

No. :EDW19401

Date: 2019/04/22

制品规格书

SPECIFICATIONS

VOC_s sensor

Model Name: A1DU5P2CP007B

| CUSTOMER | |
|----------|------|
| APPEOVED | DATA |
| | |

| VENDOR | | | |
|----------|-------|----------|------|
| APPROVAL | CHECK | PREPARED | DATA |
| | | | |

| Revise date | Revise mark | Revise item | Note | Check stamp | | | |
|-------------|-------------|-----------------|------|-------------|---------|---------|----------|
| | | | | Approval | Checked | Checked | Prepared |
| 2019.04.22 | | Initial edition | | | | | |
| | | | | | | | |

1. 适用范围和概要 /Scope and general description

敝社制品型号:A1DU5P2CP007B

本规格书适用于挥发性有机物检出用的 TVOCs sensor 模组。

This document is applicable for the air quality sensor module named: A1DU5P2CP007B

2. 额定值和特性 /Rating and property

性能规格 /Performance Specification 参考别纸-1 /Refer to Appendix 1

3. 信赖性 /Reliability

实验项目(条件·判定) /Test items(Conditions & Judgement)

参考别纸-2 /Refer to Appendix 2

4. 连接图 /Output connector pin assign

4-1 端子情报 /Connector information 参考别纸-3 /Refer to Appendix 3

4-2 标签规格/ Label Specifications

5. 外观·构造 /Appearance and structure

外形图 /Appearance figure 参考别纸-4 /Refer to Appendix 4

6. 出荷检查 /Shipment inspection

6-1 检查实施内容 /Test content

· 外形尺寸 /Dimensions

测定全宽/全长/全厚 The length, width and thickness will be checked.

· 外观 /Apperance

确认脏污/划伤/欠品、捺印等的外观异常。

The abnormal appearance such as dirt, scratches, shortage of parts will be checked.

6-2 检查基准 /Inspection criteria

| 检查项目/Inspection Items | 检查基准 /Level |
|------------------------------|-------------|
| 电气的特性/Electrical performance | 5PCS/LOT |
| 外形尺寸/ Dimensions | |
| 外观/Apperance | |

7. 使用和保管上的注意事项 /Important Notices for Use / Storage

7-1 由于规格书规定范围外的使用不能保证，绝对禁止。

Any usage not conforming to this document is not allowed, as we take no responsibility for any usage exceeding this specifications.

7-2 由于该制品是**高密度集成回路(ESD 耐性:2kV 人体模型)**搭载的电子部品，组装时，请注意静电气对策。

The ESD tolerance is 2kV(HBM), Please manage ESD when assembling.

请不要放置在灰尘多的场合。该制品请不要直接暴露在尘埃·盐分·气体(SO₂, H₂S, Cl₂, NH₃)·酸·强碱等中。

The units must not be used in the environment with heavy dust. This product is not allowed to exposure directly to dust, salinities, and the gas such as SO₂, H₂S, Cl₂ and NH₃,acid,alkali etc.

7-3 该制品作为**屋内設置**使用设计，设置在受潮气影响的场合(盐害地域)时，请采取**装配側不直接接受湿气和盐分影响**的对策。

This product is designed for the indoor installation. Please use it after considering measures that moisture and a direct salt do not influence on the set side when setting it up in the place (salt damage region) where the influence of the sea breeze is received.

7-4 不可接触**水滴、溶剂、油脂**等。

The units must not be applied with any dew, solvent or oil.

7-5 该制品，请不要放入**纸屑、金属片、虫**等。

Preventive actions for dusts and metal pieces and insects needed.

7-6 该制品作为**一般民生用**设计，请不要在**医疗、工业、车载等特殊用途**下使用。

This unit is designed for the consumer use only. Never use for those for medical application, for industrial application, for automobile application.

7-7 组装时，如果有该制品**起因**的问题，生产开始前，请反馈。

When the trouble according to the unit is occurred at the main system, please tell us before our mass product start.

7-8 **保障期限** /Period of gurantee

纳入后 1 年 /After delivery date : one year

8. 纳入形态/Package Specifications

8-1 托盘中制品收纳 Products stored in tray

① 制品收纳在**出荷托盘**。(10PCS*5=50PCS)

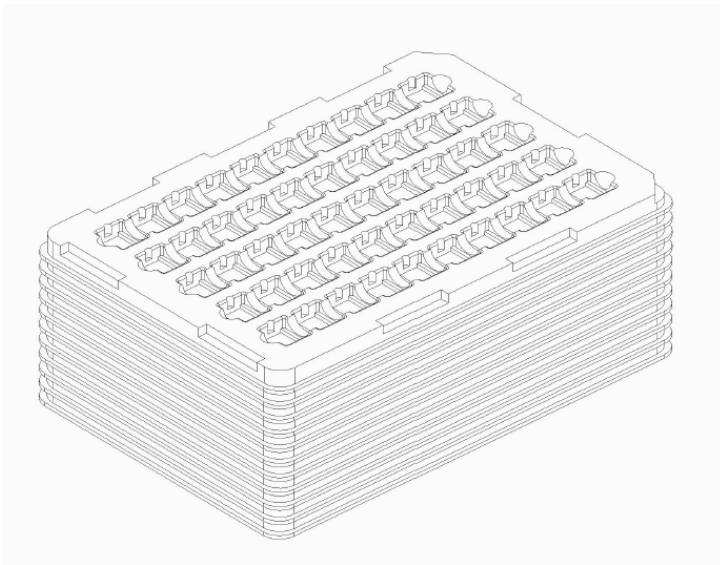
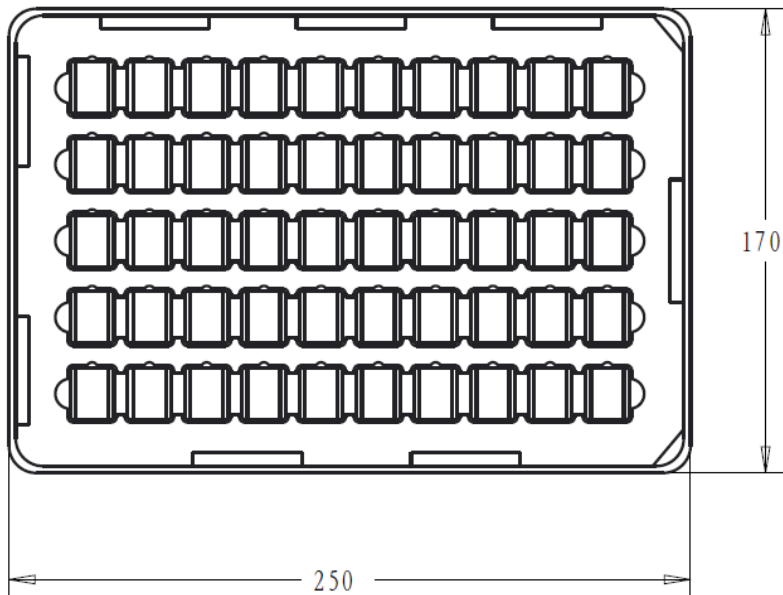
The products are stored in the shipment tray. (10PCS*5=50PCS)

② 制品收纳后的**托盘最大重叠 10 层**，**最上层放置空托盘**，总计 11 层。

The tray that stored the products is piled up by 10 pieces. An empty tray should be piled up to the highest rung.

③ 11层重叠后，中央部用拉伸胶带固定。

After 11 steps are piled up, the center is fixed with stretch film.



8-2 外装箱收纳/Storage in outer carton

- 制品最大收纳数：500PCS * 1 =500PCS

One packing storage in one carton: the maximum No. of storage products is 500PCS * 1 =500PCS

- 有缝隙时，纸板材料等缓冲材料插入缝隙内，防止产品移动。

The buffer material of the cardboard material etc. is stuffs into the gap, and the products is prevented from moving.

- ③ 不足**最大数量**时，装入缓冲材料。

buffer material is packed when not coming up to maximum quantities.

- ④ **外装箱**上记入**敝社名**(SHARP)、**制品型号**、**数量**。

The factory name (SHARP), parts No., and storage No. should be marked on the carton.

- ⑤ **注意保管环境/Storage Enviroment**

请在适合的**温度·湿度**(-40~85°C、5~95%RH)下保管。另外，请避免接触氯和**腐蚀性**的气体。保管在不合适的环境下，会影响**制品特性**。

Products should be stored at an appropriate temperature and humidity (-25~70°C、5~95%RH).Keep products away from chlorine and corrosive gas. The sensor might be damaged when straged in improper condition or excluding this guarantee condition.

9. 文书的优位顺序

该**规格书**和其它**契约文书**等的记载事项由矛盾时，该**规格书**优先。

This specifications must be treated with the highest priority in the event of any contradictions, conflicts with the content of other documents.

10. 其它/Others

- (1) 对**规格书**有疑义时，双方本着解决问题的诚意，双方协议进行该**规格书**的**改定**。

If any doubt has been seen in this specifications, both parties will make the best efforts to resolve the problem in good faith, and the revisions should be made through the mutual discussion by both parties.

- (2) 为了**制品改良**等，该**制品**的**规格·材料·制造工程**以及**管理系统**发生**变更**时，需要**事前**添付品质信赖性确认数据，向客户进行文书申请。

We do not change any part of the specification without a previous notice.

- (3) 该**制品**或**组品·部品**以及**制造工程**上，不含有任何**臭氧破坏物质**

[规定对象物质：**CFC's·HCFC class 1·Halon·四氯化碳·1.1.1-三氯乙烷**]。

Any ozone depleting substances (CFC's, HCFC class 1, Halon, Carbon tetrachloride,1.1.1-trichloroetahane) have not been used in the Units.

- (4) 该**制品**不包含含有**四氯化物**的**电解电容器**。

The unit does not contain the electrolytic capacitor which contains. tetrachloride compound.

- (5) 该**制品**不含有**特定溴化难燃剂**。

Bromine unflammability have not been used in the Units.

- (6) **生产场所(工场) / Manufacturing sites** ·

无锡夏普电子元器件有限公司 (WUXI SHARP ELECTRONIC COMPONENTS CO.,LTD)

中国江苏省无锡市高新技术产业开发区岷山路 60 号 C 地块 .

(7) 工业产权/Industrial property

该制品相关的工业产权问题发生时，双方负责任的方式进行解决问题。

In case that there might happen any troubles about industrial property of the units, both parties will solve the troubles with responsibility.

(8) 出口贸易管制(该非判定)

Exportation trade control(corresponding uncorresponding determination)

別表第1、1~15项: 非该当/Appended table 1,section1~15: uncorresponding

该当项2-36 该非判定結果: 非该当)(corresponding section 2-36 judgment uncorresponding)

別表第1、16项 :该当(HS85)Appended table 1, section 16: corresponding (DC power supply unit)

(9) 该制品 RoHS 对应品 /This product is a RoHS correspondence article

(10) 无卤素对应 /About the halogen free correspondence

对应 Correspondence

(11) 该规格书的英·中文的解释不同时，中文(汉语)优先

We shall give priority to the Chinese sentence, when any difference sharpened to the interpretation of English/Chinese sentence.

2. 规格和特性 /Rating and property

别纸-1

性能规格 /Performance Specification

根据下表。无指定时的条件：Ta=25℃，Vcc=3.3V。

Default test condition: Ta=25℃，Vcc=3.3V。

| 项目 | 说明 |
|------|------------------------|
| 感测原理 | MEMS 金属氧化物半导体传感器 |
| 感测范围 | 0-9999 ppb HCHO 相对等效值 |
| | 0-9999 ppb TVOC 相对等效值 |
| 预热时间 | 3 分钟 |
| 通信协议 | I ² C, UART |
| 校准方式 | 智能自动基线校准 |
| | 基准值可重置 |

① 电源要求

| 参数 | 规格 |
|--------|----------------------------|
| 电压 | 3.3V±0.1V, max.20mV ripple |
| 消费功率 | Max.66mW@3.3VDC(20mA) |
| 测定时间间隔 | 1Sec. |

② UART串口通讯

| 参数 | 规格 |
|------|--|
| 波特率 | 9600 bits/s |
| 数据位 | 8 |
| 校验位 | 无 |
| 停止位 | 1 |
| 通讯协议 | 1, 主机发送 0xFF 61 02 01 9C 获取 11 字节数据包 2, 主机发送 0xFF 52 01 01 AC 将当前测量值置为基准值 3, 主机发送 0xFF 67 01 01 97 串口开始每秒一次自动发送数据 4, 主机发送 0xFF 68 02 02 94 串口停止每秒一次自动发送数据 |

③ PC总线通讯

| | |
|------|--|
| 参数 | 规格 |
| 通讯速率 | Standard Mode: 100kbits/s |
| 模块地址 | 0xA2 (7位地址模式0x51左移) |
| 模块输出 | 通过读操作获取11字节数据包 |
| 基准重置 | 通过写操作0xFF 0x52 0x01 0x01 0xAC (5字节) 将当前测量值置为基准值 |

④ 数据包解析

| 数据包 | 名称 | 描述 |
|-----|------------|---|
| 0 | 包头 | 0xFF |
| 1-2 | HCHO(ppb) | Date[1]*2 ⁸ + Date[2] |
| 3 | 状态位 | 0x00: OK 0x01: Heating 0x02: Not Ready 0x03: Error |
| 4-7 | 敏感电阻 | Date[3]*2 ²⁴ + Date[4]*2 ¹⁶ + Date[5]*2 ⁸ +Data[6] |
| 8-9 | TVOC (ppb) | Date[7]*2 ⁸ + Date[8] |
| 10 | 校验位 | ~ (sum(D[1]:D[9]))+1 (取后8位) |

3. 信頼性 /Reliability

3-1 高温保管/ High temperature storage

周围温度 85℃，500小时放置后、常温下2小时放置后，外观以及电气特性无异常。

The appearance and an electrical characteristic not having abnormality after leaving at normal temperature for 2 hours after leaving in the ambient temperature 70℃, 500 hours.

3-2 低温保管/ Low temperature storage

周围温度 -40℃，500小时放置后、常温下2小时放置后，外观以及电气特性无异常。

The appearance and an electrical characteristic not having abnormality after leaving at normal temperature for 2 hours after leaving in the ambient temperature -25℃, 500 hours.

3-3 高温高湿保管/ High temperature high humidity storage

周围温度60℃，湿度90%Rh 500小时放置后、高温槽中取出，充分干燥后（无結露）进行测定，满足外观以及电气特性。

After leaving the unit in temperature 40℃ humidity 90%Rh for 500 hours. The unit must be no abnormal status must be observed about its appearance and electrical characteristic.

3-4 高温连续动作/ High temperature operation

周围温度60℃的高温槽中500小时连续动作后，高温槽中取出，充分干燥后进行测定，满足外观以及电气特性。

After operating the unit in temperature 60℃ with the condition for 500 hours. The unit must be no abnormal status must be observed about its appearance and electrical characteristic.

3-5 热冲击试验/ Thermal shock test

-40℃（0.5小时），85℃（0.5小时）、上下降时间（30分）、计2小时，作为一个1周期，进行100回重复，满足外观以及电气特性。

After leaving the unit under the following ambient temperature sequence, -40℃（0.5hour）85℃（0.5hour）slope（30minutes）as one cycle, for 100 cycles. The unit must qualify no abnormal status must be observed about its appearance and electrical property.

3-6 落下试验/ Shock test

从30cm的高度落到木板上，3回落下。

Falling from 30cm height on a wooden board for 3 times.

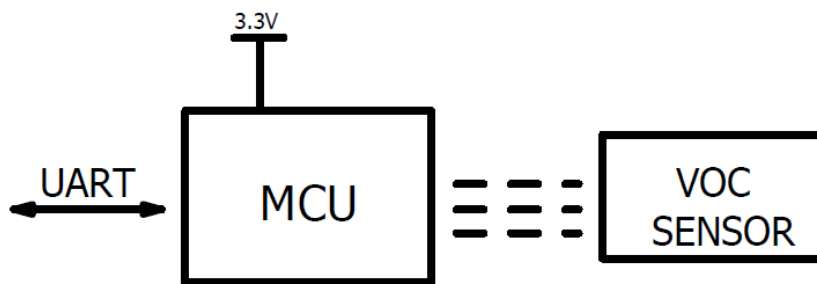
4. 连接图/ Output connector pin assign

别纸-3

4-1 端子情报 /Connector information

| 端子编号 | 标识 | 机能 |
|---------|------|----------|
| Pin No. | Ref. | Function |
| P1 | VDD | 电源电压 |
| P2 | SCL | 时钟信号线 |
| P3 | SDA | 数据信号线 |
| P4 | RX | 接收数据线 |
| P5 | TX | 发送数据线 |
| P6 | GND | 接地 |

4-2 模块图/ Block Diagram



4-3 标签规格/ Label Specifications

【基板印字规格/ Mark Specifications】

LOT生产日管理

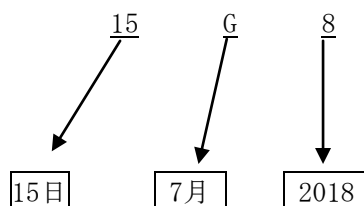
dd M Y

dd=日期, M=月, Y=西历, 年的末位

(A、B、C、D、E、F、G、H、J、K、L、M)

1、2、3、4、5、6、7、8、9、10、11、12 月

例)



5. 外观·构造/Appearance and structure

外形图 /Drawing

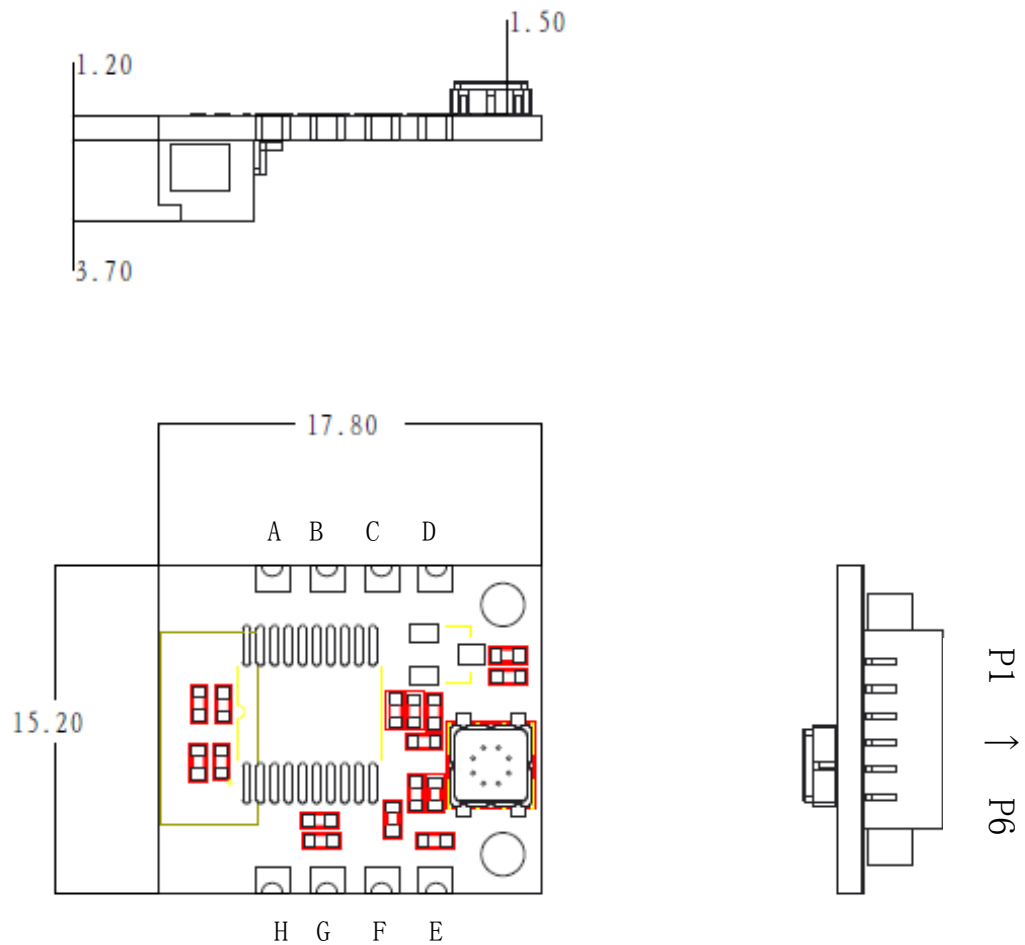
别纸-4

单位: mm

Pitch: 1.25mm

定位孔: $\phi 2.0\text{mm}$

无尺寸公差: 0.5mm



A: UART_TX B: +3.3V
 C: NA D: SDA
 E: GND F: SCL
 G: NA H: UART-RX
 Pitch: 2.54mm