



## Features

- SMD package with industry standard pinout
- Operating temperature range -40 ~ +90°C
- Comply to BS EN/EN55032 radiated Class B without additional components
- High efficiency up to 82%
- Protection: Short circuit
- 3KVDC I/O isolation
- Low cost
- Optional reel packing
- 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

SFTN01 series is 1W isolated and unregulated module type DC-DC converter with SMD package. It features international standard pins, a high efficiency up to 82%, wide working temperature range -40~+90°C, 3KVDC I/P-O/P isolation voltage, compliance to BS EN/EN55032 radiated Class B without additional components, short circuit protection, etc. The models account for different input voltage 5V/12V/24V±10%, and various output voltage, 5V/9V/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

SFTN01 **L** - **12** **SC**

Performance difference

Output voltage (5/9/12/15Vdc)

Input voltage (L: 4.5 ~ 5.5Vdc, M: 10.8 ~ 13.2Vdc, N: 21.6 ~ 26.4Vdc)

Rated wattage

Series name

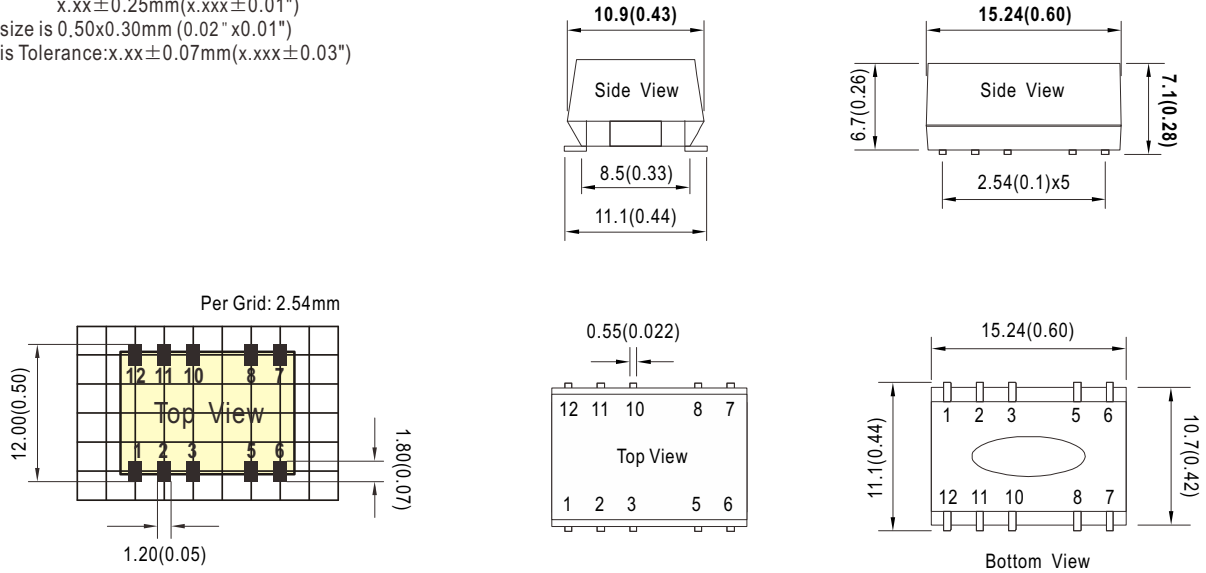
| Type  | Description                                                       | Note     |
|-------|-------------------------------------------------------------------|----------|
| Blank | -40~+90°C working temperature with max. 1 second short protection | In Stock |
| SC    | -40~+105°C working temperature with continuous short protection   | Optional |

| 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 |                   |                   |                      |                          |
| SFTN01L-05            | Normal 5V<br>(4.5 ~ 5.5V)    | 30mA          | 260mA     | 5V                | 20 ~ 200mA        | 80%                  | 220μF                    |
| SFTN01L-09            |                              | 30mA          | 260mA     | 9V                | 11.1 ~ 111mA      | 76%                  | 220μF                    |
| SFTN01L-12            |                              | 28mA          | 257mA     | 12V               | 8.4 ~ 84mA        | 80%                  | 220μF                    |
| SFTN01L-15            |                              | 30mA          | 253mA     | 15V               | 6.7 ~ 67mA        | 82%                  | 220μF                    |
| SFTN01M-05            | Normal 12V<br>(10.8 ~ 13.2V) | 13mA          | 107mA     | 5V                | 20 ~ 200mA        | 75%                  | 220μF                    |
| SFTN01M-09            |                              | 12mA          | 108mA     | 9V                | 11.1 ~ 111mA      | 77%                  | 220μF                    |
| SFTN01M-12            |                              | 12mA          | 103mA     | 12V               | 8.4 ~ 84mA        | 82%                  | 220μF                    |
| SFTN01M-15            |                              | 13mA          | 102mA     | 15V               | 6.7 ~ 67mA        | 82%                  | 220μF                    |
| SFTN01N-05            | Normal 24V<br>(21.6 ~ 26.4V) | 10mA          | 55mA      | 5V                | 20 ~ 200mA        | 77%                  | 220μF                    |
| SFTN01N-09            |                              | 10mA          | 55mA      | 9V                | 11.1 ~ 111mA      | 76%                  | 220μF                    |
| SFTN01N-12            |                              | 10mA          | 55mA      | 12V               | 8.4 ~ 84mA        | 75%                  | 220μF                    |
| SFTN01N-15            |                              | 10mA          | 55mA      | 15V               | 6.7 ~ 67mA        | 78%                  | 220μF                    |

| SPECIFICATION               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                    |                                   |                            |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------|
| INPUT                       | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | L: 4.5 ~ 5.5Vdc<br>M: 10.8 ~ 13.2Vdc<br>N: 21.6 ~ 26.4Vdc                                                                          |                                   |                            |
|                             | SURGE VOLTAGE (100ms max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 5Vin models : 9Vdc<br>12Vin models : 16Vdc<br>24Vin models : 30Vdc                                                                 |                                   |                            |
|                             | FILTER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Internal capacitor                                                                                                                 |                                   |                            |
|                             | PROTECTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Fuse recommended.<br>5Vin models: 750mA Slow-Blow Type<br>12Vin models: 300mA Slow-Blow Type<br>24Vin models: 150mA Slow-Blow Type |                                   |                            |
|                             | INTERNAL POWER DISSIPATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 500mW                                                                                                                              |                                   |                            |
| OUTPUT                      | VOLTAGE ACCURACY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ± 2.0%                                                                                                                             |                                   |                            |
|                             | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1W                                                                                                                                 |                                   |                            |
|                             | RIPPLE & NOISE    Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 75mVp-p                                                                                                                            |                                   |                            |
|                             | LINE REGULATION   Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1.2% for 1% input variation                                                                                                        |                                   |                            |
|                             | LOAD REGULATION   Note.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ± 8%                                                                                                                               |                                   |                            |
|                             | SWITCHING FREQUENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 100KHz                                                                                                                             |                                   |                            |
| PROTECTION                  | SHORT CIRCUIT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Standard model: 0.5 second max.<br>Optional models (SC-suffix): Continuous                                                         |                                   |                            |
| ENVIRONMENT                 | COOLING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Free-air convection                                                                                                                |                                   |                            |
|                             | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Standard model: -40 ~ +90℃ (Refer to "Derating Curve") ; Optional models (SC-suffix): -40 ~ +105℃                                  |                                   |                            |
|                             | CASE TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | +100℃ max.                                                                                                                         |                                   |                            |
|                             | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 20% ~ 90% RH non-condensing                                                                                                        |                                   |                            |
|                             | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -55 ~ +125℃, 10 ~ 95% RH non-condensing                                                                                            |                                   |                            |
|                             | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.03% / °C (0 ~ 85℃)                                                                                                               |                                   |                            |
|                             | SOLDERING TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1.5mm from case of 1 ~ 10sec./240℃ max.                                                                                            |                                   |                            |
|                             | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes                                                            |                                   |                            |
| SAFETY & EMC<br>( Note.5,6) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | UL62368-1(Except for 9V output models), 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.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 80pF                                                                                                                               |                                   |                            |
|                             | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Parameter                                                                                                                          | Standard                          | Test Level / Note( Note.6) |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Conducted                                                                                                                          | BS EN/EN55032(CISPR32)            | N/A                        |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Radiated                                                                                                                           | BS EN/EN55032(CISPR32)            | Class B                    |
|                             | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Parameter                                                                                                                          | Standard                          | Test Level / Note          |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ESD                                                                                                                                | BS EN/EN61000-4-2                 | Level 3, ±8KV air          |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Radiated Susceptibility                                                                                                            | BS EN/EN61000-4-3                 | Level 2, 3V/m              |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EFT/Burest                                                                                                                         | BS EN/EN61000-4-4                 | Level 1, 0.5KV             |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Surge                                                                                                                              | BS EN/EN61000-4-5                 | Level 2, 0.5KV Line-Line   |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Conducted                                                                                                                          | BS EN/EN61000-4-6                 | Level 2, 3V                |
| Magnetic Field              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | BS EN/EN61000-4-8                                                                                                                  | Level 1, 1A/m                     |                            |
| OTHERS                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | MTBF                                                                                                                               | 880Khrs min.   MIL-HDBK-217F(25℃) |                            |
|                             | DIMENSION (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 15.24*10.9*7.1mm (0.6*0.43*0.28 inch)                                                                                              |                                   |                            |
|                             | CASE MATERIAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Non-Conductive black plastic (UL 94V-0 rated)                                                                                      |                                   |                            |
|                             | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Standard : 1.2g ; 32pcs/per tube, 3840pcs/120 tube/per carton<br>Optional : 1.2g ; 500pcs/per reel, 2500pcs/5 reel/per carton      |                                   |                            |
| NOTE                        | 1.All parameters are specified at normal input(L:5Vdc, M:12Vdc, N:24Vdc), 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.<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>6.An external input filter capacitor is required if the module has to meet BS EN/EN61000-4-4, BS EN/EN61000-4-5.<br>The filter capacitor Power Mate suggest: 470μF/100V.<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

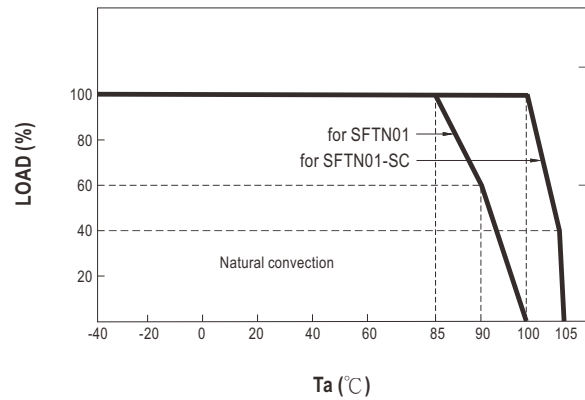
- All dimensions in mm(inch)
- Tolerance:  $x.xx \pm 0.5\text{mm}$  ( $x.xx \pm 0.02"$ )  
 $x.xx \pm 0.25\text{mm}$  ( $x.xxx \pm 0.01"$ )
- Pin size is 0.50x0.30mm (0.02" x 0.01")
- Pin is Tolerance:  $x.xx \pm 0.07\text{mm}$  ( $x.xxx \pm 0.03"$ )



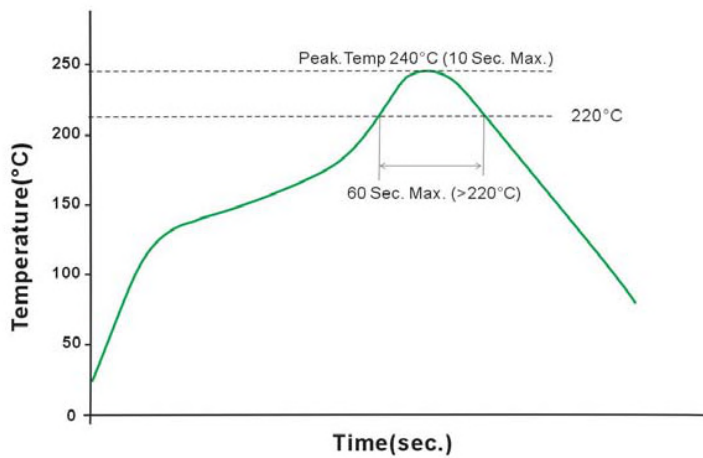
### Pin Assignment

| Pin No.        | Pin-Out |
|----------------|---------|
| 1              | -Vin    |
| 2              | +Vin    |
| 5              | -Vout   |
| 8              | +Vout   |
| 3,6,7,10,11,12 | N.C.    |

### Derating Curve

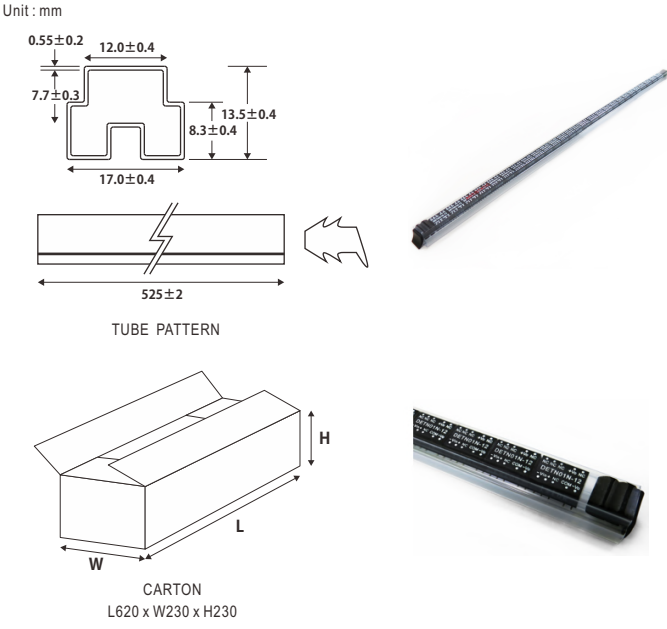
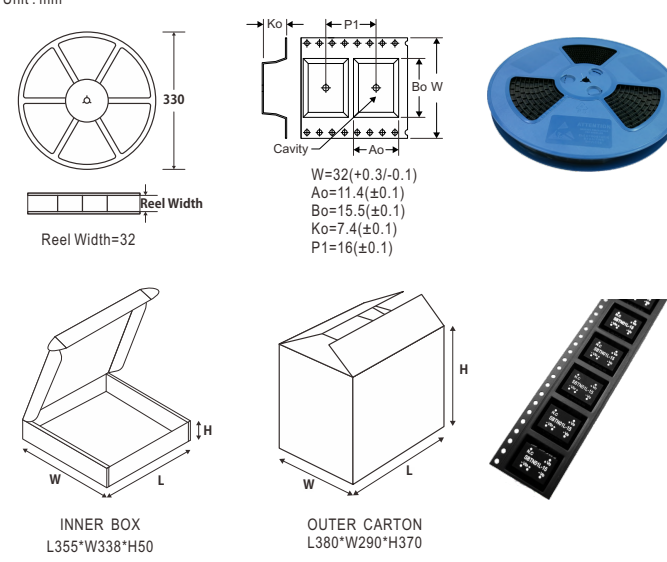


### Reflow Soldering Curve



Remark: The curve applies only to the hot air reflow soldering, Single-sided SMT process only.  
This product is limited to one reflow cycle on the TOP side.

## 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>0.55±0.2<br/>12.0±0.4<br/>7.7±0.3<br/>17.0±0.4<br/>13.5±0.4<br/>8.3±0.4<br/>525±2<br/>TUBE PATTERN</p> <p>CARTON<br/>L620 x W230 x H230</p>                                                                        | 32                       | 0.061Kg          | 3840                      | 8.12Kg             |
| Optional Reel Packing                                                                                                                                                                                                                                                                                                     | MPQ<br>Per Reel<br>(PCS) | One Box<br>G.W.  | Max. Q'TY/<br>Carton(PCS) | One Carton<br>G.W. |
| <p>Unit : mm</p>  <p>330<br/>Reel Width=32<br/>Reel Width=32</p> <p>W=32(+0.3/-0.1)<br/>Ao=11.4(±0.1)<br/>Bo=15.5(±0.1)<br/>Ko=7.4(±0.1)<br/>P1=16(±0.1)</p> <p>INNER BOX<br/>L355*W338*H50</p> <p>OUTER CARTON<br/>L380*W290*H370</p> | 500                      | 1.3Kg            | 2500                      | 7.3Kg              |