



Наличие и актуальные цены на

**RSDW60G-12**

<https://www.mean-well.ru/store/RSDW60G-12/>



## 60W 2"x1" Package Reliable Railway DC-DC Converter **RSDW60 & RDDW60** series



### ■ Features

- Compliance with EN50155 railway standard
- 2"x1" compact size with low profile(10.5mm)
- 4:1 wide input range
- Wide operating temperature range -40 ~ +85°C
- No minimum load required
- Full encapsulated
- Protections: Short circuit (Continuous) / Overload / Over voltage / Over temperature / Input under voltage lock-out
- 1.6KVDC,3KVDC I/O isolation by models
- Remote ON/OFF control
- 3 years warranty

### ■ Applications

- Bus, tram, metro or railway system
- Telecom/datacom system
- Wireless network
- Industrial control facility
- Instrument
- Analyzer
- Highly vibrating, heavily dusty, extremely low or high temperature harsh environment

### ■ GTIN CODE

MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

### ■ Description

RSDW60 and RDDW60 series are 60W module type DC-DC reliable railway converter with 2"x1" package. It features international standard pins, a high efficiency up to 92%, wide working temperature range -40~+85°C, 1.6KVDC(F/G models)/3KVDC(H models) I/P-O/P isolation voltage, compliance with EN50155 railway standard, continuous-mode short circuit protection, etc. The models account for different input voltage 9~36V, 18~75V and 40~160V 4:1 wide input range, and various output voltage, 3.3V/5V/12V/15V/24V/48V for single output and  $\pm 12V/\pm 15V$  for dual outputs, which are suitable for railway, trams, buses and also can be used in the harsh environment with high vibration, high dust, extremely low or high temperature, etc.

### ■ Model Encoding

**RSDW60H-12**

- Output voltage (3.3/5/12/15/24/48Vdc,  $\pm 12/\pm 15Vdc$ )
- Input voltage (F: 9~36Vdc, G: 18~75Vdc, H: 40~160Vdc)
- Rated wattage
- Series name { S:Single output  
D:Dual output



# 60W 2"x1" Package Reliable Railway DC-DC Converter **RSDW60 & RDDW60** series

| MODEL SELECTION TABLE |                            |               |           |                   |                   |                      |                          |
|-----------------------|----------------------------|---------------|-----------|-------------------|-------------------|----------------------|--------------------------|
| ORDER NO.             | INPUT                      |               |           | OUTPUT            |                   | EFFICIENCY<br>(Typ.) | CAPACITOR LOAD<br>(MAX.) |
|                       | INPUT VOLTAGE<br>(RANGE)   | INPUT CURRENT |           | OUTPUT<br>VOLTAGE | OUTPUT<br>CURRENT |                      |                          |
|                       |                            | NO LOAD       | FULL LOAD |                   |                   |                      |                          |
| RSDW60F-03            | Normal 24V<br>(9 ~ 36V)    | 15mA          | 1.9A      | 3.3V              | 12A               | 89%                  | 28000μF                  |
| RSDW60F-05            |                            | 15mA          | 2.85A     | 5V                | 12A               | 90%                  | 28000μF                  |
| RSDW60F-12            |                            | 15mA          | 2.85A     | 12V               | 5A                | 91%                  | 5850μF                   |
| RSDW60F-15            |                            | 15mA          | 2.85A     | 15V               | 4A                | 92%                  | 3900μF                   |
| RSDW60F-24            |                            | 15mA          | 2.85A     | 24V               | 2.5A              | 92%                  | 2000μF                   |
| RDDW60F-12            |                            | 15mA          | 2.85A     | ±12V              | 0 ~ ±2.5A         | 91%                  | *3900μF                  |
| RDDW60F-15            |                            | 15mA          | 2.8A      | ±15V              | 0 ~ ±2.0A         | 91%                  | *2400μF                  |
| RSDW60G-03            | Normal 48V<br>(18 ~ 75V)   | 15mA          | 1A        | 3.3V              | 12A               | 89%                  | 28000μF                  |
| RSDW60G-05            |                            | 15mA          | 1.45A     | 5V                | 12A               | 91%                  | 28000μF                  |
| RSDW60G-12            |                            | 15mA          | 1.45A     | 12V               | 5A                | 92%                  | 5850μF                   |
| RSDW60G-15            |                            | 15mA          | 1.45A     | 15V               | 4A                | 92%                  | 3900μF                   |
| RSDW60G-24            |                            | 15mA          | 1.45A     | 24V               | 2.5A              | 92%                  | 2000μF                   |
| RDDW60G-12            |                            | 15mA          | 1.45A     | ±12V              | 0 ~ ±2.5A         | 90%                  | *3900μF                  |
| RDDW60G-15            |                            | 15mA          | 1.45A     | ±15V              | 0 ~ ±2.0A         | 90%                  | *2400μF                  |
| RSDW60H-05            | Normal 110V<br>(40 ~ 160V) | 10mA          | 630mA     | 5V                | 12A               | 89%                  | 28000μF                  |
| RSDW60H-12            |                            | 10mA          | 630mA     | 12V               | 5A                | 89%                  | 5850μF                   |
| RSDW60H-24            |                            | 10mA          | 610mA     | 24V               | 2.5A              | 89%                  | 2000μF                   |
| RSDW60H-48            |                            | 10mA          | 610mA     | 48V               | 1.25A             | 88.5%                | 390μF                    |

\* For each output

| SPECIFICATION             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                          |                                                                                 |                                                      |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------|
| INPUT                     | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | F: 9~36Vdc , G: 18~75Vdc , H: 40~160Vdc                                                                                  |                                                                                 |                                                      |
|                           | SURGE VOLTAGE (100ms max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 24Vin models : 50Vdc, 48Vin models : 100Vdc, 110Vin models : 200Vdc                                                      |                                                                                 |                                                      |
|                           | FILTER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Pi type                                                                                                                  |                                                                                 |                                                      |
|                           | PROTECTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Fuse recommended. 24Vin models: 12A delay time Type, 48Vin models: 6A delay time Type, 110Vin models: 3A delay time Type |                                                                                 |                                                      |
| OUTPUT                    | VOLTAGE ACCURACY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ± 1%                                                                                                                     |                                                                                 |                                                      |
|                           | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 60W                                                                                                                      |                                                                                 |                                                      |
|                           | RIPPLE & NOISE     Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Single output models: 3.3Vo~5Vo: 100mVp-p, 12Vo~48Vo: 150mVp-p<br>Dual output models: 125mVp-p                           |                                                                                 |                                                      |
|                           | LINE REGULATION   Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Single output models: ± 0.2%, Dual output models: ± 0.5%                                                                 |                                                                                 |                                                      |
|                           | LOAD REGULATION   Note.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Single output models: ± 0.5%, Dual output models: ± 1%                                                                   |                                                                                 |                                                      |
|                           | CROSS REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ± 5% @ 25%~100% load for 24Vin/48Vin models                                                                              |                                                                                 |                                                      |
|                           | SWITCHING FREQUENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 250KHz                                                                                                                   |                                                                                 |                                                      |
|                           | EXTERNAL TRIM ADJ. RANGE (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ± 10% (Single output model only)                                                                                         |                                                                                 |                                                      |
| PROTECTION                | SHORT CIRCUIT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Protection type : Continuous, automatic recovery                                                                         |                                                                                 |                                                      |
|                           | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 125 ~ 210% rated output power                                                                                            |                                                                                 |                                                      |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Protection type : Recovers automatically after fault condition is removed                                                |                                                                                 |                                                      |
|                           | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Protection type : Clamp by diode                                                                                         |                                                                                 |                                                      |
|                           | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Tcase temperature 110℃ max.                                                                                              |                                                                                 |                                                      |
|                           | UNDER VOLTAGE LOCKOUT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 24Vin: 8Vdc, 48Vin: 16Vdc, 110Vin: 34Vdc                                                                                 |                                                                                 |                                                      |
| FUNCTION                  | REMOTE CONTROL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Power ON: R.C~-Vin >3~12Vdc or open circuit<br>Power OFF: R.C~-Vin <1.2Vdc or short                                      |                                                                                 |                                                      |
| ENVIRONMENT               | COOLING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Free-air convection                                                                                                      |                                                                                 |                                                      |
|                           | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -40 ~ +85℃ (Refer to "Derating Curve")                                                                                   |                                                                                 |                                                      |
|                           | CASE TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | +110℃ max.                                                                                                               |                                                                                 |                                                      |
|                           | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 20% ~ 90% RH non-condensing                                                                                              |                                                                                 |                                                      |
|                           | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -55 ~ +125℃, 10 ~ 95% RH non-condensing                                                                                  |                                                                                 |                                                      |
|                           | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.05% / °C (0 ~ 55℃)                                                                                                     |                                                                                 |                                                      |
|                           | SOLDERING TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1.5mm from case of 1 ~ 3sec./260℃ max.                                                                                   |                                                                                 |                                                      |
|                           | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes                                                  |                                                                                 |                                                      |
| SAFETY & EMC<br>( Note.5) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | EAC TP TC 020/2011(EAC TP TC 004 for 48Vin/110Vin type only) approved                                                    |                                                                                 |                                                      |
|                           | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 24Vin / 48Vin models: I/P-O/P 1.6KVDC, 110Vin models: 3KVDC                                                              |                                                                                 |                                                      |
|                           | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | I/P-O/P:1000M Ohms / 500VDC / 25℃ / 70% RH                                                                               |                                                                                 |                                                      |
|                           | ISOLATION CAPACITANCE (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1500pF                                                                                                                   |                                                                                 |                                                      |
|                           | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Parameter                                                                                                                | Standard                                                                        | Test Level / Note                                    |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Conducted                                                                                                                | BS EN/EN55032                                                                   | Class A/B with external components<br>(see page 6~7) |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Radiated                                                                                                                 | BS EN/EN55032                                                                   |                                                      |
|                           | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Parameter                                                                                                                | Standard                                                                        | Test Level / Note                                    |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ESD                                                                                                                      | BS EN/EN61000-4-2                                                               | Level 2, ± 8KV air, ± 6KV contact                    |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | EFT/Bursts                                                                                                               | BS EN/EN61000-4-4                                                               | Level 1, ± 0.5KV                                     |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Surge                                                                                                                    | BS EN/EN61000-4-5                                                               | Level 1, ± 0.5KV Line-Line                           |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Conducted                                                                                                                | BS EN/EN61000-4-6                                                               | Level 2, 10V(e.m.f.)                                 |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Magnetic field                                                                                                           | BS EN/EN61000-4-8                                                               | 10A/m                                                |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RAILWAY STANDARD                                                                                                         | EN50155 / IEC60571 including EN61373 for shock & vibration, EN50121-3-2 for EMC |                                                      |
| OTHERS                    | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 205Khrs   MIL-HDBK-217F(25℃)                                                                                             |                                                                                 |                                                      |
|                           | DIMENSION (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 50.8*25.4*10.5mm (2*1*0.413 inch)                                                                                        |                                                                                 |                                                      |
|                           | CASE MATERIAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Metal Case                                                                                                               |                                                                                 |                                                      |
|                           | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | F/G models: 37.6g, H models: 45g ; 18pcs/per tube, 288pcs/16 tube max./carton                                            |                                                                                 |                                                      |
| NOTE                      | 1.All parameters are specified at normal input(F:24Vdc, G:48Vdc, H:110Vdc), rated load, 25℃ 70% RH ambient.<br>2.Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1μf & 47μf capacitor.<br>3.Line regulation is measured from low line to high line at rated load.<br>4.Load regulation is measured from 0% to 100% rated load.<br>5.The final equipment must be re-confirm that it still meet EMC directives. For guidance on how to perform these EMC tests, please refer to “EMI testing of component power supplies.”(as available on <a href="http://www.meanwell.com">http://www.meanwell.com</a> )<br>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |                                                                                                                          |                                                                                 |                                                      |

## External Output Trimming

In order to trim the voltage up or down one needs to connect the trim resistor either between the trim pin and -Vo for trim-up and between trim pin and +Vo for trim-down. The output voltage trim range is  $\pm 10\%$ . This is shown in Figures 1 and 2:

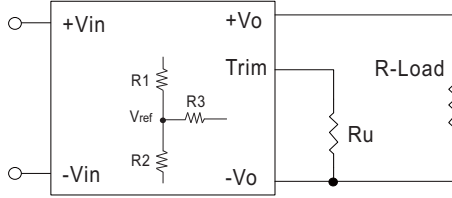


Figure 1. Trim-up Voltage Setup

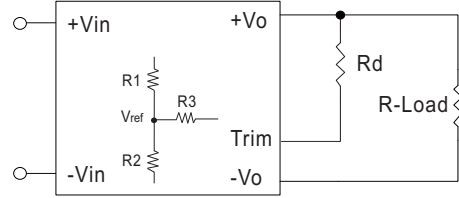


Figure 2. Trim-down Voltage Setup

### 1. The value of Rtrim-up defined as:

$$R_{\text{trim-up}} = \frac{aR_2}{R_2-a} - R_3, a = \frac{V_{\text{ref}}}{V_o' - V_{\text{ref}}} \times R_1$$

For example, to trim-up the output voltage of 5.0V module (RSDW60F-05) by 10% to 5.5V,  $R_{\text{trim-up}}$  is calculated as follows:

$$V_o' = 5.5V$$

$$V_{\text{ref}} = 2.5V$$

$$R_1 = 10K\Omega$$

$$R_2 = 10K\Omega$$

$$R_3 = 35.7K\Omega$$

$$a = \frac{V_{\text{ref}}}{V_o' - V_{\text{ref}}} \times R_1$$

$$= \frac{2.5}{5.5 - 2.5} \times 10 = 8.333$$

$$R_{\text{trim-up}} = \frac{aR_2}{R_2-a} - R_3$$

$$= \frac{8.333 \times 10}{10 - 8.333} - 35.7$$

$$= \frac{83.33}{1.667} - 35.7$$

$$= 14.28K\Omega$$

Table 1 – Trim up and Trim down Resistor Values

| Model No. | Vout | Vref  | R1              | R2            | R3             |
|-----------|------|-------|-----------------|---------------|----------------|
| RSDW60F   | 3.3V | 1.24V | 8.5K $\Omega$   | 5.1K $\Omega$ | 27K $\Omega$   |
|           | 5V   | 2.50V | 10K $\Omega$    | 10K $\Omega$  | 35.7K $\Omega$ |
|           | 12V  | 2.50V | 38K $\Omega$    | 10K $\Omega$  | 68K $\Omega$   |
|           | 15V  | 2.50V | 50K $\Omega$    | 10K $\Omega$  | 73.2K $\Omega$ |
|           | 24V  | 2.50V | 86K $\Omega$    | 10K $\Omega$  | 75K $\Omega$   |
| RSDW60G   | 3.3V | 1.24V | 8.5K $\Omega$   | 5.1K $\Omega$ | 27K $\Omega$   |
|           | 5V   | 1.24V | 15.47K $\Omega$ | 5.1K $\Omega$ | 33K $\Omega$   |
|           | 12V  | 2.50V | 38K $\Omega$    | 10K $\Omega$  | 68K $\Omega$   |
|           | 15V  | 2.50V | 50K $\Omega$    | 10K $\Omega$  | 73.2K $\Omega$ |
|           | 24V  | 2.50V | 86K $\Omega$    | 10K $\Omega$  | 75K $\Omega$   |
| RSDW60H   | 5V   | 1.24V | 15.47K $\Omega$ | 5.1K $\Omega$ | 30K $\Omega$   |
|           | 12V  | 2.50V | 38K $\Omega$    | 10K $\Omega$  | 68K $\Omega$   |
|           | 24V  | 2.50V | 86K $\Omega$    | 10K $\Omega$  | 76.8K $\Omega$ |
|           | 48V  | 2.50V | 182K $\Omega$   | 10K $\Omega$  | 80.6K $\Omega$ |

Note:

1.  $R_{\text{trim-up}}$ ,  $R_{\text{trim-down}}$  is mean trim resistor, please check the formula.

2. a & b: user define parameter, no actual meanings.

3.  $V_o'$  is target trim voltage.

4. Value for R1, R2, R3 and Vref refer to below table.

### 2. The value of Rtrim-down defined as:

$$R_{\text{trim-down}} = \frac{bR_1}{R_1-b} - R_3, b = \frac{V_o' - V_{\text{ref}}}{V_{\text{ref}}} \times R_2$$

For example, to trim-down the output voltage of 5.0V module (RSDW60F-05) by 10% to 4.5V,  $R_{\text{trim-down}}$  is calculated as follows:

$$V_o' = 4.5V$$

$$V_{\text{ref}} = 2.5V$$

$$R_1 = 10K\Omega$$

$$R_2 = 10K\Omega$$

$$R_3 = 35.7K\Omega$$

$$b = \frac{V_o' - V_{\text{ref}}}{V_{\text{ref}}} \times R_2$$

$$= \frac{4.5 - 2.5}{2.5} \times 10 = 0.8 \times 10 = 8$$

$$R_{\text{trim-down}} = \frac{bR_1}{R_1-b} - R_3$$

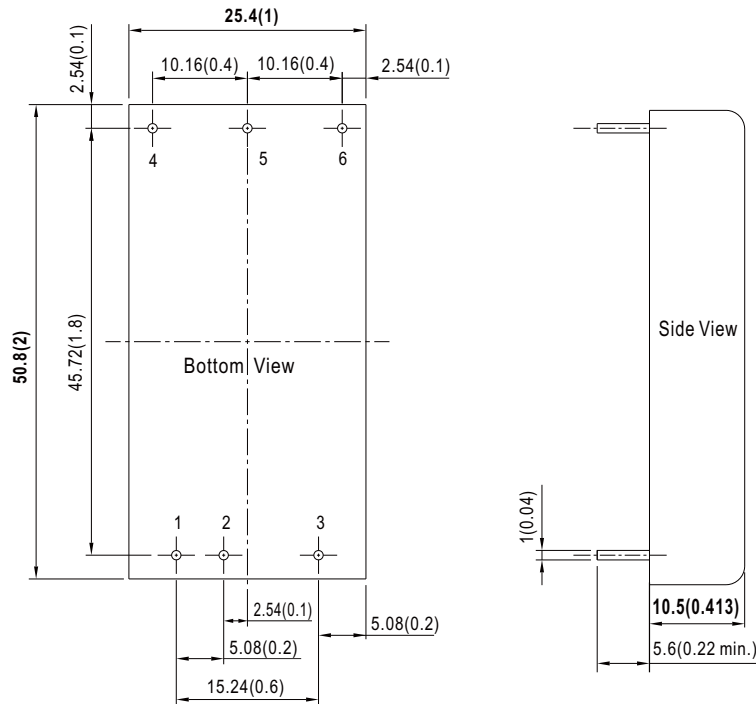
$$= \frac{8 \times 10}{10 - 8} - 35.7$$

$$= \frac{80}{2} - 35.7$$

$$= 4.3K\Omega$$

## ■ Mechanical Specification

- All dimensions in mm(inch)
- Tolerance:  $x.xx \pm 0.35\text{mm}$  ( $x.xxx \pm 0.013"$ )
- Pin size is:  $1 \pm 0.1\text{mm}$  ( $0.04" \pm 0.005"$ )

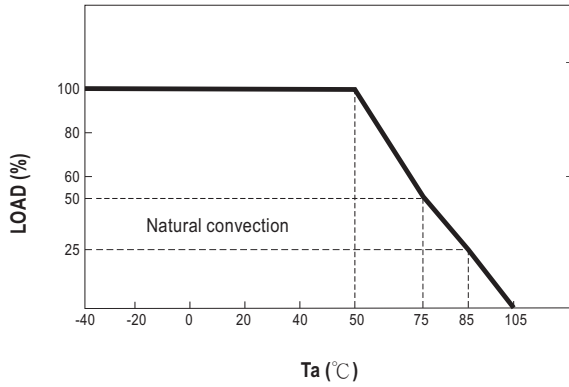


## ■ Plug Assignment

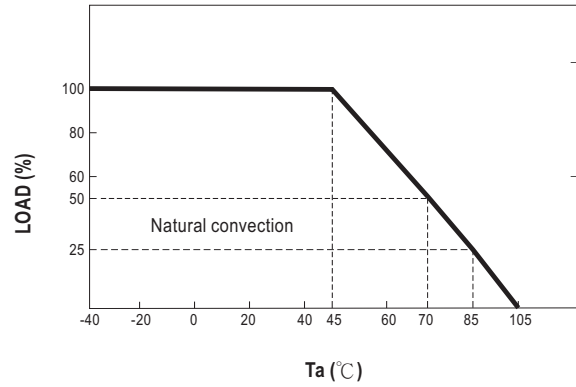
| Pin-Out |                           |                         |
|---------|---------------------------|-------------------------|
| Pin No. | RSDW60<br>(Single output) | RDDW60<br>(Dual output) |
| 1       | +Vin                      | +Vin                    |
| 2       | -Vin                      | -Vin                    |
| 3       | Remote ON/OFF             | Remote ON/OFF           |
| 4       | +Vout                     | +Vout                   |
| 5       | -Vout                     | Common                  |
| 6       | Trim                      | -Vout                   |

## Derating Curve

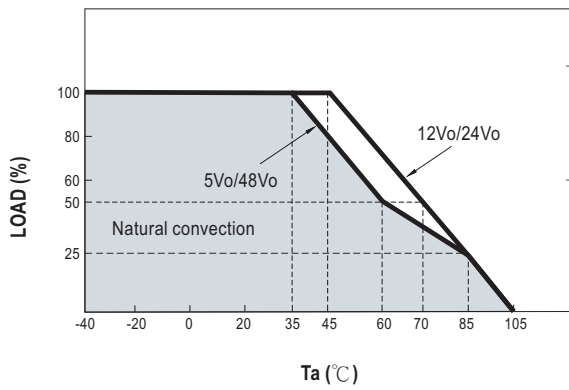
RSDW60F / RDDW60F (9~36Vin models):



RSDW60G / RDDW60G (18~75Vin models):



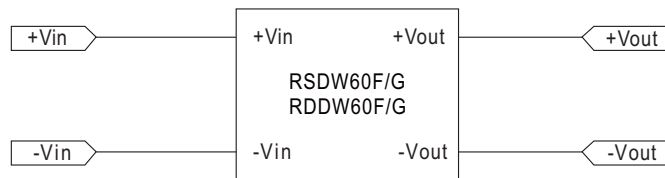
RSDW60H (40~160Vin models):



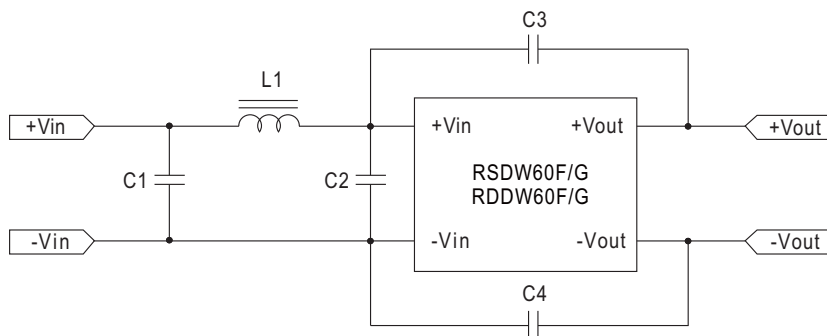
## EMC Suggestion Circuit

**F models(9~36Vin) and G models(18~75Vin):**

※Comply to BS EN/EN55032 Class A emission without additional componets are as below:



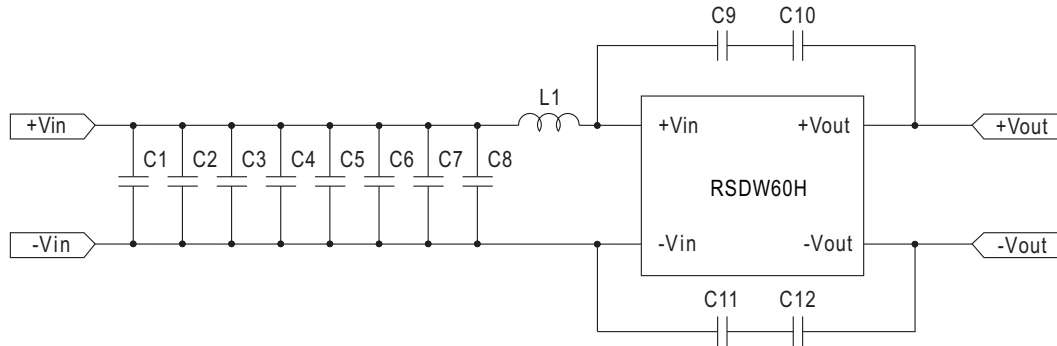
※Required external componets to meet BS EN/EN55032 Class B emission are as below:



| Model No.                               | C1    | L1    | C2    | C3     | C4     |
|-----------------------------------------|-------|-------|-------|--------|--------|
| RSDW60F-03/05/12/15/24<br>RDDW60F-12/15 | 10μF  | 1.5μH | 10μF  | 2200pF | 2200pF |
| RSDW60G-03/05/12/15/24<br>RDDW60G-12/15 | 4.7μF | 3.3μH | 4.7μF | 2200pF | 2200pF |

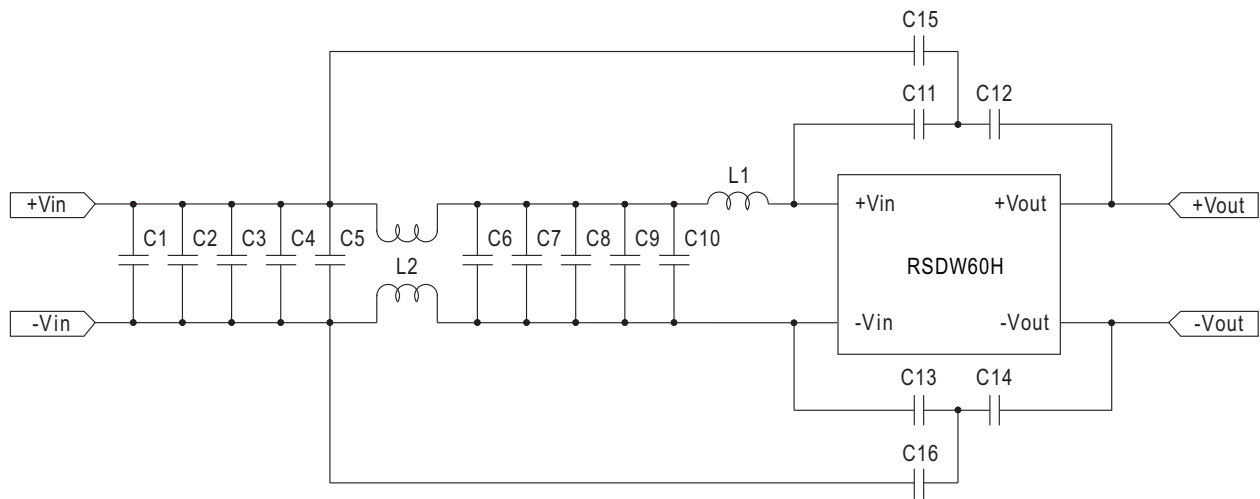
## H models(40~160Vin):

※Required external componets to meet BS EN/EN55032 Class A emission are as below:



| Model No.          | L1   | C1     | C2     | C3     | C4     | C5     | C6     | C7     | C8     | C9     | C10    | C11    | C12    |
|--------------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| RSDW60H-5/12/24/48 | 68μH | 0.68μH | 0.68μH | 0.68μH | 0.68μH | 0.68μH | 0.68μH | 0.68μH | 0.68μH | 4700pF | 4700pF | 4700pF | 4700pF |

※Required external componets to meet BS EN/EN55032 Class B emission are as below:



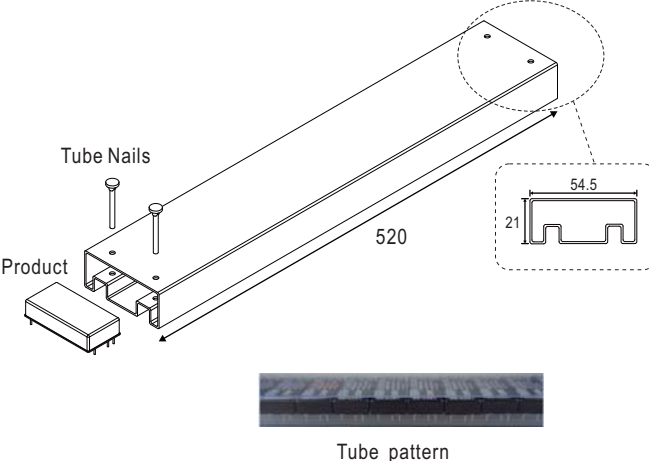
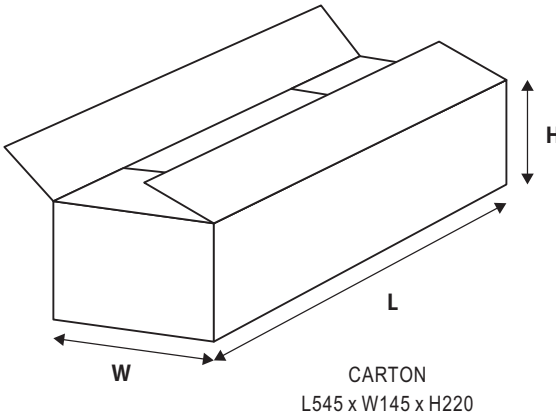
| Model No.     | L1   | L2    | C1     | C2     | C3     | C4     | C5     | C6     | C7     | C8     | C9     | C10    | C11    | C12    | C13    | C14    | C15  | C16  |
|---------------|------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|------|
| RSDW60H-05/12 | 68μH | 2.2mH | 0.68μF | 0.68μF | 0.68μF | 0.68μF | 0.68μF | 0.68μF | 0.68μF | 0.68μF | 0.68μF | 0.68μF | 4700pF | 4700pF | 4700pF | 4700pF | 47pF | 47pF |
| RSDW60H-24/48 | 68μH | 2.2mH | 0.68μF | 0.68μF | 0.68μF | 0.68μF | 0.68μF | 0.68μF | 0.68μF | 0.68μF | 0.68μF | 0.68μF | 4700pF | 4700pF | 4700pF | 4700pF | 33pF | 33pF |





# 60W 2"x1" Package Reliable Railway DC-DC Converter **RSDW60 & RDDW60** series

## ■ Packing

| Standard Tube Packing                                                                                                                                                                                                                            | RSDW60/RDDW60            |                  |                           |                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------|---------------------------|--------------------|
|                                                                                                                                                                                                                                                  | MPQ<br>Per Tube<br>(PCS) | One Tube<br>G.W. | Max. Q'TY/<br>Carton(PCS) | One Carton<br>G.W. |
| <p>Unit : mm</p>  <p>Tube pattern</p>  <p>CARTON<br/>L545 x W145 x H220</p> | 18                       | 730g             | 288                       | 12.5Kg             |
|                                                                                                                                                                                                                                                  | RSDW60H/RDDW60H          |                  |                           |                    |
|                                                                                                                                                                                                                                                  | MPQ<br>Per Tube<br>(PCS) | One Tube<br>G.W. | Max. Q'TY/<br>Carton(PCS) | One Carton<br>G.W. |
|                                                                                                                                                                                                                                                  | 18                       | 910g             | 288                       | 15Kg               |

## ■ Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>