

<SPECIFICATION>

SPEC.No. ASDIQ-SPE-113(08)

Date: Mar.12,2022

To :

CUSTOMER'S PRODUCT NAME

ASDI PRODUCT NAME:

AMPV252012NF-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.10,2020 | New release | Xianglong Li | Liang Wang | Jiayin Cai |
| 01 | Aug.25,2020 | Added new product name | Xianglong Li | Liang Wang | Jiayin Cai |
| 02 | Nov.03,2020 | Added new product name | Xianglong Li | Liang Wang | Jiayin Cai |
| 03 | Dec.03,2020 | Added new product name | Xianglong Li | Liang Wang | Jiayin Cai |
| 04 | Dec.18,2020 | Added new product name | Xianglong Li | Liang Wang | Jiayin Cai |
| 05 | Dec.23,2020 | Added new product name | Xianglong Li | Liang Wang | Jiayin Cai |
| 06 | May.20,2021 | Changed the side spot solder to the bottom solder | Xianglong Li | Liang Wang | Jiayin Cai |
| 07 | Jun.18,2021 | Changed the labeling of size B | Xianglong Li | Liang Wang | Jiayin Cai |
| 08 | Mar.12,2022 | Added new product name | Xianglong Li | Liang Wang | Jiayin Cai |
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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 '- 25 ~ +120°C

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

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.

Xiamen ASDI Electronics Co.,Ltd.

DWG.No.
ASDIQ-SPE-113(08)

ISSUE

CUSTOMER

ASDI PART No.
AMPV252012NF-SERIES

CUSTOMER'S DWG NO.

1.INDEX

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2.Manufacturing Location

China

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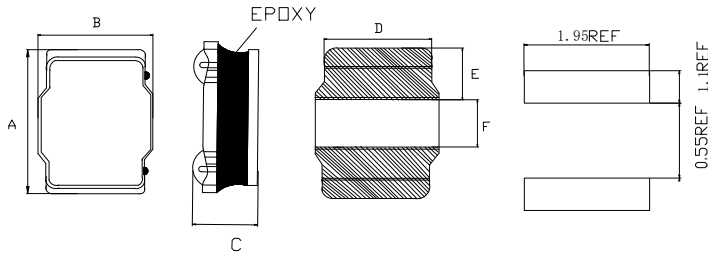
Xiamen ASDI Electronics Co.,Ltd.

(1)Features

1. This specification applies Low Profile Power Inductors.
2. 100% Lead(Pb) & Halogen-Free and RoHS compliant.



(2)Dimensions



Lateral spot welding

| Series | A(mm) | B(mm) | C(mm) | D(mm) | E(mm) | F(mm) |
|--------------|---------|---------|---------|---------|--------|--------|
| AMPV252012NF | 2.5±0.3 | 2.2±0.3 | 1.25MAX | 1.65REF | 0.8REF | 0.9REF |

(3)Part Numbering

AMPV 252012 NF - 2R2 M
 A B C D E

- A: Series
- B: Dimension
- C: Control S/N
- D: Inductance 2R2=2.2μH
- E: Inductance Tolerance M=±20%; N=±30%

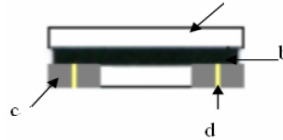
(4)Electrical Specifications

Table 1

| ASDI Part Number | Inductance (μH) | Tolerance (%) | Test Frequency | DCR (mΩ) MAX | Isat(A) Δ L/L0:35%MAX | Irms(A) (The temperature rises to 40°C MAX) |
|-------------------|-----------------|---------------|----------------|--------------|-----------------------|---|
| AMPV252012NF-R24N | 0.24 | ±30% | 1MHZ/0.1V | 35 | 6.50 | 4.50 |
| AMPV252012NF-R47N | 0.47 | ±30% | 1MHZ/0.1V | 48 | 4.90 | 3.00 |
| AMPV252012NF-1R0M | 1.0 | ±20% | 1MHZ/0.1V | 65 | 3.60 | 2.90 |
| AMPV252012NF-1R5M | 1.5 | ±20% | 1MHZ/0.1V | 92 | 2.90 | 2.60 |
| AMPV252012NF-2R2M | 2.2 | ±20% | 1MHZ/0.1V | 130 | 2.60 | 2.00 |
| AMPV252012NF-3R3M | 3.3 | ±20% | 1MHZ/0.1V | 180 | 1.70 | 1.60 |
| AMPV252012NF-4R7M | 4.7 | ±20% | 1MHZ/0.1V | 260 | 1.60 | 1.40 |
| AMPV252012NF-6R8M | 6.8 | ±20% | 1MHZ/0.1V | 380 | 1.15 | 1.10 |
| AMPV252012NF-100M | 10.0 | ±20% | 1MHZ/0.1V | 480 | 1.00 | 0.80 |

(5)Material List

| No. | Description | Specification |
|-----|-------------|----------------------|
| a. | Core | Ferrite N4 Core |
| b. | Coating | Epoxy |
| c. | Termination | Tin Pb Free |
| d. | Wire | Enameled Copper Wire |



(6)Reliability Tests

| No. | Test item | Performance | Test details |
|-----|---|--|--|
| 1 | Substrate bending | $\Delta L/L_0 \leq \pm 5\%$ There shall be no mechanical damage or electrical damage. | The sample shall be soldered onto the printed circuit board in figure 1 and a load applied until the figure in the arrow direction is made approximately 3mm.(keep time 30 seconds) F(Pressurization) |
| 2 | Vibration | $\Delta L/L_0 \leq \pm 5\%$ There shall be no mechanical damage or electrical damage. | 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°C and after it has been immersed to a depth 0.5mm below for 3±0.2 seconds fully in molten solder M705 with a temperature of 245±2 °C. More than 90% of the electrode sections shall be covered 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 <p>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.</p> |
| 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 $1 \times 10^8 \Omega$. |
| 6 | Dielectric withstand voltage | There shall be no other damage or problems. | AC 100V voltage shall be applied for 1 minute across the top surface and the terminal of this sample |
| 7 | Temperature characteristics | $\Delta L/L_{20^\circ C} \leq \pm 10\%$ 0~2000 ppm/°C | The test shall be performed after the sample has stabilized in an ambient temperature of - 40 to +125°C, and the value calculated based on the value applicable in a normal temperature and normal humidity shall be $\Delta L/L_{20^\circ C} \leq \pm 10\%$. |

| No. | Test item | Performance | Test details | | | | | | | | | | | | | | | |
|--|---|---|--|--|-------------|----------|---|---|---------|---|----------------------|---|---|---|---------|---|----------------------|---|
| 8 | High temperature storage | $\Delta L/L_0 \leq \pm 5\%$ There shall be no mechanical damage. | The sample shall be left for 500 hours in an atmosphere with a temperature of $125 \pm 2^\circ\text{C}$ 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 | $\Delta L/L_0 \leq \pm 5\%$ There shall be no mechanical damage. | The sample shall be left for 500 hours in an atmosphere with a temperature of $-40 \pm 3^\circ\text{C}$. 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 | $\Delta L/L_0 \leq \pm 5\%$ There shall be no other damage of problems | The sample shall be subject to 5 continuous cycles, such as shown in the table 2 below and then it shall be subjected to standard atmospheric conditions for 1 hour, after which measurement shall be made. <table border="1" style="margin-left: auto; margin-right: auto;"> <caption>table 2</caption> <thead> <tr> <th></th> <th>Temperature</th> <th>Duration</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>$-40 \pm 3^\circ\text{C}$ (Thermostat No. 1)</td> <td>10 min.</td> </tr> <tr> <td>2</td> <td>Standard atmospheric</td> <td>5 sec. or less No. 1 \rightarrow No. 2</td> </tr> <tr> <td>3</td> <td>$125 \pm 2^\circ\text{C}$ (Thermostat No. 2)</td> <td>30 min.</td> </tr> <tr> <td>4</td> <td>Standard atmospheric</td> <td>5 sec. or less No. 2 \rightarrow No. 1</td> </tr> </tbody> </table> | | Temperature | Duration | 1 | $-40 \pm 3^\circ\text{C}$ (Thermostat No. 1) | 10 min. | 2 | Standard atmospheric | 5 sec. or less No. 1 \rightarrow No. 2 | 3 | $125 \pm 2^\circ\text{C}$ (Thermostat No. 2) | 30 min. | 4 | Standard atmospheric | 5 sec. or less No. 2 \rightarrow No. 1 |
| | Temperature | Duration | | | | | | | | | | | | | | | | |
| 1 | $-40 \pm 3^\circ\text{C}$ (Thermostat No. 1) | 10 min. | | | | | | | | | | | | | | | | |
| 2 | Standard atmospheric | 5 sec. or less No. 1 \rightarrow No. 2 | | | | | | | | | | | | | | | | |
| 3 | $125 \pm 2^\circ\text{C}$ (Thermostat No. 2) | 30 min. | | | | | | | | | | | | | | | | |
| 4 | Standard atmospheric | 5 sec. or less No. 2 \rightarrow No. 1 | | | | | | | | | | | | | | | | |
| 11 | Moisture storage | $\Delta L/L_0 \leq \pm 5\%$ There shall be no mechanical damage. | The sample shall be left for 500 hours in a temperature of $40 \pm 2^\circ\text{C}$ and a humidity(RH) of 90~95%. Upon completion of the test, the measurement shall be made after the sample has been left in a normal temperature and normal humidity more than 1 hour. | | | | | | | | | | | | | | | |
| Test conditions: The sample shall be reflow soldered onto the printed circuit board in every test. | | | | | | | | | | | | | | | | | | |

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Xiamen ASDI Electronics Co.,Ltd.

(7)Soldering

7-1,Soldering

7-2,Recommended PC Board Pattern

Mildly activated rosin fluxes are preferred. ASDI terminations are suitable for all wave and re-flow soldering systems.

If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

7-2.1,Soldering re-flow:

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

7-2.2,Soldering Iron(Figure 2):

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°C
- Never contact the ceramic with the iron tip
- Use a 20 watt soldering iron with tip diameter of 1.0mm

- 355°C tip temperature (max)
- 1.0mm tip diameter (max)
- Limit soldering time to 4~5 sec.

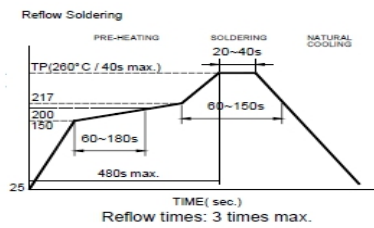


Fig.1

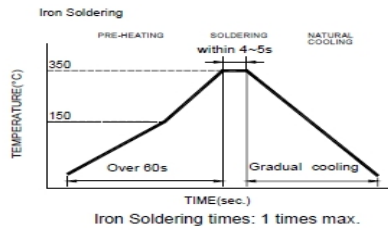
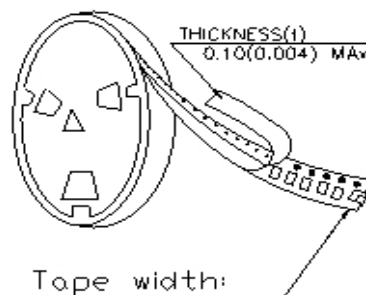
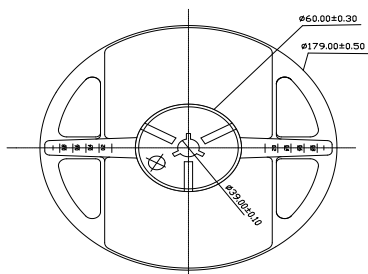


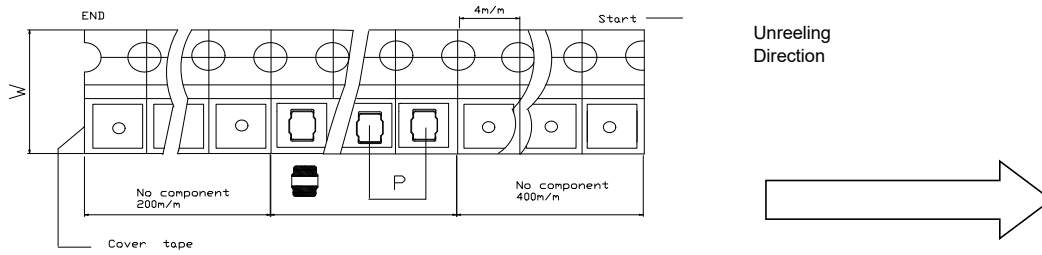
Fig.2

(8)Packaging Information

8-1,Reel Dimension

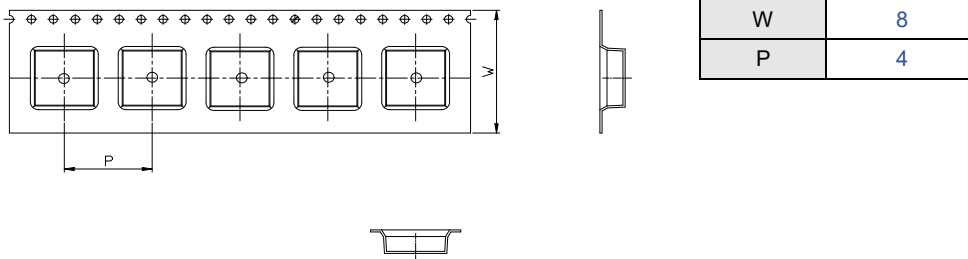


8-2, Tape Dimension



Note: After the tape is woven, the outermost layer of the reel is 400mmMIN, and the innermost layer is 200mmMIN.

8-3, Carrier tape dimensions (mm)



8-4, Packaging Quantity

| Type | Chip / Reel |
|-------------------|-------------|
| AMPV252012NF-2R2M | 2000 |

(9)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.

单击下面可查看定价，库存，交付和生命周期等信息

[>>ASDI](#)