

<SPECIFICATION>

SPEC.No.

ASDIQ-SPE-248(00)

Date:

Sep.26,2023

To :

CUSTOMER'S PRODUCT NAME

ASDI PRODUCT NAME:

ASCM4532VF-201-2P

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~+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 | 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.

Xiamen ASDI Electronics Co.,Ltd.

DWG.No.
ASDIQ-SPE-248(00)

ISSUE

CUSTOMER

ASDI PART No.
ASCM4532VF-201-2P

CUSTOMER'S DWG NO.

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2.Manufacturing Location

China

DWG.No.

ASDIQ-SPE-248(00)

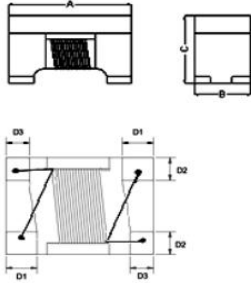
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Xiamen ASDI Electronics Co.,Ltd.

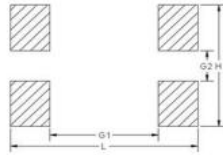
(1)Features

1. High common mode impedance at high frequency effects excellent noise suppression performance.
2. ACM4532VF series realizes small size and low profile 4.5x3.2x2.8 mm.
3. 100% Lead(Pb) & Halogen-Free and RoHS compliant.
4. High reliability -Reliability tests comply with AEC-Q200
5. Operating temperature -40~+125C (Including self - temperature rise)

(2)Dimensions



Recommended PC Board Pattern



A(mm)	B(mm)	C(mm)	D1(mm)	D2(mm)	D3(mm)	L(mm)	H(mm)	G1(mm)	G2(mm)
4.5±0.2	3.2±0.2	2.8±0.15	0.80±0.2	0.85±0.2	0.6±0.2	5.0	3.6	3.4	1.7

(3)Part Numbering

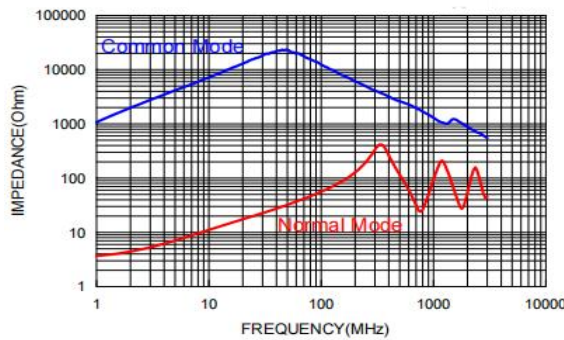
ASCM **4532** **V** **F** - **201** - **2** **P**
 A B C D E F G

- A: Series
- B: Dimension
- C: Vehicle
- D: Material Ferrite Core
- E: Inductance
- F: 2 line Number of lines
- G: Rated Current

(4)Electrical Specification

ASDI Part Number	Inductance (μH)+60/-20(μH)	DC Resistance	Rated Current (mA) max.	Rated Volt.	IR (Ω) min.
ASCM4532VF-201-2P	200	4.5	100	50	10M

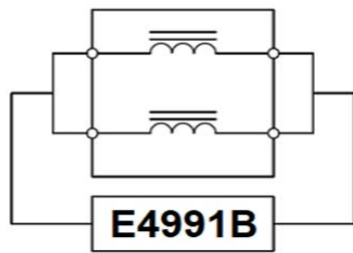
ASCM4532VF-201-2P



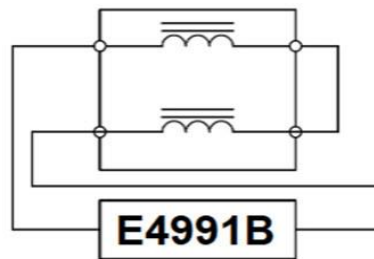
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(5) MEASURING CIRCUITS 2LINE

Common mode

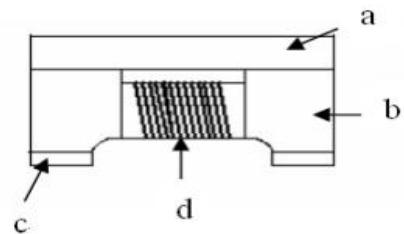


Differential mode

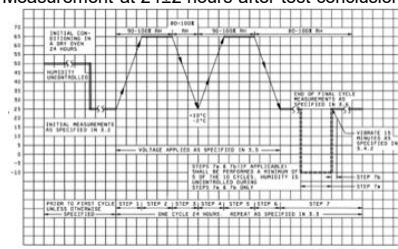


(6) Material List

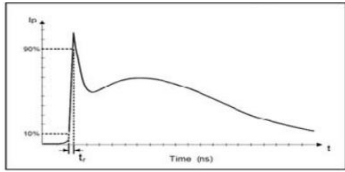
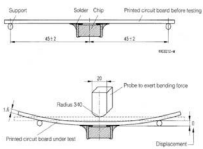
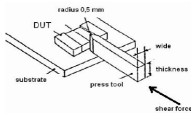
No.	Description	Specification
a.	Upper Plate	Ferrite
b.	Core	Ferrite Core
c.	Termination	Ag/Ni/Sn
d.	Wire	Enameled Copper Wire



(7)Reliability Tests

Item	Performance	Test Condition															
Operating temperature	-40~+125C (Including self - temperature rise)																
Storage temperature	-40~+125C (on board)																
Electrical Performance Test																	
Inductance	Refer to standard electrical characteristics list.	Keysight –E4980AL+ Keysight t -16334A															
DCR		Agilent-34420A Agilent-4338B															
I.R.		Chroma 19073															
Temperature Rise Test	Rated Current ΔT 40C Max	1 .Applied the allowed DC current . 2 .Temperature measured by digital surface thermometer															
Reliability Test																	
High Temperature Exposure(Storage) AEC-Q200	Appearance : No damage. Inductance : within±10% of initial value RDC : within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through reflow for 3 times . (IPC/JEDECJ-STD-020E Classification Reflow Profiles) Temperature : 125±2C Duration : 1000hrs Min. Measured at room temperature after placing for 24±4 hrs.															
Temperature Cycling AEC-Q200		Preconditioning: Run through reflow for 3 times. (IPC/JEDEC J-STD-020E Classification Reflow Profiles Condition for 1 cycle Step1 : -40±2C 30min Min. Step2 : 125±2C transition time 1min MAX. Step3 : 125±2C 30min Min. Step4 : Low temp. Transition time 1min MAX. Number of cycles : 1000 Measured at room temperature after placing for 24±4 hrs.															
Moisture Resistance (AEC-Q200)		t=24 hours/cycle. Note: Steps 7a & 7b not required. Unpowered. Measurement at 24±2 hours after test conclusion. 															
Biased Humidity (AEC-Q200)		Preconditioning: Run through reflow for 3 times. (IPC/JEDEC J-STD-020E Classification Reflow Profiles Humidity : 85±3%R.H, Temperature : 85C±2C Duration: 1000hrs Min. Measured at room temperature after placing for24±4hrs															
High Temperature Operational Life (AEC-Q200)		Preconditioning: Run through reflow for 3 times. (IPC/JEDEC J-STD-020E Classification Reflow Profiles Temperature : 125±2C Duration : 1000hrs Min. with 100% rated current. Measured at room temperature after placing for24±4hrs															
External Visual		Inspect device construction, marking and workmanship. Electrical Test not required.															
Physical Dimension		According to the product specification	According to the product specification size measurement														
Resistance to Solvents	Appearance : No damage.	Add aqueous wash chemical - OKEM clean or equivalent.															
Mechanical Shock	Appearance : No damage. Inductance : within±10% of initial value RDC : within ±15% of initial value and shall not exceed the specification value	<table border="1"> <thead> <tr> <th>Type</th> <th>Peak value (g/s)</th> <th>Normal duration (D) (ms)</th> <th>Wave form</th> <th>Velocity change (V)/ft/sec</th> </tr> </thead> <tbody> <tr> <td>SMD</td> <td>100</td> <td>6</td> <td>Half-sine</td> <td>12.3</td> </tr> <tr> <td>Lead</td> <td>100</td> <td>6</td> <td>Half-sine</td> <td>12.3</td> </tr> </tbody> </table> <p>3 shocks in each direction along 3 perpendicular axes. (18 shocks).</p>	Type	Peak value (g/s)	Normal duration (D) (ms)	Wave form	Velocity change (V)/ft/sec	SMD	100	6	Half-sine	12.3	Lead	100	6	Half-sine	12.3
Type	Peak value (g/s)	Normal duration (D) (ms)	Wave form	Velocity change (V)/ft/sec													
SMD	100	6	Half-sine	12.3													
Lead	100	6	Half-sine	12.3													

(7)Reliability Tests

Item	Performance	Test Condition								
Vibration	Appearance: No damage. Inductance: within±10% of initial value RDC: within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles) Oscillation Frequency : 10Hz~2kHz~10Hz for 20 minutes Equipment : Vibration checker Total Amplitude : 5g Testing Time : 12 hours (20 minutes, 12 cycles each of 3 orientations) Test condition: <table border="1"> <thead> <tr> <th>Temperature(°C)</th> <th>Time(s)</th> <th>Temperature ramp/immersion and emersion rate</th> <th>Number of heat cycles</th> </tr> </thead> <tbody> <tr> <td>260 ±5 (solder temp)</td> <td>10 ±1</td> <td>25mm/s ±6 mm/s</td> <td>1</td> </tr> </tbody> </table>	Temperature(°C)	Time(s)	Temperature ramp/immersion and emersion rate	Number of heat cycles	260 ±5 (solder temp)	10 ±1	25mm/s ±6 mm/s	1
Temperature(°C)	Time(s)	Temperature ramp/immersion and emersion rate	Number of heat cycles							
260 ±5 (solder temp)	10 ±1	25mm/s ±6 mm/s	1							
Resistance to Soldering Heat										
Thermal shock (AEC-Q200)		Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles) Condition for 1 cycle Step1: -40±2°C 15±1min Step2: 125±2°C within 20Sec. Step3: 125±2°C 15±1min Number of cycles: 300 Measured at room temperature after placing fo24±4hrs								
ESD	Appearance: No damage. Inductance: within±10% of initial value RDC: within ±15% of initial value and shall not exceed the specification value	 <p>Direct Contact and Air Discharge PASSIVE COMPONENT HBM ESD Discharge Waveform to a Coaxial Target Test method: AEC-Q200-002 Test mode: Contact Discharge Discharge level: 4 KV (Level: 2)</p>								
Solderability	More than 95% of the terminal electrode should be covered with solder	a. Method B, 4 hrs @155°C dry heat @235°C±5°C Testing Time :5 +0/-0.5 seconds b. Method D category 3. (8hours ± 15 min)@ 260°C±5°C Testing Time :30 +0/-0.5 seconds								
Electrical Characterization	Refer Specification for Approval	Summary to show Min, Max, Mean and Standard deviation.								
Flammability	Electrical Test not required.	V-0 or V-1 are acceptable.								
Board Flex	Appearance: No damage. Inductance: within±10% of initial value RDC: within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles) Place the 100mm X 40mm board into a fixture similar to the one shown in below Figure with the component facing down. The apparatus shall consist of mechanical means to apply a force which will bend the board (D) x = 2 mm minimum. The duration of the applied forces shall be 60 (+ 5) sec. The force is to be applied only once to the board. 								
Terminal Strength(SMD)	Appearance: No damage. Inductance: within±10% of initial value. RDC: within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles) With the component mounted on a PCB with the device to be tested, apply a 17.7 N (1.8 Kg) force to the side of a device being tested. This force shall be applied for 60 +1 seconds. Also the force shall be applied gradually as not to apply a shock to the component being tested. 								

(8)Soldering and Mounting

8-1,Recommended PC Board Pattern

Mildly activated rosin fluxes are preferred. 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.

8-1.1,Recommended PC Board Pattern

Recommended temperature profiles for lead free re-flow soldering in Figure 1. Table 1.1&1.2 (J-STD-020E)

8-1.2,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°C
- Never contact the ceramic with the iron tip
- Use a 20 watt soldering iron with tip diameter of 1.0mm
- 350°C tip temperature (max)
- 1.0mm tip diameter (max)
- Limit soldering time to 4~5 sec.

Fig.1 Soldering Reflow

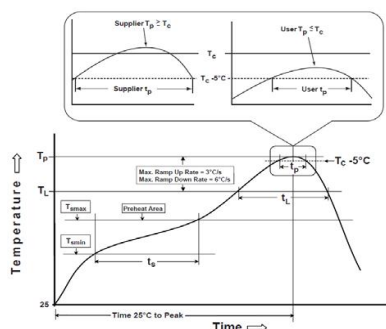


Fig.2 Iron soldering temperature profiles

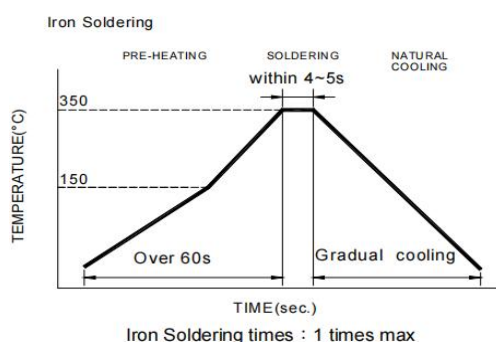


Table (1.1): Reflow Profiles

Profile Type:	Pb-Free Assembly
Preheat	
-Temperature Min(T_{smin})	150°C
-Temperature Max(T_{smax})	200°C
-Time(t_s)from(T_{smin} to T_{smax})	60-120seconds
Ramp-up rate(T_L to T_p)	3°C/second max.
Liquidus temperature(T_L)	217°C
Time(t_L)maintained above T_L	60-150 seconds
Classification temperature(T_c)	See Table (1.2)
Time(t_p) at $T_c - 5^\circ C$ (T_p should be equal to or less than T_c .)	< 30 seconds
Ramp-down rate(T_p to T_L)	6°C /second max.
Time 25°C to peak temperature	8 minutes max.

T_p : maximum peak package body temperature, T_c : the classification temperature. For user (customer) T_p should be equal to or less than T_c .

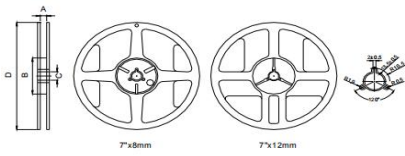
Table (1.2) Package Thickness/Volume and Classification Temperature (T_c)

	Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

Reflow is referred to standard IPC/JEDEC J-STD-020E

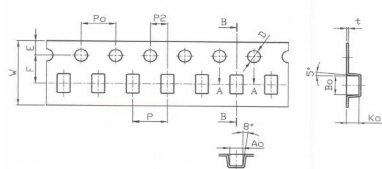
(9)Packaging Information

9-1,Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
7"x12mm	13.5±0.5	60.0±2.0	13.5±0.5	178.0±2.0

9-2,Tape Dimension

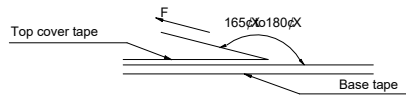


Type	P(mm)	Po(mm)	P2(mm)	Bo(mm)	Ao(mm)	Ko(mm)	D(mm)	E(mm)	F(mm)	W(mm)	t(mm)	D1(mm)
ASCM4532VF	8.00±0.10	4.00±0.10	2.00±0.05	4.90±0.10	3.60±0.10	3.00±0.10	1.50+0.10/-0.00	1.75±0.10	5.50±0.05	12.00±0.10	0.26±0.05	1.50±0.10

9-3,Packaging Quantity

Chip size	Chip/Reel	Inner Box	Middle Box	Carton
ASCM4532VF	500	2000	10000	20000

9-4,Tearing Off Force



The force for tearing off cover tape is 15 to 80 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

(10)Note

-Storage Conditions

To maintain the solderability of terminal electrodes:

- ASDI products meet IPC/JEDEC J-STD-020D standard-MSL, level 1.
- Temperature and humidity conditions: Temperature: 5 to 30deg.C, Humidity: 75% Max.
- Recommended products should be used within 12 months form the time of delivery.
- The packaging material should be kept where no chlorine or sulfur exists in the air.

-Transportation

- Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
- The use of tweezers or vacuum pick up is strongly recommended for individual components.
- 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](#)