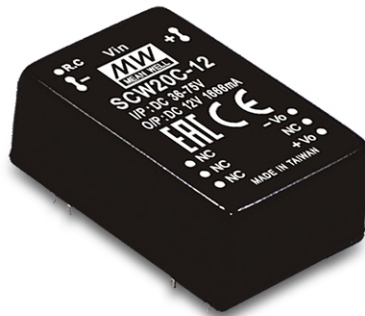




## Features

- DIP24 package with industry standard pinout
- 2:1 wide input range
- Operating temperature range -40 ~ +80°C
- No minimum load required
- Comply to BS EN/EN55032 radiated Class A with additional components
- High efficiency up to 89%
- Protections: Short circuit (Continuous) / Overload
- 1.5KVDC I/O isolation
- Remote ON/OFF control
- 3 years warranty

## Applications

- Telecom/datacom system
- Wireless network
- Industrial control facility
- Instrument
- Analyzer
- Detector
- Data switch

## GTIN CODE

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

## Description

SCW20 series is 20W isolated and regulated module type DC-DC converter with DIP24 package. It features international standard pins, a high efficiency up to 89%, wide working temperature range -40~+80°C, 1.5KVDC I/P-O/P isolation voltage, Compliance to BS EN/EN55032 radiated Class A with additional components, continuous-mode short circuit protection, etc. The additional components, models account for different input voltage 9~18V, 18~36V and 36~75V 2:1 wide input range, and various output voltage, 5V/12V/15V for single output, which are suitable for all kinds of systems, Such as industrial control, telecommunication field, distributed power architecture, and so on.

## Model Encoding

SCW20 **A** - **12**

- Output voltage (5/12/15Vdc)
- Input voltage (A: 9~18Vdc, B: 18~36Vdc, C: 36~75Vdc)
- Rated wattage
- Series name

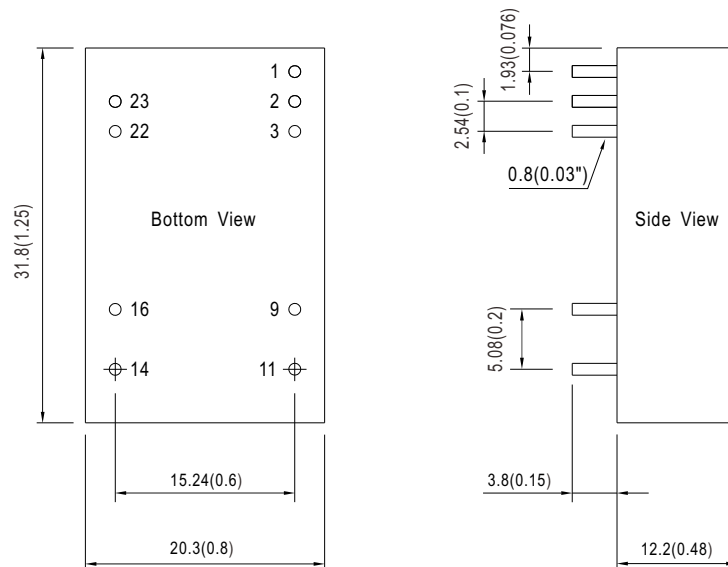
| MODEL SELECTION TABLE |                          |               |           |                   |                   |                      |                          |
|-----------------------|--------------------------|---------------|-----------|-------------------|-------------------|----------------------|--------------------------|
| 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 |                   |                   |                      |                          |
| SCW20A-05             | Normal 12V<br>(9 ~ 18V)  | 110mA         | 1938mA    | 5V                | 4000mA            | 86%                  | 1000μF                   |
| SCW20A-12             |                          | 30mA          | 1938mA    | 12V               | 1666mA            | 86%                  | 220μF                    |
| SCW20A-15             |                          | 25mA          | 1915mA    | 15V               | 1333mA            | 87%                  | 220μF                    |
| SCW20B-05             | Normal 24V<br>(18 ~ 36V) | 60mA          | 969mA     | 5V                | 4000mA            | 86%                  | 1000μF                   |
| SCW20B-12             |                          | 25mA          | 957mA     | 12V               | 1666mA            | 87%                  | 220μF                    |
| SCW20B-15             |                          | 25mA          | 957mA     | 15V               | 1333mA            | 88%                  | 220μF                    |
| SCW20C-05             | Normal 48V<br>(36 ~ 75V) | 45mA          | 484mA     | 5V                | 4000mA            | 86%                  | 1000μF                   |
| SCW20C-12             |                          | 15mA          | 479mA     | 12V               | 1666mA            | 87%                  | 220μF                    |
| SCW20C-15             |                          | 15mA          | 479mA     | 15V               | 1333mA            | 89%                  | 220μF                    |



| SPECIFICATION             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                     |                            |                                    |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------------|
| INPUT                     | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A: 9~18Vdc , B: 18~36Vdc , C: 36~75Vdc                                                                              |                            |                                    |
|                           | FILTER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Pi type                                                                                                             |                            |                                    |
|                           | PROTECTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Fuse recommended. 12Vin models: 4A Slow-Blow Type, 24Vin models: 2A Slow-Blow Type, 48Vin models: 1A Slow-Blow Type |                            |                                    |
|                           | INTERNAL POWER DISSIPATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 500mW                                                                                                               |                            |                                    |
| OUTPUT                    | VOLTAGE ACCURACY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ±2%                                                                                                                 |                            |                                    |
|                           | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 20W                                                                                                                 |                            |                                    |
|                           | RIPPLE & NOISE   Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 80mVp-p                                                                                                             |                            |                                    |
|                           | LINE REGULATION   Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ±0.5%                                                                                                               |                            |                                    |
|                           | LOAD REGULATION   Note.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ±0.5%                                                                                                               |                            |                                    |
|                           | SWITCHING FREQUENCY (Min.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 400KHz                                                                                                              |                            |                                    |
| PROTECTION                | SHORT CIRCUIT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Protection type : Continuous, automatic recovery                                                                    |                            |                                    |
|                           | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 120 ~ 190% rated output power                                                                                       |                            |                                    |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Protection type : Recovers automatically after fault condition is removed                                           |                            |                                    |
| FUNCTION                  | REMOTE CONTROL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Power ON: R.C. ~ -Vin > 2.5VDC or open ; Power OFF: R.C. ~ -Vin < 0.8VDC or short                                   |                            |                                    |
| ENVIRONMENT               | COOLING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Free-air convection                                                                                                 |                            |                                    |
|                           | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -40 ~ +80℃ (Refer to "Derating Curve")                                                                              |                            |                                    |
|                           | CASE TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | +110℃ max.                                                                                                          |                            |                                    |
|                           | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 20% ~ 90% RH non-condensing                                                                                         |                            |                                    |
|                           | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -40 ~ +105℃, 10 ~ 95% RH non-condensing                                                                             |                            |                                    |
|                           | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.03% / °C (0 ~ 85℃)                                                                                                |                            |                                    |
|                           | 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 type only) approved                                                     |                            |                                    |
|                           | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | I/P-O/P:1.5KVDC                                                                                                     |                            |                                    |
|                           | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | I/P-O/P:100M Ohms / 500VDC / 25℃ / 70% RH                                                                           |                            |                                    |
|                           | ISOLATION CAPACITANCE (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1200pF                                                                                                              |                            |                                    |
|                           | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Parameter                                                                                                           | Standard                   | Test Level / Note                  |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Conducted                                                                                                           | BS EN/EN55032(CISPR32)     | N/A                                |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Radiated                                                                                                            | BS EN/EN55032(CISPR32)     | Class A with additional components |
|                           | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Parameter                                                                                                           | Standard                   | Test Level / Note                  |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ESD                                                                                                                 | BS EN/EN61000-4-2          | Level 2, ±8KV air, ±4KV contact    |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Radiated Susceptibility                                                                                             | BS EN/EN61000-4-3          | Level 2, 3V/m                      |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 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, 3V(e.m.f.)                |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Magnetic Field                                                                                                      | BS EN/EN61000-4-8          | Level 2, 3A/m                      |
| OTHERS                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | MTBF                                                                                                                | 224Khrs MIL-HDBK-217F(25℃) |                                    |
|                           | DIMENSION (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 31.8*20.3*12.2mm (1.25*0.8*0.48 inch)                                                                               |                            |                                    |
|                           | CASE MATERIAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Five-sided shield metal case                                                                                        |                            |                                    |
|                           | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 18.5g ; 15pcs/per tube, 750pcs/50 tube/per carton                                                                   |                            |                                    |
| NOTE                      | 1.All parameters are specified at normal input(A:12Vdc, B:24Vdc, C:48Vdc), 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 20% 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> |                                                                                                                     |                            |                                    |

### ■ Mechanical Specification

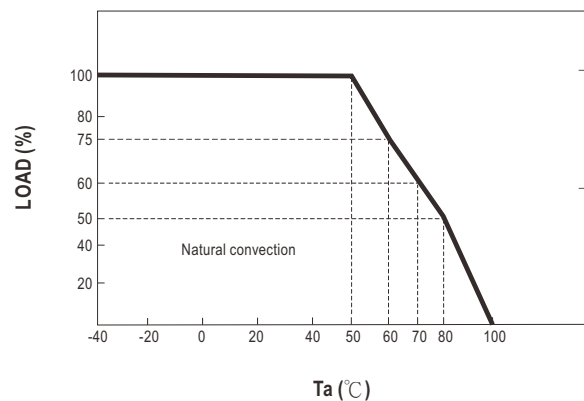
- All dimensions in mm(inch)
- Tolerance:  $x.x \pm 0.5\text{mm}$  ( $x.xx \pm 0.02"$ )  
 $x.xx \pm 0.25\text{mm}$  ( $x.xxx \pm 0.010"$ )
- Pin size is:  $0.8 \pm 0.05\text{mm}$  ( $0.03" \pm 0.002"$ )



### ■ Pin Assignment

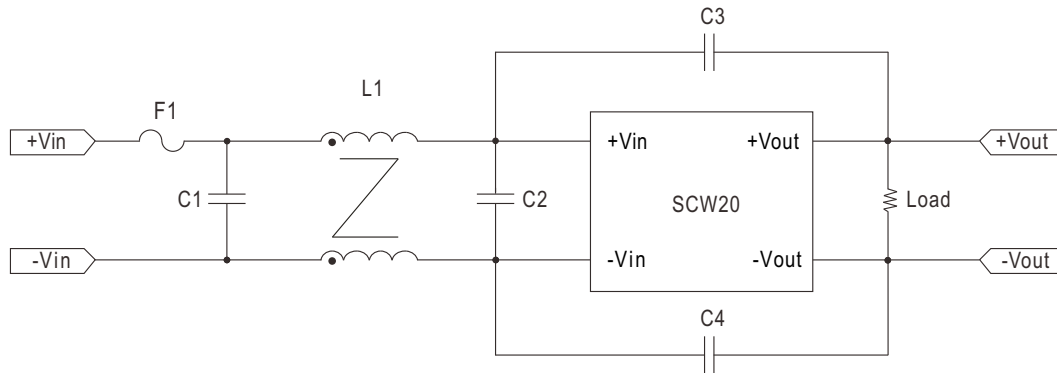
| Pin No. | Output        |
|---------|---------------|
| 1       | Remote ON/OFF |
| 2,3     | -Vin          |
| 9       | N.C.          |
| 11      | N.C.          |
| 14      | +Vout         |
| 16      | -Vout         |
| 22,23   | +Vin          |

### ■ Derating Curve



## EMC Suggestion Circuit

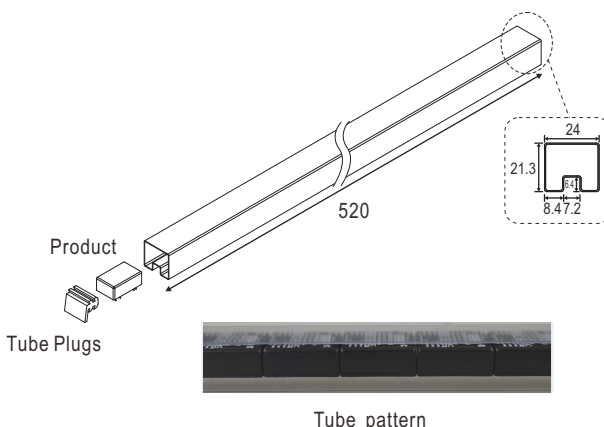
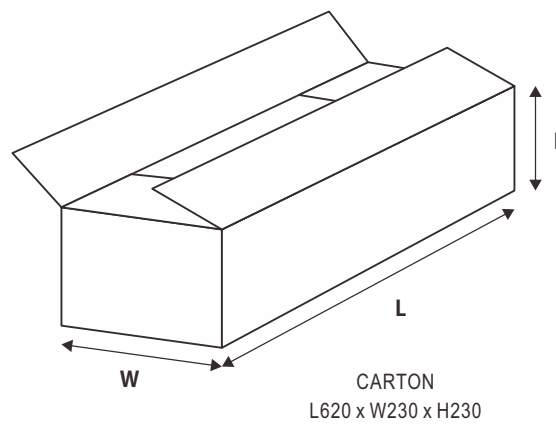
※ Required external components to meet BS EN/EN55032 radiated Class A and Class B are as below:



| Model No. | BS EN/EN55032 radiated Class A |    |                    |    |    |
|-----------|--------------------------------|----|--------------------|----|----|
|           | C1                             | C2 | C3                 | C4 | L1 |
| SCW20     | NC                             | NC | 1000pF/2KV<br>MLCC | NC | NC |

| Model No.   | BS EN/EN55032 radiated Class B |                         |                    |                    |                       |
|-------------|--------------------------------|-------------------------|--------------------|--------------------|-----------------------|
|             | C1                             | C2                      | C3                 | C4                 | L1                    |
| SCW20 12Vin | 3.3μF/50V<br>1812 MLCC         | NC                      | 1000pF/2KV<br>MLCC | 1000pF/2KV<br>MLCC | 325μH<br>Common Choke |
| SCW20 24Vin | 4.7μF/50V<br>1812 MLCC         | NC                      | 1000pF/2KV<br>MLCC | 1000pF/2KV<br>MLCC | 325μH<br>Common Choke |
| SCW20 48Vin | 2.2μF/100V<br>1812 MLCC        | 2.2μF/100V<br>1812 MLCC | 1000pF/2KV<br>MLCC | 1000pF/2KV<br>MLCC | 325μH<br>Common Choke |

## Packing

| Standard Tube Packing                                                                                                                                                                                                                                                                                                                                     | 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>Product</p> <p>Tube Plugs</p> <p>520</p> <p>24</p> <p>21.3</p> <p>8.472</p> <p>Tube pattern</p>  <p>L</p> <p>W</p> <p>H</p> <p>CARTON<br/>L620 x W230 x H230</p> | 15                       | 330g             | 750                       | 17.3Kg             |

## Installation Manual

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