

| Typical Products List |  |
|-----------------------|--|
| ◆                     | Integrated Isolated DC/DC converter        |
| ◆                     | Isolation voltage: 2500VDC                 |
| ◆                     | Operating temperature range: -40°C ~ +85°C |
| ◆                     | High speed data rate: 1Mbps                |
| ◆                     | Bus protection                             |
| ◆                     | Connect up to 110 nodes on one bus         |



**Test Condition:** Unless otherwise specified, data in the datasheet should be tested under the conditions of inputting nominal voltage, pure resistance rated load and Ta=25°C.

**Application Field**

Single High Rate H Type CAN isolation transceiver RSCAN-3V3HSA/ RSCAN-05HSA series are CAN bus transceiver module with integrated power isolation power, signal isolation chip and CAN transceiver chip. The main function is to convert logic level to CAN bus different level, to achieve signal isolation. The product is with constant-voltage source isolation power. It can achieve 2500VDC electrical isolation and high ESD protection function. Products can easily embedded in the user equipment, so that equipment can easily achieve CAN bus network connectivity.

**Product List**

| Part No      | Input Voltage Range(VDC) |
|--------------|--------------------------|
| RSCAN-3V3HSA | 3.15V-3.45V              |
| RSCAN-05HSA  | 4.75V-5.25V              |

**Electrical Character**

|                           |                             |  |
|---------------------------|-----------------------------|--|
| Standby Power Consumption | <0.5 W                      |  |
| Standby Static Current    | RSCAN-3V3HSA                | ≤40mA  |
|                           | RSCAN-05HSA                 | ≤30mA  |
| Send Current              | RSCAN-3V3HSA                | ≤100mA   |
|                           | RSCAN-05HSA                 | ≤80mA  |
| Input Specification       | Serial Interface            | Compatible with the CAN control port of +5V and +3.3V                                |
|                           | Pin Current                 | ITXD≤2mA; IRXD≤2mA   |
| Output Specification      | CAN Bus Interface           | Meet ISO-11898 standard, twisted-pair output   |
|                           | Bus Pin Maximum DC Voltage、 | -58V~+58V  |
|                           | Bus Protection              | Over-voltage bus protected, thermally protected and high voltage transient protected |

**Transmission Specifications**

|                   |                   |             |        |      |      |      |      |
|-------------------|-------------------|-------------|--------|------|------|------|------|
| Transmission rate | 1Mbps Max         |             |        |      |      |      |      |
| Number of Nodes   | 110 nodes (Mini.) |             |        |      |      |      |      |
|                   | Pin               | Logic Level | Symbol | Min. | Typ. | Max. | Unit |

|              |     |            |     |         |     |     |     |
|--------------|-----|------------|-----|---------|-----|-----|-----|
| RSCAN-3V3HSA | TXD | High-level | VIH | 0.7*Vcc | -   | 3.6 | Vdc |
|              |     | Low-level  | VIL | 0       | -   | 0.8 |     |
|              | RXD | High-level | VOH | Vcc-0.4 | 3.1 | -   |     |
|              |     | Low-level  | VOL | 0       | 0.2 | 0.4 |     |
| RSCAN-05HSA  | TXD | High-level | VIH | 0.7*Vcc | -   | 5.5 | Vdc |
|              |     | Low-level  | VIL | 0       | -   | 0.8 |     |
|              | RXD | High-level | VOH | Vcc-0.4 | 4.8 | -   |     |
|              |     | Low-level  | VOL | 0       | 0.2 | 0.4 |     |

**General Specifications**

| Item                                    | Operating Conditions                                | Value  |
|---|---|--|
| Electric Isolation                      |   | Two-terminal isolation(input and output are mutually isolated)                                   |
| Isolation Voltage                       | Leak current<0.5mA,<br>humidity<95%<br>Test for 60S | 2500Vdc  |
| Operating Humidity                      |   | -40℃ to +85℃   |
| Transportation and Shortage Temperature |   | -55℃ to +105℃  |
| Operating Humidity                      |   | 10% - 90%  |
| Max.Operating Temperature for Casing    |   | 25℃ (Typ)  |
| Safety Class                            |   | EN60950  |
| Safety Certification                    |   | EN60950  |
| Safety Class                            |   | CLASS III  |
| Application Environment                 |   | The presence of dust, fierce vibration, impulsion and corrosive gas may cause damage to product. |

**EMC Characteristics**

| Total Items | Sub Items | Test Standard | Class   |   |
|-------------|-----------|---------------|---|---|
| EM<br>C     | EMI       | CE            | CISPR22/EN55032 CLASS A (See recommended Photo ②)               |   |
|             |           | RE            | CISPR22/EN55032 CLASS A (See recommended Photo ②)               |   |
|             | EMS       | ESD           | IEC/EN61000-4-2 Contact ±4KV Perf.Criteria B                    |   |
|             |           | RS            | IEC/EN61000-4-3 10V/m Perf.Criteria A (See recommended Photo 2) |   |
|             |           | EFT           | IEC/EN61000-4-4   | Power supply port ±2KV Perf.Criteria B (See recommended Photo 1)  |
|             |           |               | IEC/EN61000-4-4   | Signal supply port ±2KV Perf.Criteria B (See recommended Photo 1) |
|             |           | Surge         | IEC/EN61000-4-5   | Power supply port ±2KV Perf.Criteria B (See                       |

|  |    |                 |  |
|--|----|-----------------|--|
|  |    |                 | recommended Photo 1)   |
|  |    | IEC/EN61000-4-5 | Signal supply port $\pm 2KV$ Perf.Criteria B (See recommended Photo 1) |
|  | CS | IEC/EN61000-4-6 | 3Vr.m.s Perf.Criteria A (See recommended Photo 2)                      |

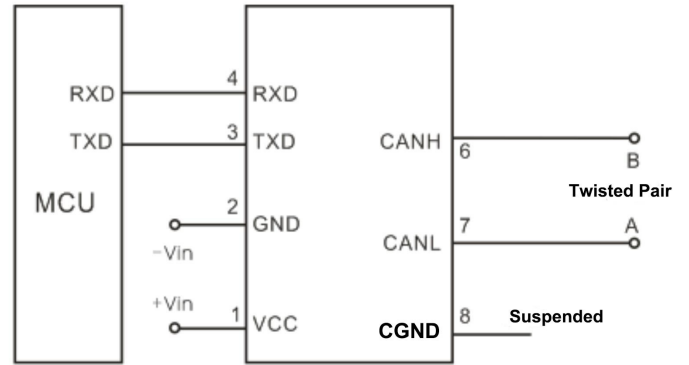
**Design Reference**

**1. Typical Application:**

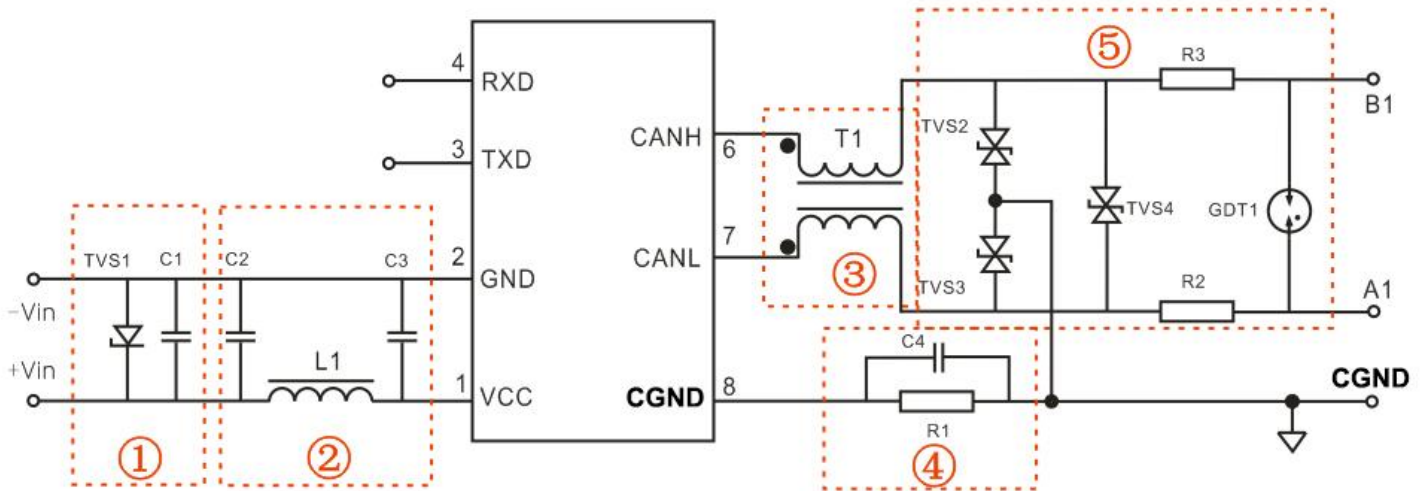
Typical Application RSCAN isolated transceiver module is as shown in the photo;

In general, the module is connected with a power supply, the port and the CAN controller and the CAN network bus, and can be directly used without an external device;

RSCAN-05HSA module need to use the 5V power supply, the matching level is 5V, not be suitable for 3.3V system level;  
RSCAN-3V3HSA module need to use the 3.3V power supply, the matching level is 3.3V, not be suitable for 5V system level;



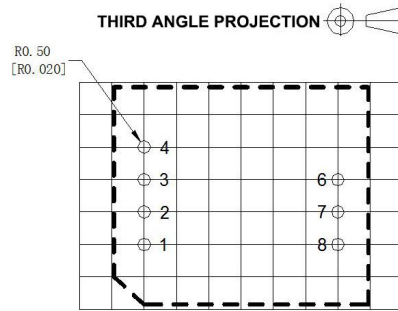
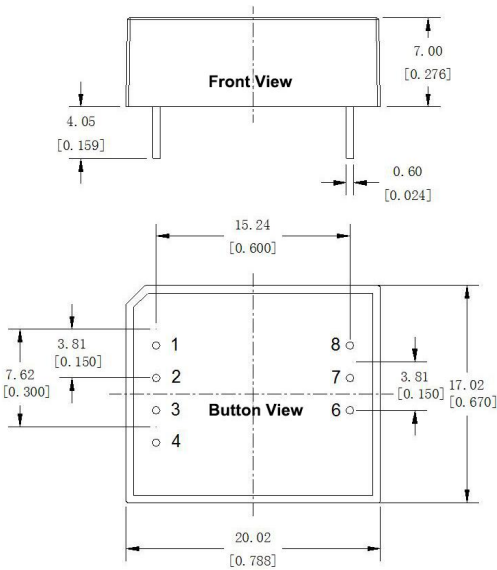
**2. Recommended Circuit:**



Parameter Recommended:

| Component | RSCAN-3V3HSA                      | RSCAN-05HSA |
|-----------|-----------------------------------|-------------|
| C1        | 220uF/10V(Electrolytic Capacitor) |             |
| TVS1      | SMCJ5.0A                          | SMCJ6.5A    |
| C2、C3     | 1uF/50V                           |             |
| L1        | 10uH                              |             |
| T1        | B2793S0513N201                    |             |
| C4        | 1nF/2kV                           |             |
| R1        | 1MΩ                               |             |
| TVS2、TVS3 | SMBJ24CA                          |             |
| TVS4      | SMBJ6.5CA                         |             |
| R2,R3     | 10Ω/2W(Wire Wound Resistance)     |             |
| GDT       | B3D150L-C                         |             |

**Dimension**



Note: Grid: 2.54\*2.54mm

Note:  
 Unit:mm[inch]  
 Pin diameter tolerance: ±0.10mm[±0.004incl]  
 General tolerances:±0.25mm[±0.010inch]

| Pin-Out |      |                               |
|---------|------|-------------------------------|
| Pin     | Name | Function                      |
| 1       | VCC  | Input Power +                 |
| 2       | GND  | GND                           |
| 3       | TXD  | Send Pin                      |
| 4       | RXD  | Receiving Pin                 |
| 6       | CANH | CANH Pin                      |
| 7       | CANL | CANL Pin                      |
| 8       | CGND | Isolation Power Output<br>GND |

| Packing Code | L x W x H |                       |
|--------------|-----------|-----------------------|
| CAN          | 20X17X7mm | 0.787X0.669X0.276inch |

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## Design Reference

1. The product should be used under the specification range, hot Hot-swap is not supported, otherwise it will cause permanent damage to it;
2. RSCAN-05HSA will not support 3.3V system levels, RSCAN-3V3HSA will not support 5V level;
3. If the product worked beyond the load range or below the minimum load, we cannot ensure that the performance of product is in accordance with all the indexes in this manual;
4. Unless otherwise specified, data in this datasheet should be tested under conditions of  $T_a=25^{\circ}\text{C}$ , humidity<75% when inputting nominal voltage and outputting rated load(pure resistance load);
5. All index testing methods in this datasheet are based on our Company's corporate standards;
6. The performance indexes of the product models listed in this manual are as above, but some indexes of non-standard model products will exceed the above-mentioned requirements, and please directly contact our technician for specific information;
7. We can provide customized product service;
8. The product specification may be changed at any time without prior notice;

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