

PART NUMBER: VIBLT-SMT series

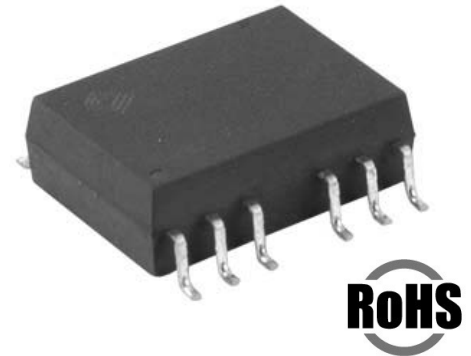
DESCRIPTION: DC/DC converter

### description

Designed for applications where a group of polar power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

### features

- SMD package
- temperature range: -40°C~+85°C
- 1K Vdc isolation
- internal SMD construction
- short circuit protection
- industry standard pinout
- no heatsink required
- no external component required
- RoHS compliant



model number	input voltage		output voltage	output current		efficiency (typ)
	nominal	range		max.	min.	
VIBLT1-S5-S5-SMT	5 Vdc	4.75~5.25 Vdc	5 Vdc	150 mA	15 mA	69%
VIBLT1-S5-S9-SMT	5 Vdc	4.75~5.25 Vdc	9 Vdc	111 mA	12 mA	70%
VIBLT1-S5-S12-SMT	5 Vdc	4.75~5.25 Vdc	12 Vdc	83 mA	9 mA	71%
VIBLT1-S5-S15-SMT	5 Vdc	4.75~5.25 Vdc	15 Vdc	67 mA	7 mA	72%
VIBLT1-S12-S5-SMT	12 Vdc	11.4~12.6 Vdc	5 Vdc	150 mA	15 mA	69%
VIBLT1-S12-S9-SMT	12 Vdc	11.4~12.6 Vdc	9 Vdc	111 mA	12 mA	70%
VIBLT1-S12-S12-SMT	12 Vdc	11.4~12.6 Vdc	12 Vdc	83 mA	9 mA	71%
VIBLT1-S12-S15-SMT	12 Vdc	11.4~12.6 Vdc	15 Vdc	67 mA	7 mA	72%
VIBLT1-S15-S5-SMT	15 Vdc	12.8~15.2 Vdc	5 Vdc	150 mA	15 mA	69%
VIBLT1-S15-S9-SMT	15 Vdc	12.8~15.2 Vdc	9 Vdc	111 mA	12 mA	70%
VIBLT1-S15-S12-SMT	15 Vdc	12.8~15.2 Vdc	12 Vdc	83 mA	9 mA	71%
VIBLT1-S15-S15-SMT	15 Vdc	12.8~15.2 Vdc	15 Vdc	67 mA	7 mA	72%
VIBLT1-S24-S5-SMT	24 Vdc	22.8~25.2 Vdc	5 Vdc	150 mA	15 mA	69%
VIBLT1-S24-S9-SMT	24 Vdc	22.8~25.2 Vdc	9 Vdc	111 mA	12 mA	70%
VIBLT1-S24-S12-SMT	24 Vdc	22.8~25.2 Vdc	12 Vdc	83 mA	9 mA	71%
VIBLT1-S24-S15-SMT	24 Vdc	22.8~25.2 Vdc	15 Vdc	67 mA	7 mA	72%

## OUTPUT SPECIFICATIONS

item	test conditions	min.	typ.	max.	units
output power		0.1		1	W
line regulation	for Vin change of 5%			±0.3	%
load regulation	10% to 100% full load			1	%
output voltage accuracy	@ full load			±3	%
temperature drift	@ 100% load			0.03	%/°C
output ripple	20 MHz bandwidth		10	20	mVp-p
output noise	20 MHz bandwidth		50	100	mVp-p
switching frequency	full load, nominal input		100		KHz

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## GENERAL SPECIFICATIONS

short circuit protection	continuous
temperature rise at full load	260°C Max, 1.5mm from case for 10 seconds
cooling	free air convection
operating temperature range	-40°C to +85°C
storage temperature range	-55°C to +125°C
lead temperature range	+15°C to +25°C
storage humidity range	<95%
case material	plastic (UL94-V0)
MTBF	>3,500,000 hrs.
weight	2.8 g

## ISOLATION SPECIFICATIONS

item	test conditions	min.	typ.	max	units
isolation voltage	tested for 1 min.	1000			Vdc
insulation resistance	test at 500 Vdc	1000			M $\Omega$

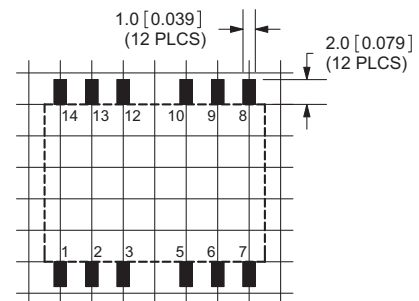
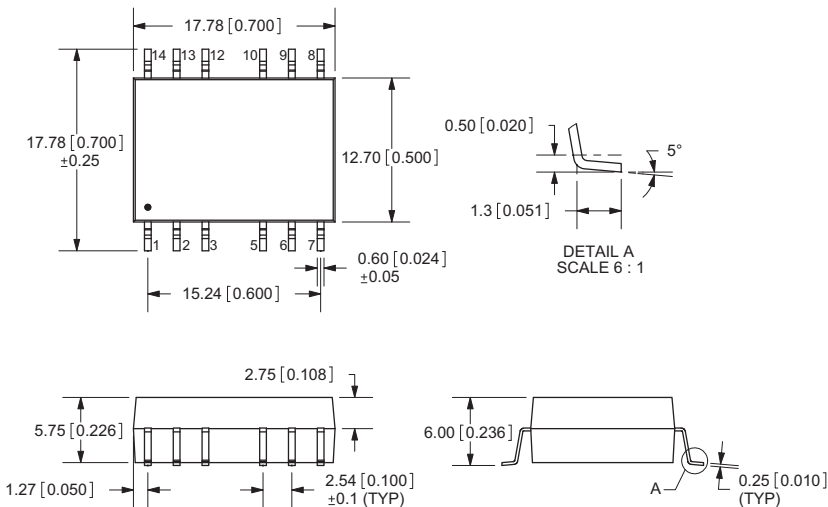
### NOTE:

- All specifications measured at TA=25°C, humidity <75%, nominal input voltage and rated output load unless otherwise specified.

## DIMENSIONS

mm(inches)

### RECOMMENDED FOOTPRINT Single Output



note:  
units: mm  
pin tolerance: ±0.10mm  
general tolerance: ±0.25mm

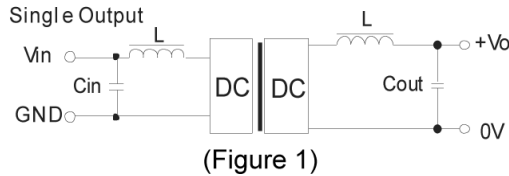
PIN CONNECTIONS	
pin	function
1	GND
2	Vin
6	0V
7	+Vo
others	NC

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## INPUT FILTERING

If you want to further decrease the input/output ripple, an "LC" filtering network may be connected to the input and output ends of the DC/DC converter as shown in Figure 1.



The inductance and frequency of the "LC" filtering network should be staggered with the DC/DC frequency to avoid mutual interference. However, the capacitance of the output filter capacitor must be proper. If the capacitance is too big, a startup problem might arise. For every channel of output, provided the safe and reliable operation is ensured, the greatest capacitance of its filter capacitor sees.

EXTERNAL CAPACITOR TABLE (Table 1)

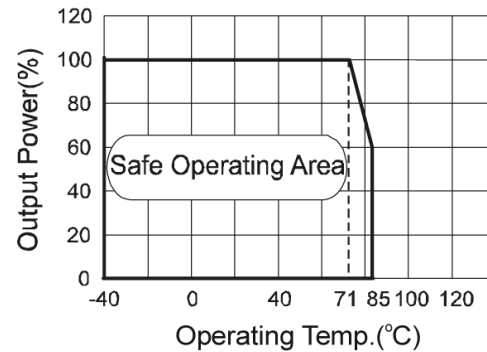
Vin (VDC)	Cin (uF)	Single Vout (VDC)	Cout (uF)
5	4.7	9	2.2
12	2.2	12	2.2
24	1	15	1

To ensure this module can operate efficiently and reliably during operation, the minimum output load is not less than 10% of the full load and the product should never be operated under no load. If the actual output power is very small, please connect a resistor with proper resistance at the output end in parallel to increase the load.

It's not recommended to connect any external capacitor in the application field with less than 0.5 watt output.

## TYPICAL CHARACTERISTICS

Temperature Derating Graph



## RECOMMENDED REFLOW SOLDERING PROFILE

