

<SPECIFICATION>

SPEC.No. ASDIQ-SPE-109(00)

Date: Aug.02,2022

To :

CUSTOMER'S PRODUCT NAME

ASDI PRODUCT NAME:

ASCM2012F2SF-SERIES

RECEIPT CONFIRMATION

UNCONDITIONAL CONSENT

CONDITIONAL CONSENT

APPROVED	CHECKED

ASDI SIGNATURE

APPROVED	CHECKED	PREPARED
Xianglong Li	Liang Wang	Jiayin Cai



Xiamen ASDI Electronics Co.,Ltd.

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°C~+85°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 |
| 3)Seabed equipment | which directly endanger human life |
| 4)Safety equipment | 8)Atomic energy-related equipment |
| 5)Medical 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.

CUSTOMER

ASDI PART No.
ASCM2012F2SF-SERIES

CUSTOMER'S DWG NO.

1.INDEX

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2.Manufacturing Location

China

DWG.No.

ASDIQ-SPE-109(00)

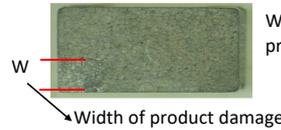
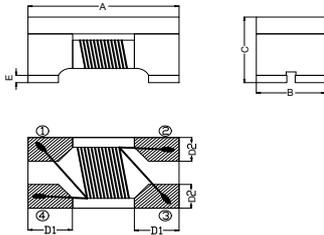
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(1)Features

High common mode impedance at high frequency effects excellent noise suppression performance. performance.
 ASCM2012F2SF series realizes small size and low profile. 2.0x1.2x1.2 mm.
 This component is compliant with RoHS legislation and also support lead-free soldering.



(2)Dimensions



When the damaged area is less than 3%, the product is included in the acceptable range

Series	A(mm)	B(mm)	C(mm)	D1(mm)	D2(mm)	E(mm)
ASCM2012	2.0±0.2	1.2±0.2	1.2±0.2	0.55±0.1	0.46±0.1	0.15±0.1

(3)Part Numbering

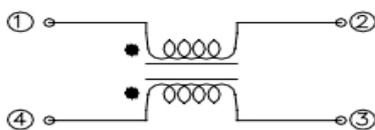
ASCM	2012	F	2	S	F	-	900	T	04
A	B	C	D	E	F		G	H	I

A: Series
 B: Dimension
 C: Material Ferrite
 D: Number of Lines 2=2 lines
 E: Type S=One Circuit Type , N=Unshielded
 F: Lead free type
 G: Impedance 900=90Ω
 H: Packaging T=Taping and Reel, B=Bulk
 I: Rated Current 04=400mA

(4)Electrical Schematics

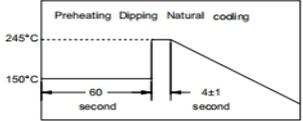
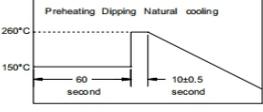
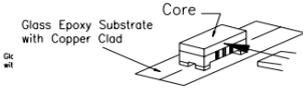
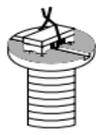
ASDI Part Number	Common mode Impedance (Ω)	Test Frequency (MHz)	DC Resistance (Ω) max.	Rated Current (mA)	Rated Volt. (Vdc)	Withstand Volt. (Vdc)	IR (Ω) min.
ASCM2012F2SF-900T04	90±25%	100	0.30	400	50	125	10M
ASCM2012F2SF-121T04	120±25%	100	0.30	400	50	125	10M
ASCM2012F2SF-161T03	160±25%	100	0.35	350	50	125	10M
ASCM2012F2SF-221T03	220±25%	100	0.40	300	50	125	10M

(5)Schematic Diagram



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(6)Reliability Tests

No.	Test item	Performance	Test details										
Electrical Characteristics Test													
1	Z(common mode)	Refer to standard electrical characteristics list.	HP-4291A+HP-16092A										
2	DCR		HP-4338B										
3	I.R.		Zentech 702A(Ultra High Resistance Meter)										
4	Rated Current		Applied the current to coils the impedance change should be less than ±25% to initial value and temperature rise should not be more than 30℃.										
5	Operating temperature	-40℃~+85℃											
6	Storage temperature	-40℃~+85℃											
7	Temperature Rise Test	30℃ max.(Δt)	1.Applied the allowed DC current. 2.Temperature measured by digital surface thermometer										
Mechanical Performance Test													
8	Solderability Test	More than 90% of terminal electrode should be covered with solder.	 <p>After fluxing, component shall be dipped in a melted solder bath at 245±5℃ for 5 seconds.</p>										
9	Solder Heat Resistance	1.Components should have not evidence of electrical and mechanical damage. 2. Impedance: within ±25% of initial value.	 <p>Preheat: 150℃ 60secs. Solder: Sn-Ag3-Cu0.5 Solder temperature: 260±5℃ Flux: rosin. Dip time: 10±0.5 secs.</p>										
10	Component Adhesion (Push test)	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Series No.</th> <th>F(Kg)</th> </tr> </thead> <tbody> <tr> <td>ASCM3216F2S</td> <td>0.8(min.)</td> </tr> <tr> <td>ASCM2012F2S</td> <td>0.5(min.)</td> </tr> <tr> <td>ASCM3216F2N</td> <td>0.8(min.)</td> </tr> <tr> <td>ASCM2012F2N</td> <td>0.5(min.)</td> </tr> </tbody> </table>	Series No.	F(Kg)	ASCM3216F2S	0.8(min.)	ASCM2012F2S	0.5(min.)	ASCM3216F2N	0.8(min.)	ASCM2012F2N	0.5(min.)	<p>The device should be reflow soldered (230±5℃ 5for 10sec.)to a tinned copper substrate.A dynameter force gauge should be applied the side of the component.The device must with-ST-F Kg without ailure of the termination attached to component.</p> 
Series No.	F(Kg)												
ASCM3216F2S	0.8(min.)												
ASCM2012F2S	0.5(min.)												
ASCM3216F2N	0.8(min.)												
ASCM2012F2N	0.5(min.)												
11	Component Adhesion (Pull test)	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Series No.</th> <th>F(Kg)</th> </tr> </thead> <tbody> <tr> <td>ASCM3216F2S</td> <td>0.8(min.)</td> </tr> <tr> <td>ASCM2012F2S</td> <td>0.5(min.)</td> </tr> <tr> <td>ASCM3216F2N</td> <td>0.8(min.)</td> </tr> <tr> <td>ASCM2012F2N</td> <td>0.5(min.)</td> </tr> </tbody> </table>	Series No.	F(Kg)	ASCM3216F2S	0.8(min.)	ASCM2012F2S	0.5(min.)	ASCM3216F2N	0.8(min.)	ASCM2012F2N	0.5(min.)	<p>1.Insert 10cm wire into the remaining open eye bend ,the ends of even wire lengths upward and wind together. 2.Terminal shall not be remarkably damaged.</p> 
Series No.	F(Kg)												
ASCM3216F2S	0.8(min.)												
ASCM2012F2S	0.5(min.)												
ASCM3216F2N	0.8(min.)												
ASCM2012F2N	0.5(min.)												
12	Random Vibration Test	Appearance: Cracking, shipping and any other defects harmful to the characteristics should not be allowed. Impedance: within ±30%	<p>Frequency: 10-55-10Hz for 1 min. Amplitude: 1.52mm Directions and times: X, Y, Z directions for 2 hours. A period of 2 hours in each of 3 mutually perpendicular directions (Total 6 hours).</p>										

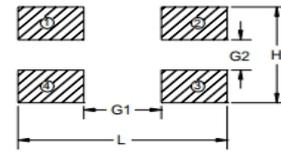
No.	Test item	Performance	Test details															
Reliability Test																		
13	High Temperature Life Test	1. Appearance: No damage. 2. Impedance: within $\pm 25\%$ of initial value. No disconnection or short circuit.	Temperature: $85 \pm 5^\circ\text{C}$ Time: $500 \pm 12\text{hr}$. Recovery: 4 to 24hrs of recovery under the standard condition after the removal from test chamber.															
14	Low Temperature Life Test		Temperature: $-40 \pm 5^\circ\text{C}$ Time: $500 \pm 12\text{hr}$. Recovery: 4 to 24hrs of recovery under the standard condition after the removal from test chamber.															
15	Thermal Shock		<table border="1"> <thead> <tr> <th>Step</th> <th>Temperature($^\circ\text{C}$)</th> <th>Times(min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40 ± 3</td> <td>30 ± 3</td> </tr> <tr> <td>2</td> <td>Room Temperature</td> <td>Within 3</td> </tr> <tr> <td>3</td> <td>85 ± 3</td> <td>30 ± 3</td> </tr> <tr> <td>4</td> <td>Room Temperature</td> <td>Within 3</td> </tr> </tbody> </table> Conditions of 1 cycle Total: 10 cycle Recovery: 4 to 24hrs of recovery under the standard condition after the removal from test chamber.	Step	Temperature($^\circ\text{C}$)	Times(min.)	1	-40 ± 3	30 ± 3	2	Room Temperature	Within 3	3	85 ± 3	30 ± 3	4	Room Temperature	Within 3
Step	Temperature($^\circ\text{C}$)		Times(min.)															
1	-40 ± 3		30 ± 3															
2	Room Temperature	Within 3																
3	85 ± 3	30 ± 3																
4	Room Temperature	Within 3																
16	Humidity Resistance	Temperature: $-40 \pm 5^\circ\text{C}$ Humidity: 90 to 95% Applied current: Rated current Time: $500 \pm 12\text{hr}$. Recovery: 4 to 24hrs of recovery under the standard condition after the removal from test chamber.																

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(7)Soldering and Mounting

7-1,Recommended PC Board Pattern

	ASCM2012F2S/F2N	ASCM3216F2S/F2N
L	2.60	3.70
H	1.25	1.60
G1	1.10	1.90
G2	0.45	0.40



PC board should be designed so that products are not sufficient under mechanical stress as warping the board.

Products shall be positioned in the sideways direction against the mechanical stress to prevent failure.

7-2,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 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,Lead Free Solder re-flow:

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

7-2.2,Solder Wave:

Wave soldering is perhaps the most rigorous of surface mount soldering processes due to the steep rise in temperature seen by the circuit when immersed in the molten solder wave. Due to the risk of thermal damage to products, wave soldering of large size products is discouraged. Recommended temperature profile for wave soldering is shown in Figure 2.

7-2.3,3 Soldering Iron(Figure 3):

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.

Note:

- 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
- 280k tip temperature (max)
- 1.0mm tip diameter (max)
- Limit soldering time to 3 sec.

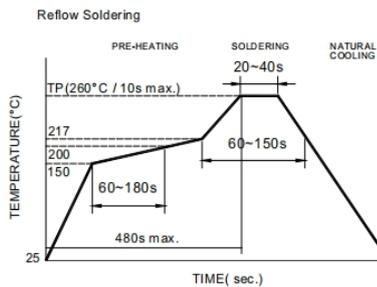


Figure 1. Re-flow Soldering(Lead Free)

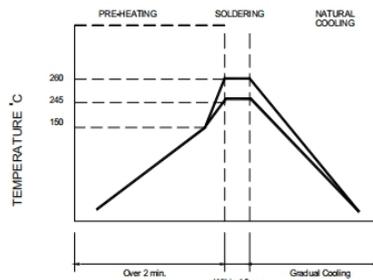


Figure 2. Wave Soldering

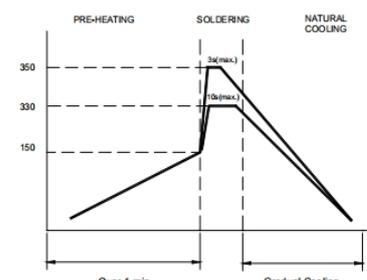
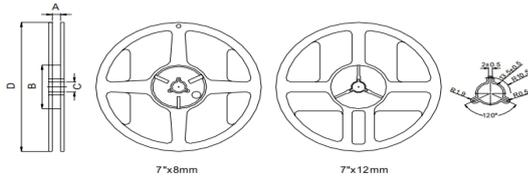


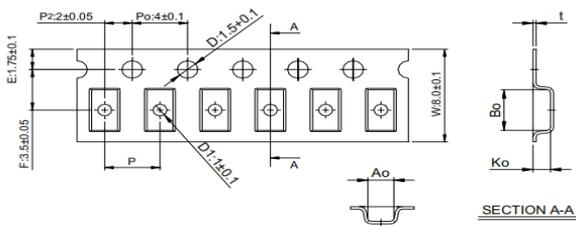
Figure 3. Hand Soldering

(8)Packaging Information
8-1,Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
7"x8mm	9.0±0.5	60±2.0	13.5±0.5	178±2.0

8-2,Tape Dimension

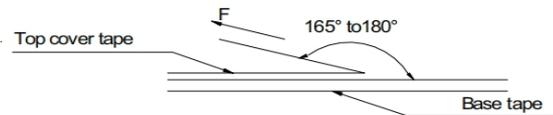


Series	size	Bo(mm)	Ao(mm)	Ko(mm)	P(mm)	t(mm)
ASCM2012F2S	201212	2.35±0.1	1.50±0.1	1.45±0.1	4.0±0.1	0.22±0.05
ASCM3216F2S	321620	3.50±0.1	1.88±0.1	2.10±0.1	4.0±0.1	0.22±0.05
ASCM2012F2N	201209	2.50±0.1	1.60±0.1	1.25±0.1	4.0±0.1	0.22±0.05
ASCM3216F2N	321615	3.50±0.1	1.88±0.1	1.80±0.1	4.0±0.1	0.22±0.05

8-3,Packaging Quantity

Chip size	Chip/Reel	Inner Box	Middle Box	Carton
ASCM2012F2S/F2N	2000/3000	10000/15000	50000/75000	100000/150000
ASCM3216F2S/F2N	2000	10000	50000	100000

8-4,Tearing Off Force



The force for tearing off cover tape is 15 to 60 grams in the arrow direction under the following conditions.

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

(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.