600
SPUI32N-271K	270	0.15	0.12	4500
SPUI32N-331K	330	0.13	0.10	6000
SPUI32N-471K	470	0.10	0.08	7500
SPUI32N-681K	680	0.08	0.06	9000

Note:
1.Test frequency : Ls : 100KHz /0.25V.
2.All test data referenced to 25℃ ambient.
3.Testing Instrument : L/Q: HP4284A,CH11025,CH3302,CH1320 ,CH1320S LCR METER / Rdc:CH16502,Agilent33420A MICRO OHMMETER.
4.Heat Rated Current (Irms) will cause the coil temperature rise approximately Δt of 40℃ (keep 1min.).
5.Saturation Current (Isat) will cause L0 to drop 35% typical. (keep quickly).
6.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.

(6)Structure and Components

No.	Components	Material
1	Core	Ferrite core.
2	Wire	Polyester Wire or equivalent.
3	Ink	Halogen-free ketone

(7)Reliability Tests

No.	Test item	Performance	Test details
1	Operating temperature	-40~+125℃	
2	Storage Temperature	-10~+40℃,50~60%RH (Product without taping)	
Electrical Performance Test			
3	Inductance	Refer to standard electrical characteristics list.	HP4284A,CH11025,CH3302,CH1320,CH1320SLCR Meter.
4	DCR		CH16502,Agilent33420A Micro-Ohm Meter.
5	Saturation Current (Isat)	△L35% typical.	Saturation DC Current (Isat) will cause L0 to drop △L(%)(keep quickly).
6	Heat Rated Current (Irms)	Approximately △T≦40℃	Heat Rated Current (Irms) will cause the coil temperature rise △T(℃) without core loss. 1.Applied the allowed DC current(keep 1 min.). 2.Temperature measured by digital surface thermometer
Reliability Test			
7	High Temperature Exposure Test	Electric specifications should be satisfied	Temperature:125±2℃. Duration:1000±12hrs. Measured at room temperature after placing for 2 to 3hrs. (MIL-PRF-27)
8	Low Temperature Life Test		Temperature:-40±2℃. Duration:500±12hrs. Measured at room temperature after placing for 2 to 3hrs.
9	Biased Humidity Test		Humidity:85±3%RH. Temperature:85±2℃. Duration:1000±12hrs. Measured at room temperature after placing for 2 to 3hrs (AEC-Q200-REV C)
10	Thermal shock test		Condition for 1 cycle Step1:-40+0 / -2℃ 15±1 min. Step2:Room temperature within ≦0.2 min. Step3:+125+2 / -0℃ 15±1min. Number of cycles:300 Measured at room temperature after placing for 2 to 3 hrs. (AEC-Q200-REV C)
11	Vibration test		Frequency: 10-2000-10Hz for 20 min. Amplitude: Parts mounted within 2" from any secure point. Directions and times: X, Y, Z directions for 20 min. This cycle shall be performed 12 times in each of three mutually perpendicular directions(Total 12 hours). (MIL-STD-202 Method 204 D Test condition B)
12	Reflow test		Pre-heat：150±5℃ Duration：5 minutes Temperature：260±5℃，20~40 seconds (IPC/JEDEC J-STD-020C)
13	Solder test	Terminals should be covered by over 95% solder on visual inspection	After dip into flux，dip into solder 235±5℃，4±1seconds Flux 、solder for lead free (ANSI /J-STD-002C Method B)

(8)Soldering and Mounting

8-1,Soldering

Mildly activated rosin fluxes are preferred.
The minimum amount of solder can lead to damage from the stresses caused by the difference in coefficients of expansion between solder, chip and substrate.
ASDI 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.

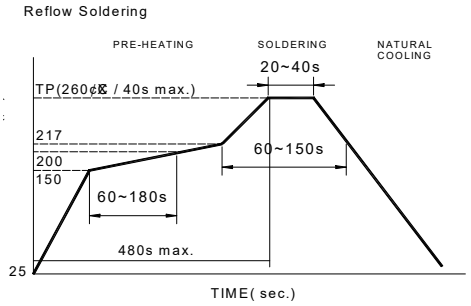
8-2,Solder re-flow

Recommended temperature profiles for re-flow soldering in Figure 1.

8-3,Soldering Iron

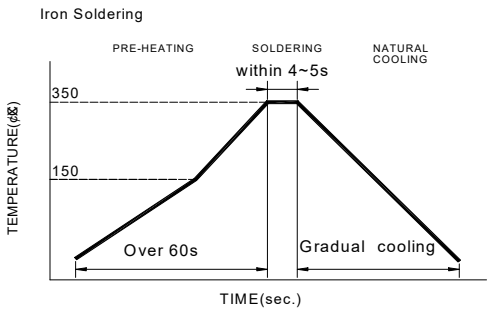
Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended.

·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.



Reflow times: 3 times

Fig.1

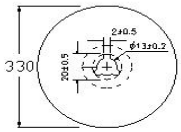


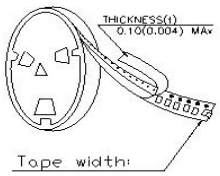
Iron Soldering times: 1 times

Fig.2

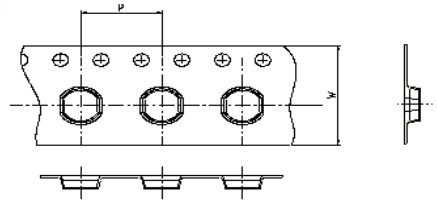
(9)Packaging Information

9-1,Reel Dimension



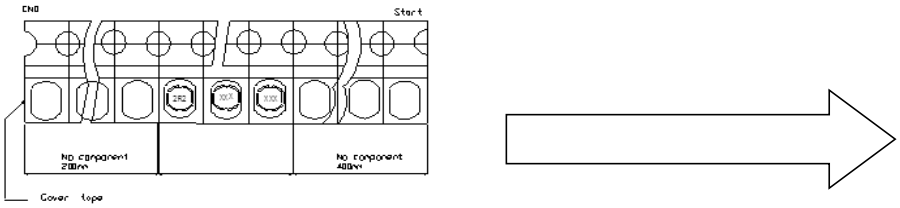


9-2,Tape Dimension



W	12
P	8

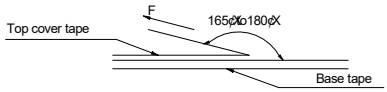
Unreeling Direction



9-3,Packaging Quantity

SPUI	32
Chip / Reel	3000

9-4,Tearing Off Force



The force for tearing off cover tape is 10 to 130 grams in the arrow direction under the following conditions(referenced ANSI/EIA-481-C-2003 of 4.11

Room Temp. (℃)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

(10)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.