



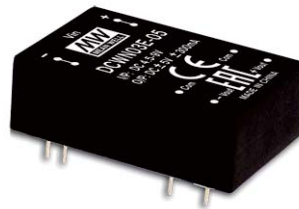
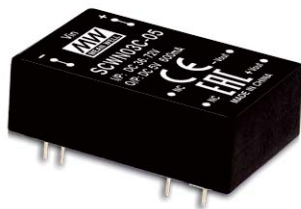
# THE DATASHEET OF SCWN03B-05





3W DIP Package DC-DC Regulated Converter

## SCWN03 & DCWN03 series



### ■ Features

- DIP24 package with industry standard pinout
- 2:1 wide input range
- Operating temperature range -40 ~ +90°C
- No minimum load required
- Comply to BS EN/EN55032 radiated Class A without additional components
- High efficiency up to 87%
- Protections: Short circuit (Continuous) / Overload / Input under voltage
- 3KVDC I/O isolation
- 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

SCWN03 and DCWN03 series are 3W isolated and regulated module type DC-DC converter with DIP24 package. It features international standard pins, a high efficiency up to 87%, wide working temperature range -40~+90°C, 3KVDC I/P-O/P isolation voltage, Compliance to BS EN/EN55032 radiated Class A without additional components, continuous-mode short circuit protection, etc. The additional components, models account for different input voltage 4.5~9V, 9~18V, 18~36V and 36~72V 2:1 wide input range, and various output voltage, 3.3V/5V/12V/15V for single output and  $\pm 5V/\pm 12V/\pm 15V$  for dual outputs, which are suitable for all kinds of systems, Such as industrial control, telecommunication field, distributed power architecture, and so on.

### ■ Model Encoding

**S** **CWN03** **E** - **12**

Output voltage (3.3/5/12/15Vdc ,  $\pm 5/\pm 12/\pm 15Vdc$ )

Input voltage (E: 4.5~9Vdc , A: 9~18Vdc , B: 18~36Vdc , C: 36~72Vdc)

Rated wattage

Series name { S:Single output  
D: Dual output



3W DIP Package DC-DC Regulated Converter

**SCWN03 & DCWN03 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 |                   |                   |                      |                          |
| SCWN03E-03            | 5V<br>(4.5 ~ 9V)         | 15mA          | 550mA     | 3.3V              | 600mA             | 73%                  | 2200μF                   |
| SCWN03E-05            |                          | 15mA          | 779mA     | 5V                | 600mA             | 78%                  | 2200μF                   |
| SCWN03E-12            |                          | 18mA          | 750mA     | 12V               | 250mA             | 80%                  | 2200μF                   |
| SCWN03E-15            |                          | 18mA          | 750mA     | 15V               | 200mA             | 81%                  | 2200μF                   |
| DCWN03E-05            |                          | 25mA          | 779mA     | ±5V               | ±0 ~ 300mA        | 77%                  | *1000μF                  |
| DCWN03E-12            |                          | 25mA          | 750mA     | ±12V              | ±0 ~ 125mA        | 80%                  | *1000μF                  |
| DCWN03E-15            |                          | 25mA          | 750mA     | ±15V              | ±0 ~ 100mA        | 80%                  | *1000μF                  |
| SCWN03A-03            | 12V<br>(9 ~ 18V)         | 5mA           | 212mA     | 3.3V              | 600mA             | 78%                  | 2200μF                   |
| SCWN03A-05            |                          | 5mA           | 309mA     | 5V                | 600mA             | 82%                  | 2200μF                   |
| SCWN03A-12            |                          | 10mA          | 298mA     | 12V               | 250mA             | 84%                  | 2200μF                   |
| SCWN03A-15            |                          | 10mA          | 294mA     | 15V               | 200mA             | 85%                  | 2200μF                   |
| DCWN03A-05            |                          | 10mA          | 305mA     | ±5V               | ±0 ~ 300mA        | 82%                  | *1000μF                  |
| DCWN03A-12            |                          | 12mA          | 298mA     | ±12V              | ±0 ~ 125mA        | 84%                  | *1000μF                  |
| DCWN03A-15            |                          | 15mA          | 294mA     | ±15V              | ±0 ~ 100mA        | 85%                  | *1000μF                  |
| SCWN03B-03            | 24V<br>(18 ~ 36V)        | 5mA           | 106mA     | 3.3V              | 600mA             | 78%                  | 2200μF                   |
| SCWN03B-05            |                          | 5mA           | 152mA     | 5V                | 600mA             | 82%                  | 2200μF                   |
| SCWN03B-12            |                          | 7.5mA         | 145mA     | 12V               | 250mA             | 86%                  | 2200μF                   |
| SCWN03B-15            |                          | 7.5mA         | 145mA     | 15V               | 200mA             | 86%                  | 2200μF                   |
| DCWN03B-05            |                          | 7.5mA         | 152mA     | ±5V               | ±0 ~ 300mA        | 82%                  | *1000μF                  |
| DCWN03B-12            |                          | 10mA          | 147mA     | ±12V              | ±0 ~ 125mA        | 87%                  | *1000μF                  |
| DCWN03B-15            |                          | 10mA          | 145mA     | ±15V              | ±0 ~ 100mA        | 87%                  | *1000μF                  |
| SCWN03C-03            | 48V<br>(36 ~ 72V)        | 3mA           | 52mA      | 3.3V              | 600mA             | 80%                  | 2200μF                   |
| SCWN03C-05            |                          | 3mA           | 74mA      | 5V                | 600mA             | 84%                  | 2200μF                   |
| SCWN03C-12            |                          | 3mA           | 73mA      | 12V               | 250mA             | 86%                  | 2200μF                   |
| SCWN03C-15            |                          | 5mA           | 73mA      | 15V               | 200mA             | 87%                  | 2200μF                   |
| DCWN03C-05            |                          | 5mA           | 73mA      | ±5V               | ±0 ~ 300mA        | 85%                  | *1000μF                  |
| DCWN03C-12            |                          | 5mA           | 73mA      | ±12V              | ±0 ~ 125mA        | 87%                  | *1000μF                  |
| DCWN03C-15            |                          | 5mA           | 74mA      | ±15V              | ±0 ~ 100mA        | 87%                  | *1000μF                  |

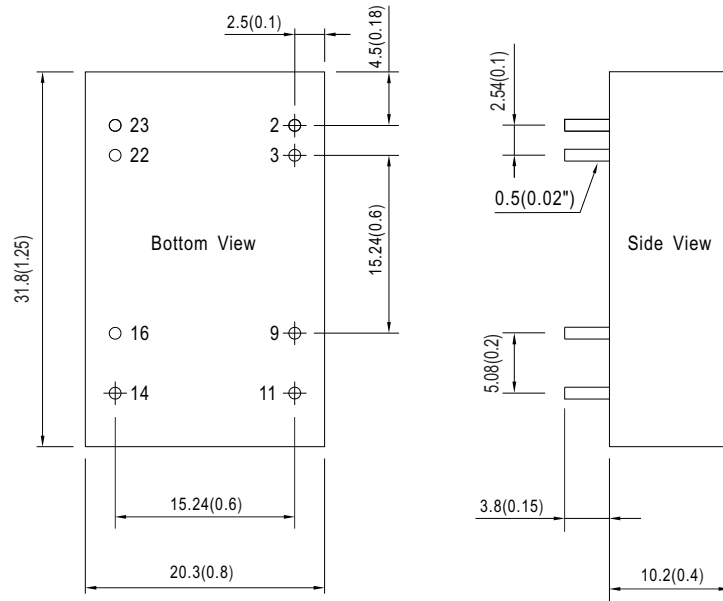
\* For each output



| SPECIFICATION             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                      |                                                         |                                   |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------|
| INPUT                     | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | E: 4.5~9Vdc , A: 9~18Vdc , B: 18~36Vdc , C: 36~72Vdc                                                                                                                 |                                                         |                                   |
|                           | SURGE VOLTAGE (100ms max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 5Vin models : 10Vdc ; 12Vin models : 25Vdc ; 24Vin models : 50Vdc ; 48Vin models : 100Vdc                                                                            |                                                         |                                   |
|                           | FILTER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Pi type                                                                                                                                                              |                                                         |                                   |
|                           | PROTECTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Fuse recommended. 5Vin models: 1.5A Fast-Acting Type, 12Vin models: 0.8A Fast-Acting Type, 24Vin models: 0.5A Fast-Acting Type, 48Vin models: 250mA Fast-Acting Type |                                                         |                                   |
|                           | INTERNAL POWER DISSIPATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 500mW                                                                                                                                                                |                                                         |                                   |
| OUTPUT                    | VOLTAGE ACCURACY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ± 1.5%                                                                                                                                                               |                                                         |                                   |
|                           | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3W                                                                                                                                                                   |                                                         |                                   |
|                           | RIPPLE & NOISE   Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 50mVp-p                                                                                                                                                              |                                                         |                                   |
|                           | LINE REGULATION   Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ± 0.5%                                                                                                                                                               |                                                         |                                   |
|                           | LOAD REGULATION   Note.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Single output models: ± 0.5%, Dual output models: ± 1%                                                                                                               |                                                         |                                   |
|                           | SWITCHING FREQUENCY (Min.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 100KHz                                                                                                                                                               |                                                         |                                   |
| PROTECTION                | SHORT CIRCUIT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Protection type : Continuous, automatic recovery                                                                                                                     |                                                         |                                   |
|                           | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 120 ~ 250% rated output power                                                                                                                                        |                                                         |                                   |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Protection type : Recovers automatically after fault condition is removed                                                                                            |                                                         |                                   |
|                           | UNDER VOLTAGE LOCKOUT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Start-up voltage                                                                                                                                                     | 5Vin: 4.4Vdc, 12Vin: 8.8Vdc, 24Vin: 17Vdc, 48Vin: 34Vdc |                                   |
| Shutdown voltage          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5Vin: 4.2Vdc, 12Vin: 8Vdc, 24Vin: 16Vdc, 48Vin: 31Vdc                                                                                                                |                                                         |                                   |
| ENVIRONMENT               | COOLING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Free-air convection                                                                                                                                                  |                                                         |                                   |
|                           | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -40 ~ +90℃ (Refer to "Derating Curve")                                                                                                                               |                                                         |                                   |
|                           | CASE TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +100℃ 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 approved                                                                                                                                          |                                                         |                                   |
|                           | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | I/P-O/P:3KVDC                                                                                                                                                        |                                                         |                                   |
|                           | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | I/P-O/P:100M Ohms / 500VDC / 25℃ / 70% RH                                                                                                                            |                                                         |                                   |
|                           | ISOLATION CAPACITANCE (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 250pF                                                                                                                                                                |                                                         |                                   |
|                           | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Parameter                                                                                                                                                            | Standard                                                | Test Level / Note                 |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Conducted                                                                                                                                                            | BS EN/EN55032(CISPR32)                                  | N/A                               |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Radiated                                                                                                                                                             | BS EN/EN55032(CISPR32)                                  | Class A                           |
|                           | 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                                                                                                                                                                 | 2500Khrs MIL-HDBK-217F(25℃)                             |                                   |
|                           | DIMENSION (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 31.8*20.3*10.2mm (1.25*0.8*0.4 inch)                                                                                                                                 |                                                         |                                   |
|                           | CASE MATERIAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Non-Conductive black plastic (UL 94V-0 rated)                                                                                                                        |                                                         |                                   |
|                           | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 12.3g ; 10pcs/per tube, 600pcs/60 tube/per carton                                                                                                                    |                                                         |                                   |
| NOTE                      | 1.All parameters are specified at normal input(E:5Vdc, 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 10% to 100% rated load for SCWN03, 25% to 100% rated load for DCWN03.<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

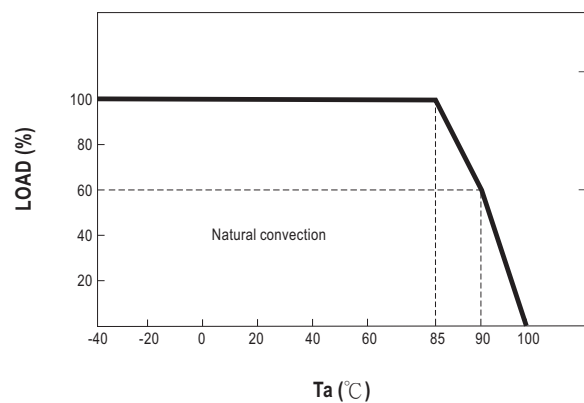
- All dimensions in mm(inch)
- Tolerance:  $x.x \pm 0.5\text{mm}$  ( $x.xx \pm 0.02"$ )  
 $x.xx \pm 0.25\text{mm}$  ( $x.xxx \pm 0.010"$ )
- Pin size is:  $0.5 \pm 0.05\text{mm}$  ( $0.02" \pm 0.002"$ )



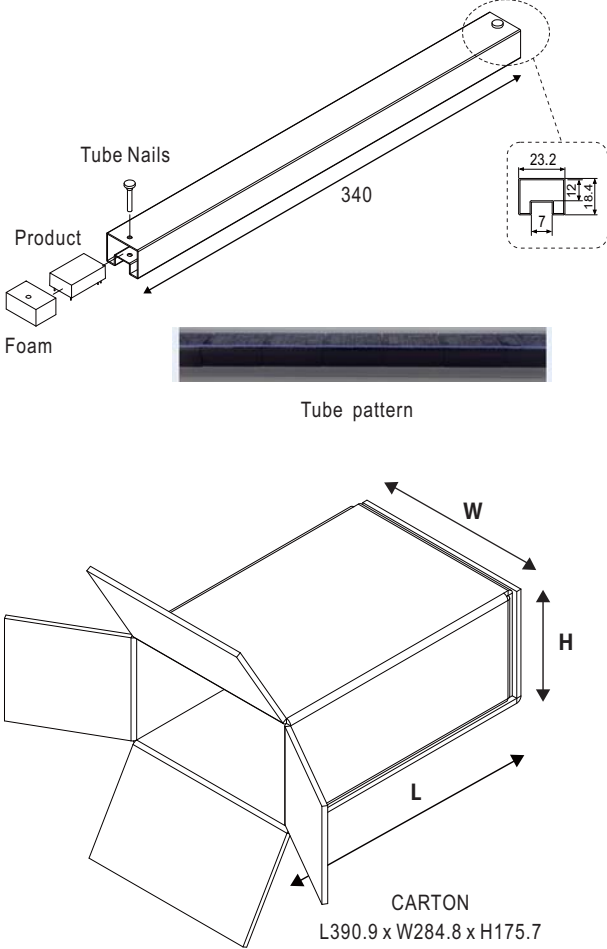
### ■ Plug Assignment

| Pin-Out |                           |                         |
|---------|---------------------------|-------------------------|
| Pin No. | SCWN03<br>(Single output) | DCWN03<br>(Dual output) |
| 2,3     | -Vin                      | -Vin                    |
| 9       | N.C.                      | Common                  |
| 11      | N.C.                      | -Vout                   |
| 14      | +Vout                     | +Vout                   |
| 16      | -Vout                     | Common                  |
| 22,23   | +Vin                      | +Vin                    |

### ■ Derating Curve



### ■ 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>Tube Nails</p> <p>Product</p> <p>Foam</p> <p>340</p> <p>23.2</p> <p>7</p> <p>Tube pattern</p> <p>CARTON<br/>L390.9 x W284.8 x H175.7</p> | 10                       | 147g             | 600                       | 10.82Kg            |

### ■ Installation Manual

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

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