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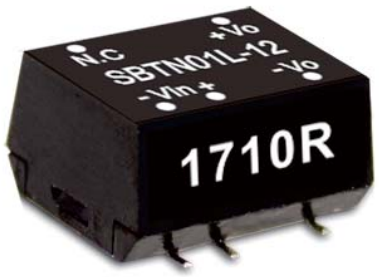
1W SMD Package DC-DC Unregulated Converter

SBTN01 series



UL62368-1 IEC62368-1

Automate Industrial Security Network Telecom

Features

- SMD package with industry standard pinout
- Operating temperature range -40 ~ +90℃
- Comply to BS EN/EN55032 radiated Class B without additional components
- High efficiency up to 84%
- Protection: Short circuit
- 1.5KVDC I/O isolation (3KVDC I/O isolation optional)
- 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

SBTN01 series is 1W isolated and unregulated module type DC-DC converter with SMD package. It features international standard pins, a high efficiency up to 84%, wide working temperature range -40~+90℃, 1.5KVDC 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 3.3V/5V/12V/24V±10%, and various output voltage, 3.3V/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

SBTN01 K – 12 SC

- SC — Performance difference
- 12 — Output voltage (3.3/5/9/12/15Vdc)
- K — Input voltage (K: 2.97 ~ 3.63Vdc，L: 4.5 ~ 5.5Vdc，M: 10.8 ~ 13.2Vdc，N: 21.6 ~ 26.4Vdc)
- 01 — Rated wattage
- SBTN — Series name

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

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				
SBTN01K-03	3.3V (2.97 ~ 3.63V)	40mA	406mA	3.3V	30 ~ 300mA	74%	470μF
SBTN01K-05		40mA	404mA	5V	20 ~ 200mA	75%	470μF
SBTN01L-03	5V (4.5 ~ 5.5V)	35mA	267mA	3.3V	30 ~ 300mA	75%	470μF
SBTN01L-05		30mA	270mA	5V	20 ~ 200mA	78%	220μF
SBTN01L-09		35mA	260mA	9V	11.1 ~ 111mA	77%	220μF
SBTN01L-12		30mA	257mA	12V	8.4 ~ 84mA	80%	220μF
SBTN01L-15		30mA	253mA	15V	6.7 ~ 67mA	79%	220μF
SBTN01M-03	12V (10.8 ~ 13.2V)	14mA	112mA	3.3V	30 ~ 300mA	75%	470μF
SBTN01M-05		12mA	112mA	5V	20 ~ 200mA	79%	220μF
SBTN01M-09		14mA	107mA	9V	11.1 ~ 111mA	78%	220μF
SBTN01M-12		12mA	102mA	12V	8.4 ~ 84mA	84%	220μF
SBTN01M-15		12mA	102mA	15V	6.7 ~ 67mA	83%	220μF
SBTN01N-03	24V (21.6 ~ 26.4V)	11mA	55mA	3.3V	30 ~ 300mA	75%	470μF
SBTN01N-05		11mA	54mA	5V	20 ~ 200mA	77%	220μF
SBTN01N-09		11mA	55mA	9V	11.1 ~ 111mA	76%	220μF
SBTN01N-12		11mA	54mA	12V	8.4 ~ 84mA	79%	220μF
SBTN01N-15		11mA	54mA	15V	6.7 ~ 67mA	78%	220μF

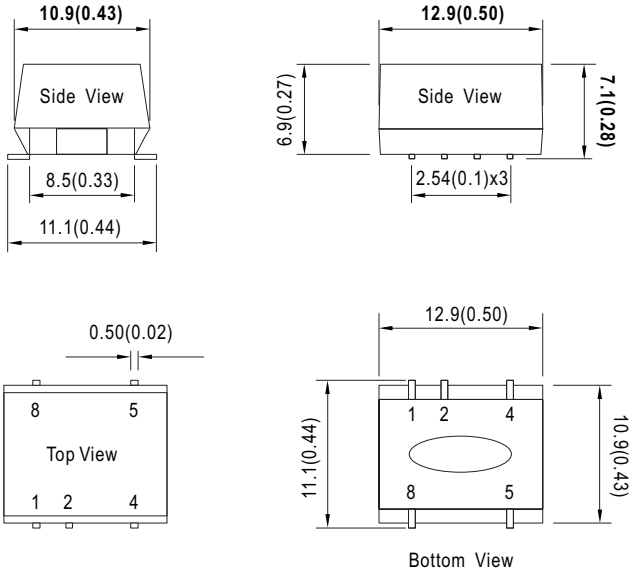
SPECIFICATION				
INPUT	VOLTAGE RANGE	K: 2.97 ~ 3.63Vdc , L: 4.5 ~ 5.5Vdc , M: 10.8 ~ 13.2Vdc , N: 21.6 ~ 26.4Vdc		
	SURGE VOLTAGE (100ms max.)	3.3, 5Vin models : 9Vdc ; 12Vin models : 16Vdc ; 24Vin models : 30Vdc		
	FILTER	Internal capacitor		
	PROTECTION	Fuse recommended. 3.3Vin models: 1000mA Slow-Blow Type, 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	±2% (Vo 3.3V for±3%)		
	RATED POWER	1W		
	RIPPLE & NOISE Note.2	75mVp-p		
	LINE REGULATION Note.3	1.2% for 1% input variation (1.5% for 1% input variation only for Vo 3.3V)		
	LOAD REGULATION Note.4	±8%		
	SWITCHING FREQUENCY (Typ.)	100KHz		
PROTECTION	SHORT CIRCUIT	Standard model: 0.5 second max. 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% / ℃ (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	UL62368-1(Except for 9V output models), EAC TP TC 020/2011 approved		
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVDC		
	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 ; Level 2, ±4KV contact
		Radiated Susceptibility	BS EN/EN61000-4-3	Level 2, 3V/m
		EFT/Bursts	BS EN/EN61000-4-4	Level 1, 0.5KV at power
		Surge	BS EN/EN61000-4-5	Level 2, 0.5KV Line-Line
		Conducted	BS EN/EN61000-4-6	Level 2, 3V(e.m.f.)
		Magnetic Field	BS EN/EN61000-4-8	Level 1, 1A/m
OTHERS	MTBF	880Khrs min. 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	Standard : 1.1g ; 38pcs/per tube, 4560pcs/120 tube/per carton Optional : 1.1g ; 500pcs/per reel, 2500pcs/5 reel/per carton		

NOTE

1.All parameters are specified at normal input(K:3.3Vdc, 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

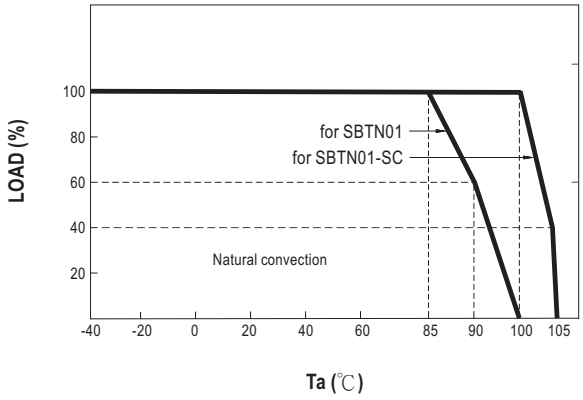
- All dimensions in mm(inch)
- Tolerance:x.x±0.5mm(x.xx±0.02")
  x.xx±0.25mm(x.xxx±0.01")
- Pin size is 0.50x0.30mm (0.02"x0.01")
- Pin is Tolerance:x.xx±0.07mm(x.xxx±0.03")



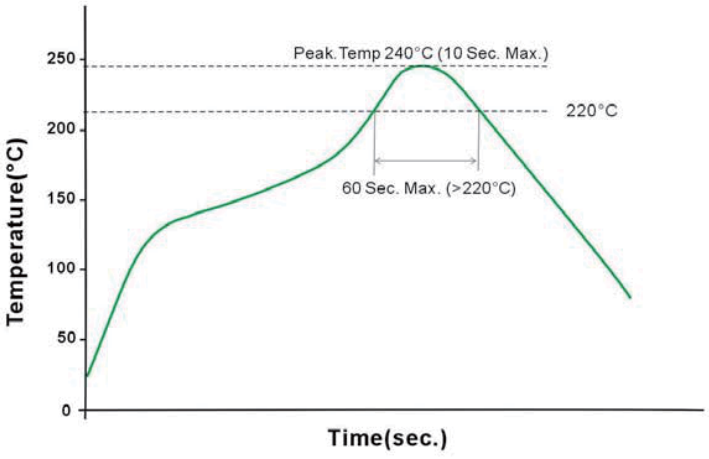
■ Plug Assignment

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

■ Derating Curve

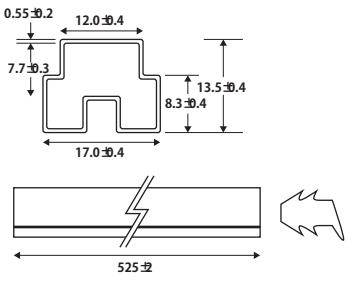
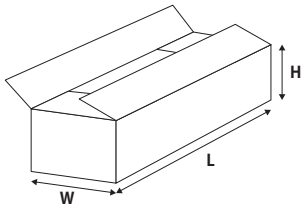


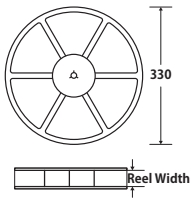
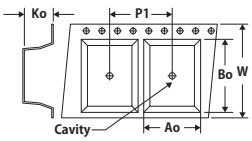
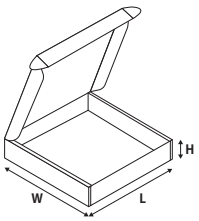
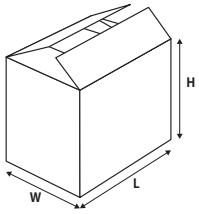
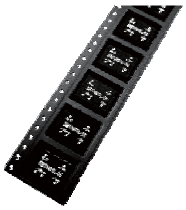
■ Reflow Soldering Curve



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

■ 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 L620 x W230 x H230 	38	0.06Kg	4560	8Kg

Optional Reel Packing	MPQ Per Reel (PCS)	One Box G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
Unit : mm  Reel Width=24  W=24(+0.3/-0.1) Ao=11.4(±0.1) Bo=13.2(±0.1) Ko=7.4(±0.1) P1=16(±0.1)   INNER BOX L355*W338*H50  OUTER CARTON L380*W290*H370 	500	1.2Kg	2500	6.8Kg

■ Installation Manual

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