

■ Features

- SMD package with industry standard pinout
- Operating temperature range -40 ~ +100°C
- High efficiency up to 83%
- 2KVDC I/O isolation
- Low cost
- 3 years warranty

■ Applications

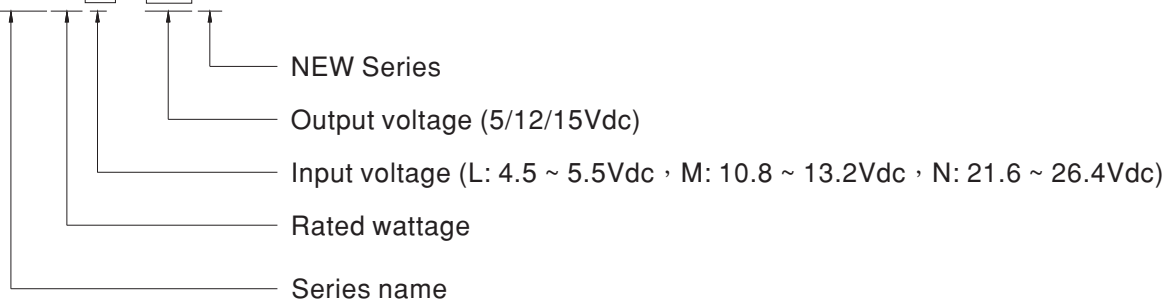
- Telecom/datacom system
- Wireless network
- Industrial control facility
- Instrument
- Analyzer
- Detector
- Data switch

■ Description

SBTN01-N series is 1W isolated and unregulated module type DC-DC converter with SMD package. It features international standard pins, a high efficiency up to 83%, wide working temperature range -40~+100°C, 2KVDC I/P-O/P isolation voltage, compliance to BS EN/EN55032. The models account for different input voltage 5V/12V/24V±10%, and various output voltage, 5V/12V/15V for single output which are suitable for all kinds of systems, Such as industrial control, telecommunication field, distributed power architecture, and so on.

■ Model Encoding

SBTN01L-12N





1W SMD Package DC-DC Unregulated Converter

SBTN01-N series

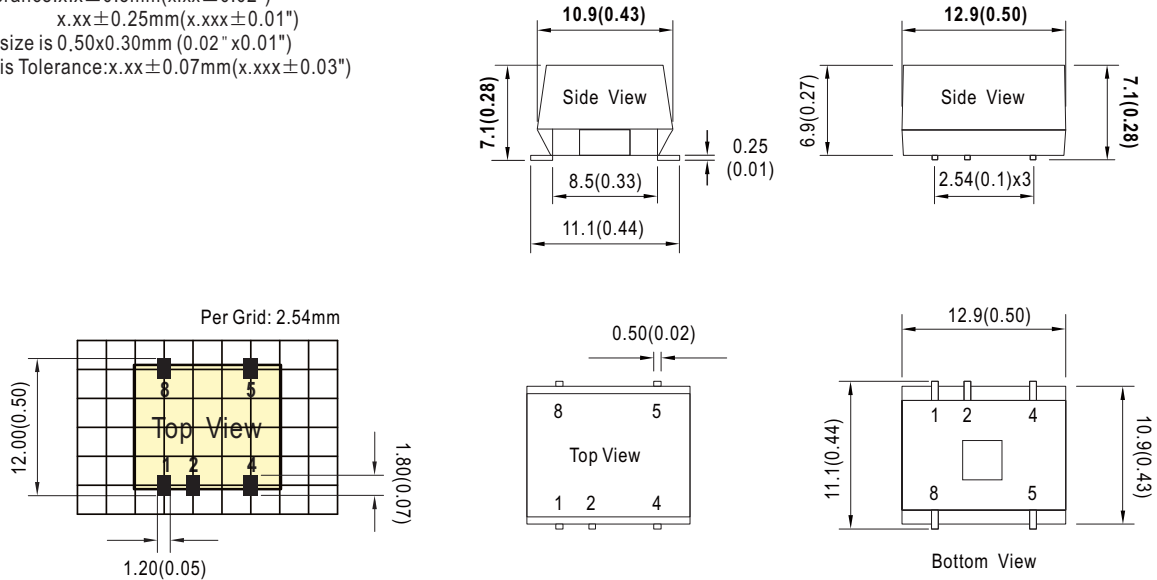
MODEL SELECTION TABLE							
ORDER NO.	INPUT			OUTPUT		EFFICIENCY (TYP.)	CAPACITOR LOAD (MAX.)
	INPUT VOLTAGE (RANGE)	INPUT CURRENT		OUTPUT VOLTAGE	OUTPUT CURRENT		
		NO LOAD	FULL LOAD				
SBTN01L-05N	5V (4.5 ~ 5.5V)	30mA	270mA	5V	20 ~ 200mA	77%	1000μF
SBTN01L-12N		30mA	257mA	12V	8.4 ~ 84mA	78%	330μF
SBTN01L-15N		30mA	253mA	15V	6.7 ~ 67mA	79%	220μF
SBTN01M-05N	12V (10.8 ~ 13.2V)	12mA	112mA	5V	20 ~ 200mA	73%	1000μF
SBTN01M-12N		12mA	102mA	12V	8.4 ~ 84mA	80%	330μF
SBTN01M-15N		12mA	102mA	15V	6.7 ~ 67mA	83%	220μF
SBTN01N-05N	24V (21.6 ~ 26.4V)	11mA	54mA	5V	20 ~ 200mA	73%	1000μF
SBTN01N-12N		11mA	54mA	12V	8.4 ~ 84mA	80%	330μF
SBTN01N-15N		11mA	54mA	15V	6.7 ~ 67mA	81%	220μF



SPECIFICATION				
INPUT	VOLTAGE RANGE	L: 4.5 ~ 5.5Vdc , M: 10.8 ~ 13.2Vdc , N: 21.6 ~ 26.4Vdc		
	FILTER	Internal capacitor		
	PROTECTION	Fuse recommended. 5Vin models: 750mA Slow-Blow Type, 12Vin models: 300mA Slow-Blow Type, 24Vin models: 150mA Slow-Blow Type		
	INTERNAL POWER DISSIPATION	500mW		
OUTPUT	VOLTAGE ACCURACY	±5.0%		
	RATED POWER	1W		
	RIPPLE & NOISE Note.2	100mVp-p		
	LINE REGULATION Note.3	1.2% for 1% input variation		
	LOAD REGULATION Note.4	5Vo : ±15%, 12/15Vo : ±10%		
	SWITCHING FREQUENCY (Typ.)	20KHz		
PROTECTION	SHORT CIRCUIT	0.5 second max.		
ENVIRONMENT	COOLING	Free-air convection		
	WORKING TEMP.	-40 ~ +100℃ (Refer to "Derating Curve")		
	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 (Note.5)	SAFETY STANDARDS	EAC TP TC 020/2011 approved		
	WITHSTAND VOLTAGE	I/P-O/P:2KVDC		
	ISOLATION RESISTANCE	I/P-O/P:10G Ohms / 500VDC / 25℃ / 70% RH		
	ISOLATION CAPACITANCE (Typ.)	75pF		
	EMC EMISSION	Parameter	Standard	Test Level / Note(Note.6)
		Conducted	BS EN/EN55032(CISPR32)	Class A/B with external components (see page 5)
		Radiated	BS EN/EN55032(CISPR32)	
	EMC IMMUNITY	Parameter	Standard	Test Level / Note
		ESD	BS EN/EN61000-4-2	±8KV air ; ±6KV contact, Criterion B
		Radiated Susceptibility	BS EN/EN61000-4-3	3V/m, Criterion A
		EFT/Burest	BS EN/EN61000-4-4	1KV at power, Criterion B
		Surge	BS EN/EN61000-4-5	0.5KV Line-Line, Criterion B
		Conducted	BS EN/EN61000-4-6	3Vrms, Criterion A
Magnetic Field		BS EN/EN61000-4-8	1A/m, Criterion A	
OTHERS	MTBF	955Khrs max. MIL-HDBK-217F(25℃)		
	DIMENSION (L*W*H)	12.9*10.9*7.1mm (0.50*0.43*0.28 inch)		
	CASE MATERIAL	Non-Conductive black plastic (UL 94V-0 rated)		
	PACKING	1g ; 40pcs/per tube, 1440pcs/36 tube/per carton		
NOTE	1.All parameters are specified at normal input(L:5Vdc, M:12Vdc, N:24Vdc), rated load, 25℃ 70% RH ambient. 2.Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1µf & 47µf capacitor. 3.Line regulation is measured from low line to high line at rated load. 4.Load regulation is measured from 10% to 100% rated load. 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 http://www.meanwell.com) 6.An external input filter capacitor is required if the module has to meet BS EN/EN61000-4-4, BS EN/EN61000-4-5. The filter capacitor Power Mate suggest: 220uF/100V. ※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx			

Mechanical Specification

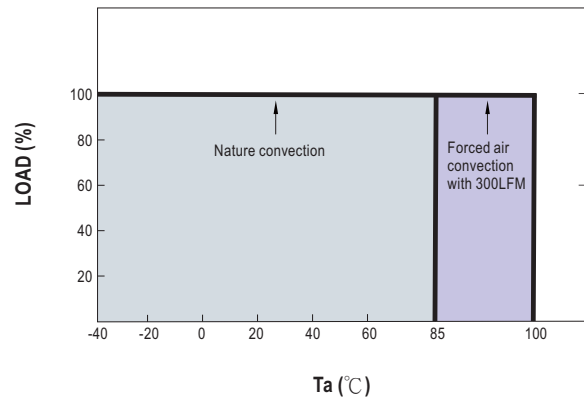
- All dimensions in mm(inch)
- Tolerance: $x.xx \pm 0.5\text{mm}$ ($x.xx \pm 0.02"$)
 $x.xx \pm 0.25\text{mm}$ ($x.xxx \pm 0.01"$)
- Pin size is $0.50 \times 0.30\text{mm}$ ($0.02" \times 0.01"$)
- Pin is Tolerance: $x.xx \pm 0.07\text{mm}$ ($x.xxx \pm 0.03"$)



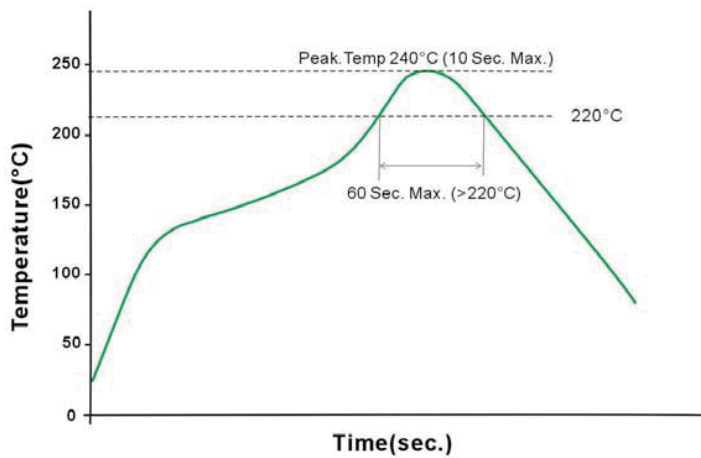
Plug Assignment

Pin No.	Pin-Out
1	-Vin
2	+Vin
4	-Vout
5	+Vout
8	N.C.

Derating Curve



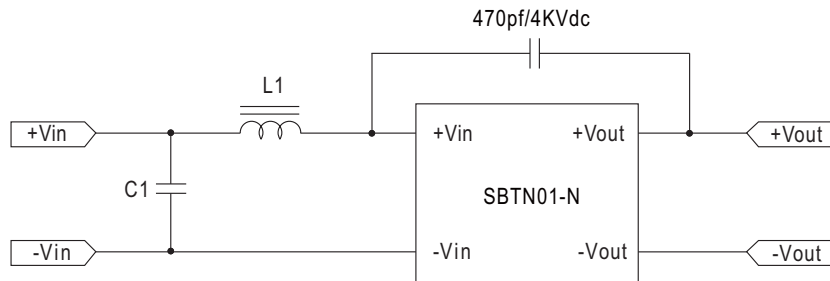
Reflow Soldering Curve



Remark: The curve applies only to the hot air reflow soldering.

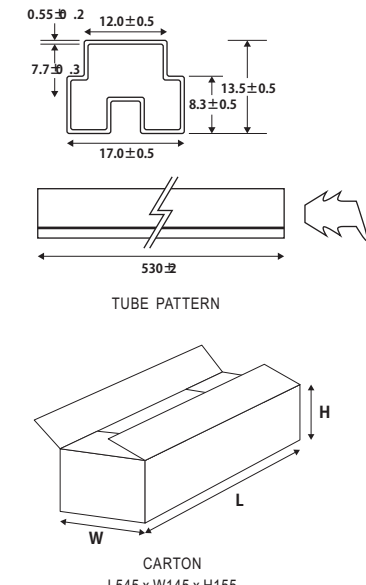
EMC Suggestion Circuit

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



Model No.	Class A		Class B	
	L1	C1	L1	C1
SBTN01L-xxN	2.2μH	2.2μF	10μH	2.2μF
SBTN01M-xxN	6.8μH	2.2μF	6.8μH	4.7μF
SBTN01N-xxN	22μH	4.7μF	22μH	4.7μF

Packing

Standard Tube Packing	MPQ Per Tube (PCS)	One Tube G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
Unit : mm  TUBE PATTERN CARTON L545 x W145 x H155	40	0.071Kg	1440	3Kg

Installation Manual

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