

### ■ Features :

- 2:1 wide input range
- Protections: Short circuit / Overload / Over voltage / Input reverse polarity
- 4000VDC I/O isolation
- Cooling by free air convection
- Built-in constant current limiting circuit
- 1U low profile 36mm
- Compliance to EN50155 railway certificate
- All using 105°C long life electrolytic capacitors
- LED indicator for power on
- 100% full load burn-in test
- 3 years warranty



### SPECIFICATION

| MODEL                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | RSD-25A-5                                                                                                                             | RSD-25A-12    | RSD-25A-24   | RSD-25B-5 | RSD-25B-12     | RSD-25B-24   |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|-----------|----------------|--------------|
| OUTPUT                                  | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 5V                                                                                                                                    | 12V           | 24V          | 5V        | 12V            | 24V          |
|                                         | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 5A                                                                                                                                    | 2.1A          | 1.1A         | 5A        | 2.1A           | 1.1A         |
|                                         | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0 ~ 5A                                                                                                                                | 0 ~ 2.1A      | 0 ~ 1.1A     | 0 ~ 5A    | 0 ~ 2.1A       | 0 ~ 1.1A     |
|                                         | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 25W                                                                                                                                   | 25.2W         | 26.4W        | 25W       | 25.2W          | 26.4W        |
|                                         | RIPPLE & NOISE (max.) <small>Note.2</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 80mVp-p                                                                                                                               | 100mVp-p      | 120mVp-p     | 80mVp-p   | 100mVp-p       | 120mVp-p     |
|                                         | VOLTAGE TOLERANCE <small>Note.3</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ±2.0%                                                                                                                                 | ±1.0%         | ±1.0%        | ±2.0%     | ±1.0%          | ±1.0%        |
|                                         | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ±0.5%                                                                                                                                 | ±0.3%         | ±0.2%        | ±0.5%     | ±0.3%          | ±0.2%        |
|                                         | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ±0.5%                                                                                                                                 | ±0.3%         | ±0.2%        | ±0.5%     | ±0.3%          | ±0.2%        |
|                                         | SETUP, RISE TIME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 800ms, 50ms at full load                                                                                                              |               |              |           |                |              |
| HOLD UP TIME (Typ.)                     | 3 ~ 30ms @ full load ; comply with S1 level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                       |               |              |           |                |              |
| INPUT                                   | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | CONTINUOUS                                                                                                                            | 8.4 ~ 15.6VDC |              |           | 16.8 ~ 31.2VDC |              |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1 SEC.                                                                                                                                | 7.2 ~ 16.8VDC |              |           | 14.4 ~ 33.6VDC |              |
|                                         | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 85%                                                                                                                                   | 86%           | 86%          | 86%       | 87%            | 87%          |
|                                         | DC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2.6A/12V                                                                                                                              | 2.6A/12V      | 2.6A/12V     | 1.3A/24V  | 1.3A/24V       | 1.3A/24V     |
|                                         | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 15A/12VDC                                                                                                                             |               |              | 15A/24VDC |                |              |
| PROTECTION                              | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 105 ~ 135% rated output power<br>Protection type : Constant current limiting, recovers automatically after fault condition is removed |               |              |           |                |              |
|                                         | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 5.75 ~ 7V                                                                                                                             | 13.8 ~ 16.2V  | 27.6 ~ 32.4V | 5.75 ~ 7V | 13.8 ~ 16.2V   | 27.6 ~ 32.4V |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Protection type : Shut down o/p voltage, re-power on to recover                                                                       |               |              |           |                |              |
| ENVIRONMENT                             | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -40 ~ +55℃ (no derating) ; +70℃ @ 60% load by free air convection ; +70℃ (no derating with external base plate)                       |               |              |           |                |              |
|                                         | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 20 ~ 95% RH non-condensing                                                                                                            |               |              |           |                |              |
|                                         | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -40 ~ +85℃, 10 ~ 95% RH                                                                                                               |               |              |           |                |              |
|                                         | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ±0.03%/℃ (0 ~ 50℃)                                                                                                                    |               |              |           |                |              |
|                                         | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes ; Mounting : compliance to IEC61373                                      |               |              |           |                |              |
| SAFETY & EMC<br><small>(Note 4)</small> | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Design refer to IEC60950-1, EN50155 (IEC60571)                                                                                        |               |              |           |                |              |
|                                         | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | I/P-O/P:4KVDC I/P-FG:2.5KVDC O/P-FG:2.5KVDC                                                                                           |               |              |           |                |              |
|                                         | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH                                                                             |               |              |           |                |              |
|                                         | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Compliance to EN55022 (CISPR22) Conduction Emission: Class B, Radiation Emission: Class B ; EN50155(EN50121-3-2)                      |               |              |           |                |              |
| OTHERS                                  | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Compliance to EN61000-4-2,3,4,6,8; ENV50204, EN50155(EN50121-3-2), light industry level, criteria A                                   |               |              |           |                |              |
|                                         | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | K hrs min. MIL-HDBK-217F (25℃)                                                                                                        |               |              |           |                |              |
|                                         | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 109*68*33mm (L*W*H)                                                                                                                   |               |              |           |                |              |
|                                         | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Kg                                                                                                                                    |               |              |           |                |              |
| NOTE                                    | 1. All parameters NOT specially mentioned are measured at 12,24,48,110VDC input, rated load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. |                                                                                                                                       |               |              |           |                |              |

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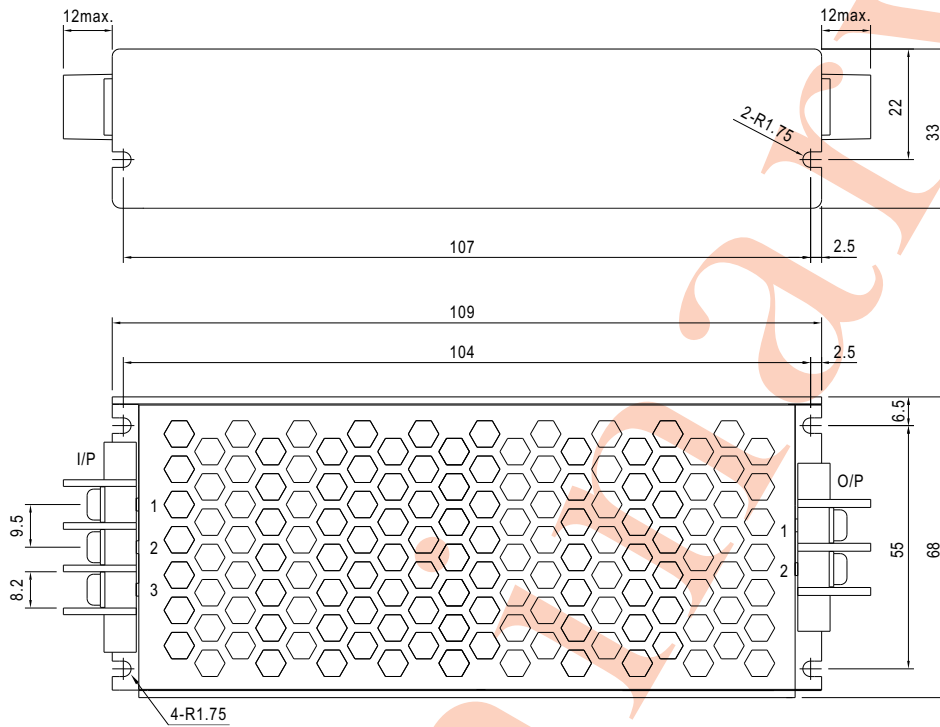


### SPECIFICATION

| MODEL                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | RSD-25C-5                                                                                                        | RSD-25C-12     | RSD-25C-24   | RSD-25D-5  | RSD-25D-12    | RSD-25D-24   |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|----------------|--------------|------------|---------------|--------------|
| OUTPUT                   | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 5V                                                                                                               | 12V            | 24V          | 5V         | 12V           | 24V          |
|                          | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 5A                                                                                                               | 2.1A           | 1.1A         | 5A         | 2.1A          | 1.1A         |
|                          | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0 ~ 5A                                                                                                           | 0 ~ 2.1A       | 0 ~ 1.1A     | 0 ~ 5A     | 0 ~ 2.1A      | 0 ~ 1.1A     |
|                          | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 25W                                                                                                              | 25.2W          | 26.4W        | 25W        | 25.2W         | 26.4W        |
|                          | RIPPLE & NOISE (max.) Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 80mVp-p                                                                                                          | 100mVp-p       | 120mVp-p     | 80mVp-p    | 100mVp-p      | 120mVp-p     |
|                          | VOLTAGE TOLERANCE Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ±2.0%                                                                                                            | ±1.0%          | ±1.0%        | ±2.0%      | ±1.0%         | ±1.0%        |
|                          | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ±0.5%                                                                                                            | ±0.3%          | ±0.2%        | ±0.5%      | ±0.3%         | ±0.2%        |
|                          | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ±0.5%                                                                                                            | ±0.3%          | ±0.2%        | ±0.5%      | ±0.3%         | ±0.2%        |
|                          | SETUP, RISE TIME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 800ms, 50ms at full load                                                                                         |                |              |            |               |              |
| HOLD UP TIME (Typ.)      | 3 ~ 30ms @ full load ; comply with S1 level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                  |                |              |            |               |              |
| INPUT                    | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | CONTINUOUS                                                                                                       | 33.6 ~ 62.4VDC |              |            | 67.2 ~ 143VDC |              |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1 SEC.                                                                                                           | 28.8 ~ 67.2VDC |              |            | 57.6 ~ 154VDC |              |
|                          | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 87%                                                                                                              | 89%            | 89%          | 88%        | 89%           | 88%          |
|                          | DC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.7A/48V                                                                                                         | 0.7A/48V       | 0.7A/48V     | 0.35A/110V | 0.35A/110V    | 0.35A/110V   |
|                          | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 15A/48VDC                                                                                                        |                |              | 15A/110VDC |               |              |
| PROTECTION               | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 105 ~ 135% rated output power                                                                                    |                |              |            |               |              |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Protection type : Constant current limiting, recovers automatically after fault condition is removed             |                |              |            |               |              |
|                          | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 5.75 ~ 7V                                                                                                        | 13.8 ~ 16.2V   | 27.6 ~ 32.4V | 5.75 ~ 7V  | 13.8 ~ 16.2V  | 27.6 ~ 32.4V |
| ENVIRONMENT              | Protection type : Shut down o/p voltage, re-power on to recover                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                  |                |              |            |               |              |
|                          | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -40 ~ +55℃ (no derating) ; +70℃ @ 60% load by free air convection ; +70℃ (no derating with external base plate)  |                |              |            |               |              |
|                          | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 20 ~ 95% RH non-condensing                                                                                       |                |              |            |               |              |
|                          | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -40 ~ +85℃, 10 ~ 95% RH                                                                                          |                |              |            |               |              |
|                          | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ±0.03%/℃ (0 ~ 50℃)                                                                                               |                |              |            |               |              |
|                          | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes ; Mounting : compliance to IEC61373                 |                |              |            |               |              |
| SAFETY & EMC<br>(Note 4) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Design refer to IEC60950-1, EN50155 (IEC60571)                                                                   |                |              |            |               |              |
|                          | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | I/P-O/P:4KVDC I/P-FG:2.5KVDC O/P-FG:2.5KVDC                                                                      |                |              |            |               |              |
|                          | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH                                                        |                |              |            |               |              |
|                          | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Compliance to EN55022 (CISPR22) Conduction Emission: Class B, Radiation Emission: Class B ; EN50155(EN50121-3-2) |                |              |            |               |              |
| OTHERS                   | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Compliance to EN61000-4-2,3,4,6,8; ENV50204, EN50155(EN50121-3-2), light industry level, criteria A              |                |              |            |               |              |
|                          | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | K hrs min. MIL-HDBK-217F (25℃)                                                                                   |                |              |            |               |              |
|                          | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 109*68*33mm (L*W*H)                                                                                              |                |              |            |               |              |
|                          | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Kg                                                                                                               |                |              |            |               |              |
| NOTE                     | 1. All parameters NOT specially mentioned are measured at 12,24,48,110VDC input, rated load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. |                                                                                                                  |                |              |            |               |              |

### Mechanical Specification

Case No. Unit:mm



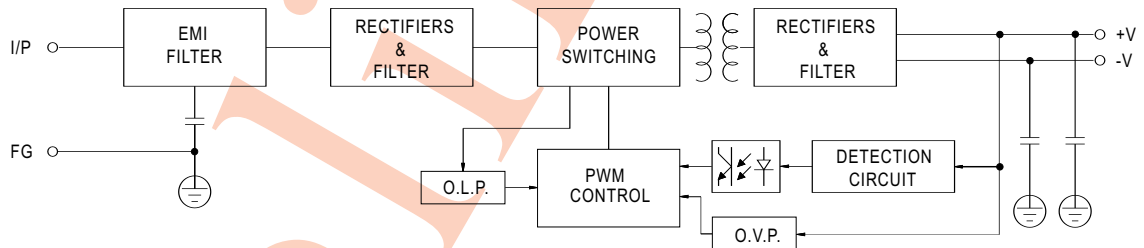
Input Terminal Pin No. Assignment :

| Pin No. | Assignment  |
|---------|-------------|
| 1       | DC INPUT V+ |
| 2       | DC INPUT V- |
| 3       | FG          |

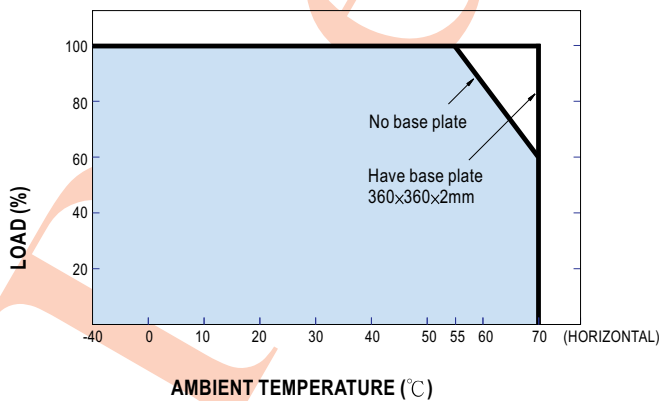
Output Terminal Pin No. Assignment :

| Pin No. | Assignment   |
|---------|--------------|
| 1       | DC OUTPUT -V |
| 2       | DC OUTPUT +V |

### Block Diagram



### Derating Curve



### Static Characteristics(RSD-25D-24)

