

<SPECIFICATION>

SPEC.No. ASDIQ-SPE-188(00)

Date: Oct.29,2022

To :

CUSTOMER'S PRODUCT NAME

ASDI PRODUCT NAME:

SIPM0615A-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 months.

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.

*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.

CUSTOMER

ASDI PART No.
SIPM0615A-SERIES

CUSTOMER'S DWG NO.

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2.Manufacturing Location

China

DWG.NO

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(1)Introduction

- ROHS, Halogen Free and REACH compliance
- High rated current
- 125°C maximum total temperature operation
- 7.3×6.8×1.5mm maximum surface mount package
- Low core loss
- Ultra low buzz noise due to molding construction

(2)Applications

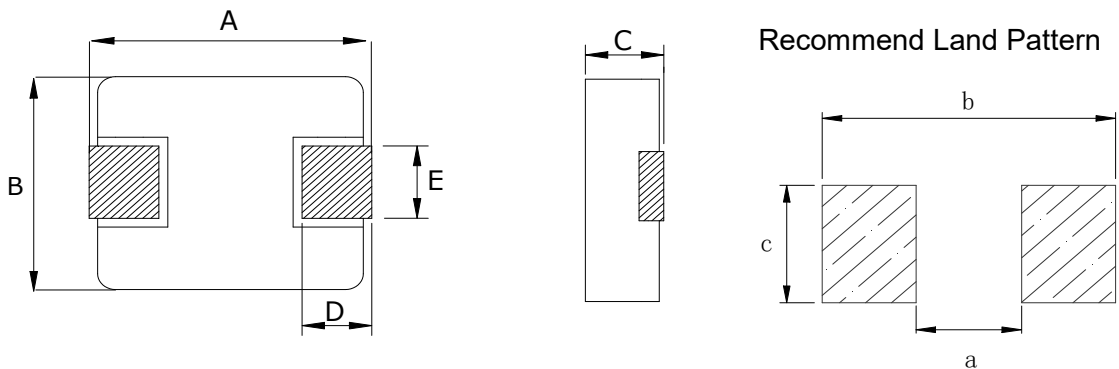
- Laptops and PCs
- Switch and servers
- Base stations
- DC/DC converters
- Battery powered devices
- SSD modules

(3)Product Identification

SIPM **0615** **A** - **6R8** **M**
① ② ③ ④ ⑤

- ①SIPM -Series name
- ②0615 -Dimension
- ③A -Material
- ④6R8 -Inductance Value (6R8 = 6.8μH)
- ⑤M -Inductance Tolerance (M= ± 20%)

(4)Dimensions-mm



A	B	C	D	E	a typ	b typ	c typ
7.0±0.3	6.6±0.2	1.3±0.2	1.6±0.3	3.0±0.3	3.7	8.4	3.5

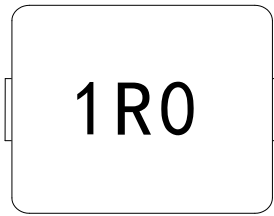
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(5)Marking

The inductor is marked with a 3-digit code

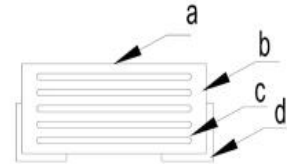
Nominal Inductance	
Example	Nominal Value
1R0	1.0 μ H
100	10 μ H
101	100 μ H

Note: Using Ink for marking



(6)Structure and Components

Symbol	Components	Material
a	Marking	Ink(black)
b	Core	Alloy Sponge Powder
c	Wire	Polyurethane copper wire
d	Terminal	Copper plated with Sn



(7)Specification

Part No.	Inductance	DC Resistance	Saturation Current	Heating Rating Current
	L0 (μH)	DCR (mΩ)	Isat (A)	Irms (A)
	±20 %, 100 kHz, 1V	MAX.	Typ (Max)	Typ (Max)
SIPM0615A-R47M	0.47	8.5	16.0	10.0
SIPM0615A-R56M	0.56	11	14.0	9.0
SIPM0615A-R68M	0.68	12	12.0	8.5
SIPM0615A-R82M	0.82	17	10.0	8.0
SIPM0615A-1R0M	1.0	21	9.0	6.0
SIPM0615A-2R2M	2.2	54	7.0	3.8
SIPM0615A-3R3M	3.3	63	5.5	3.5
SIPM0615A-4R7M	4.7	85	5.0	3.2
SIPM0615A-6R8M	6.8	135	4.0	2.5
SIPM0615A-100M	10.0	175	3.0	2.0

Notes

1. All test data is referenced to 25 °C ambient
2. Operating temperature range - 55 °C to + 125 °C
3. Irms (A):DC current (A) that will cause an approximate ΔT of 40 °C(reference ambient temperature is 25 °C)
4. Isat(A):DC current (A) that will cause L0 to drop approximately 30 %
5. The part temperature (ambient + temp rise) should not exceed 125 °C under worst case operating conditions.

Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions

all affect the part temperature. Part temperature should be verified in the end application.

(8)Reliability Tests

Mechanical Reliability		
Test item	Specification and Requirement	Test Method
Solderability	1. No case deformation 2. New solder coverage More than 95% or change in visual	1.Preheat: 155°C±5°C , 60S±2S 2.Tin: lead-free. 3.Temperature:240°C±5°C , flux3.0S±0.5S.
Mechanical shock	1. No case deformation or change in visual 2. $\Delta L/L_0 \leq \pm 10\%$	1. Acceleration: 100G 2. Pulse time: 6ms 3. 3 times in each positive and negative direction of 3 mutual perpendicular directions
Mechanical vibration	1. No case deformation or change in visual 2. $\Delta L/L_0 \leq \pm 10\%$	1. Reflow: 2times 2. Frequency: 10HZ~50HZ~10HZ, 20 Min/Cycles 3. Amplitude: 1.52 mm±10% 4. Directions: X,Y,Z 5. Time: 12 cycle / direction
Endurance Reliability		
Test item	Specification and Requirement	Test Method
Thermal Shock	Inductance change: Within $\pm 10\%$ Without distinct damage in visual	1. First -55°C for 30 minutes,last 125°C for 30 minutes as 1 cycle. Go through 1000 cycles. 2. Max transfer time is 3 minutes. 3. Measured at room temperature after placing for 24±2 hours
Humidity Resistance	Inductance change: Within $\pm 10\%$ Without distinct damage in visual	1.Reflow 2 times, 2.85°C±3°C,85%±3%RH,1000 hours 3.Measured at room temperature after placing for 24±2 hours
Low temperature storage	Inductance change: Within $\pm 10\%$ Without distinct damage in visual	Inductance change: Within $\pm 10\%$ Without distinct damage in visual 1. Temperature: -55 ± 2°C 2. Time: 1000 hours 3. Measured at room temperature after placing for 24±2 hours
High temperature storage	Inductance change: Within $\pm 10\%$ Without distinct damage in visual	1. Temperature: +125 ± 2°C 2. Time: 1000 hours 3. Measured at room temperature after placing for 24±2 hours

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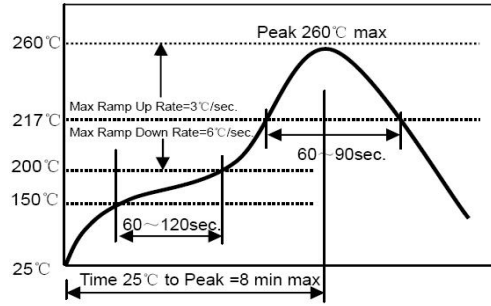
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(9) Recommended Soldering Technologies

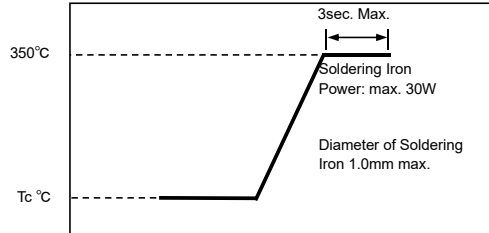
9-1, Re-flowing Profile

Preheat condition: 150 ~ 200°C / 60 ~ 120sec.
 Allowed time above 217°C: 60 ~ 90sec.
 Peak temp: 260°C
 Max time at Peak temp: 10 sec.
 Solder paste: Sn/3.0Ag/0.5Cu
 Allowed Reflow time: 2x max



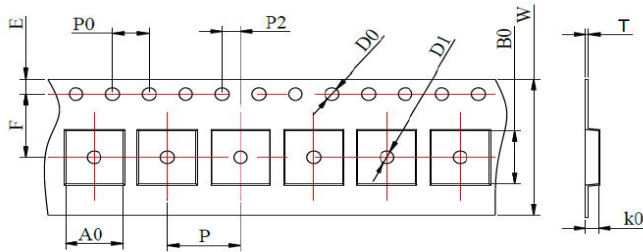
9-2, Iron Soldering Profile

Iron soldering power: Max. 30W
 Pre-heating: 150°C/60sec.
 Soldering Tip temperature: 350°C Max.
 Soldering time: 3sec. Max.
 Solder paste: Sn/3.0Ag/0.5Cu
 Max. 1 times for iron soldering



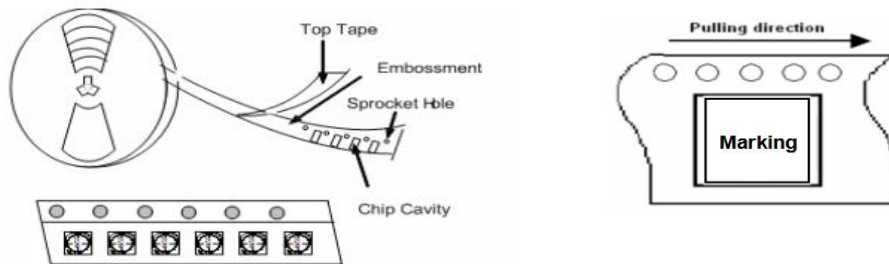
(10) Packaging Information

10-1, Tape Packaging Dimensions (Unit: mm)

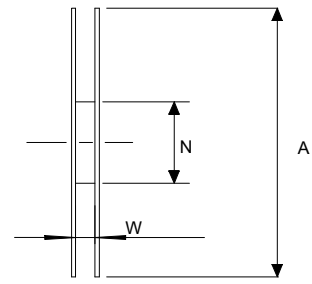
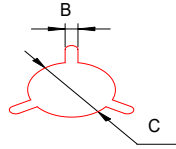
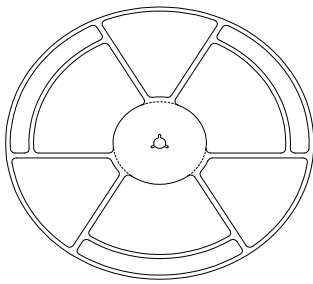


Tape dimensions (mm)												
W	P	P0	P2	D0	D1	T	A0	B0	K0	E	F	
16	12	4	2	1.5	1.5	0.35	6.9	7.5	1.7	1.75	7.5	
±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

Taping Drawings (UNIT:mm)



10-2, Reel Dimensions (Unit: mm)



A	W	N	B	C
330±2.0	16.8±0.2	97±0.5	2.2±0.5	13.0±0.2

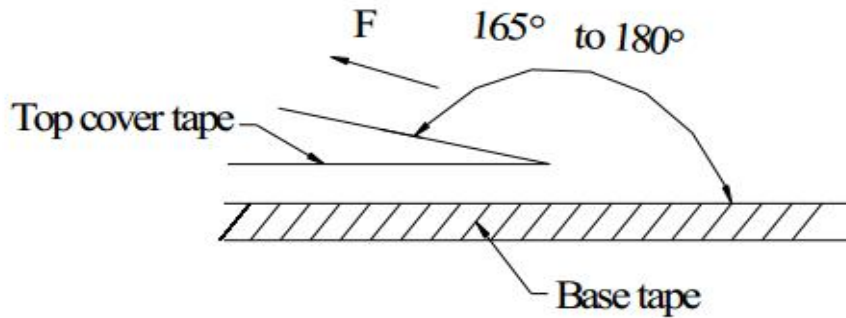
10-3, Packaging Quantity

Standard Quantity		
Reel	Inner box	Carton box
2000 pcs / reel	3Reel / box (6000 pcs)	4 Middle boxes, (24000 pcs)

10-4, Peel force of top cover tape

The peel speed shall be about 300mm/minute

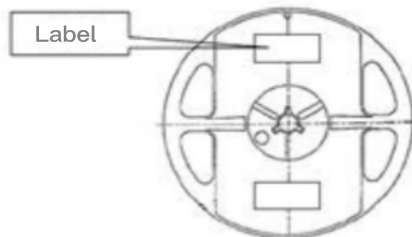
The peel force of top cover tape shall be between 0.1 to 1.3 N



8-5, Reel Label

Label on the reel

- Customer's part Number
- Lot Number
- Quantity
- date code

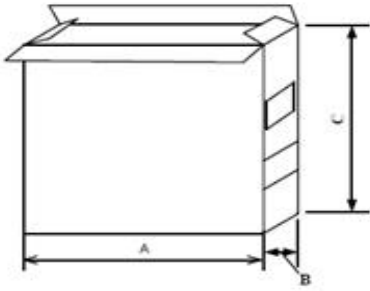


Shipping Label

- Customer's part Number
- Manufacturer's part Number
- Quantity
- date code

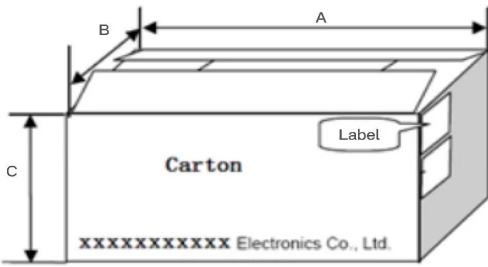
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10-6, Inner Box



Packaging Type	A(mm)	B(mm)	C(mm)
Inner box	335	70	340

10-7, Inner Box



Packing Type	A (mm)	B (mm)	C (mm)
Type	360	360	360