

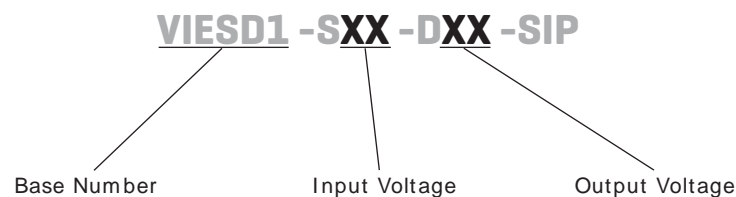
SERIES: VIESD1-SIP | **DESCRIPTION:** DC-DC CONVERTER

FEATURES

- isolated 1 W output
- regulated
- high efficiency to 73%
- dual voltage output
- small footprint
- SIP package style
- industry standard pinout
- UL94-V0 package
- no heatsink required
- 3,000 Vdc isolation
- temperature range: -40°C~ + 85°C
- no external component required
- low cost


MODEL

	input voltage		output voltage (Vdc)	output current		output power max (W)	ripple max (mVp-p)	noise max (mVp-p)	efficiency typ (%)
	typ (Vdc)	range (Vdc)		min (mA)	max (mA)				
VIESD1-S5-D5-SIP	5	4.75 ~ 5.25	5	± 10	± 100	1	15	15	69
VIESD1-S5-D9-SIP	5	4.75 ~ 5.25	9	± 6	± 56	1	15	15	70
VIESD1-S5-D12-SIP	5	4.75 ~ 5.25	12	± 5	± 42	1	15	15	72
VIESD1-S5-D15-SIP	5	4.75 ~ 5.25	15	± 4	± 33	1	15	15	72
VIESD1-S12-D5-SIP	12	11.4 ~ 12.6	5	± 10	± 100	1	15	15	70
VIESD1-S12-D9-SIP	12	11.4 ~ 12.6	9	± 6	± 56	1	15	15	72
VIESD1-S12-D12-SIP	12	11.4 ~ 12.6	12	± 5	± 42	1	15	15	73
VIESD1-S12-D15-SIP	12	11.4 ~ 12.6	15	± 4	± 33	1	15	15	73
VIESD1-S24-D5-SIP	24	22.8 ~ 25.2	5	± 10	± 100	1	15	15	72
VIESD1-S24-D9-SIP	24	22.8 ~ 25.2	9	± 6	± 56	1	15	15	72
VIESD1-S24-D12-SIP	24	22.8 ~ 25.2	12	± 5	± 42	1	15	15	73
VIESD1-S24-D15-SIP	24	22.8 ~ 25.2	15	± 4	± 33	1	15	15	73

PART NUMBER KEY


INPUT

parameter	conditions/description	min	typ	max	units
operating input voltage	5 V model	4.75	5	5.75	Vdc
	12 V model	11.4	12	12.6	Vdc
	24 V model	22.8	24	25.2	Vdc

OUTPUT

parameter	conditions/description	min	typ	max	units
line regulation	For Vin change of 1%, full load			0.25	%
load regulation	10% to 100% full load			1	%
voltage accuracy	100% full load			± 3	%
switching frequency	100% load, nominal input		100		kHz
Temperature coefficient				0.03	%/°C

PROTECTIONS

parameter	conditions/description	min	typ	max	units
short circuit protection	continuous, automatic recovery		< 1		s

SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	tested for 1 minute	3,000			Vdc
isolation resistance	at 500 Vdc	1,000			MΩ
RoHS compliant	yes				
MTBF		3,500,000			hrs

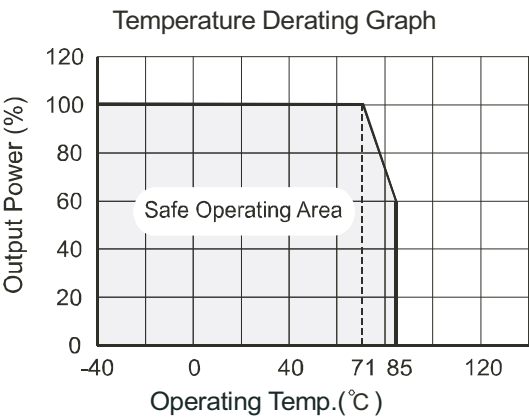
ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
case operating temperature		-40		85	°C
storage temperature		-55		125	°C
storage humidity	non-condensing			< 95	%
temperature rise	100% load		15	25	°C
lead temperature	1.5 mm from the case for 10 seconds			300	°C

Note:

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

DERATING CURVES

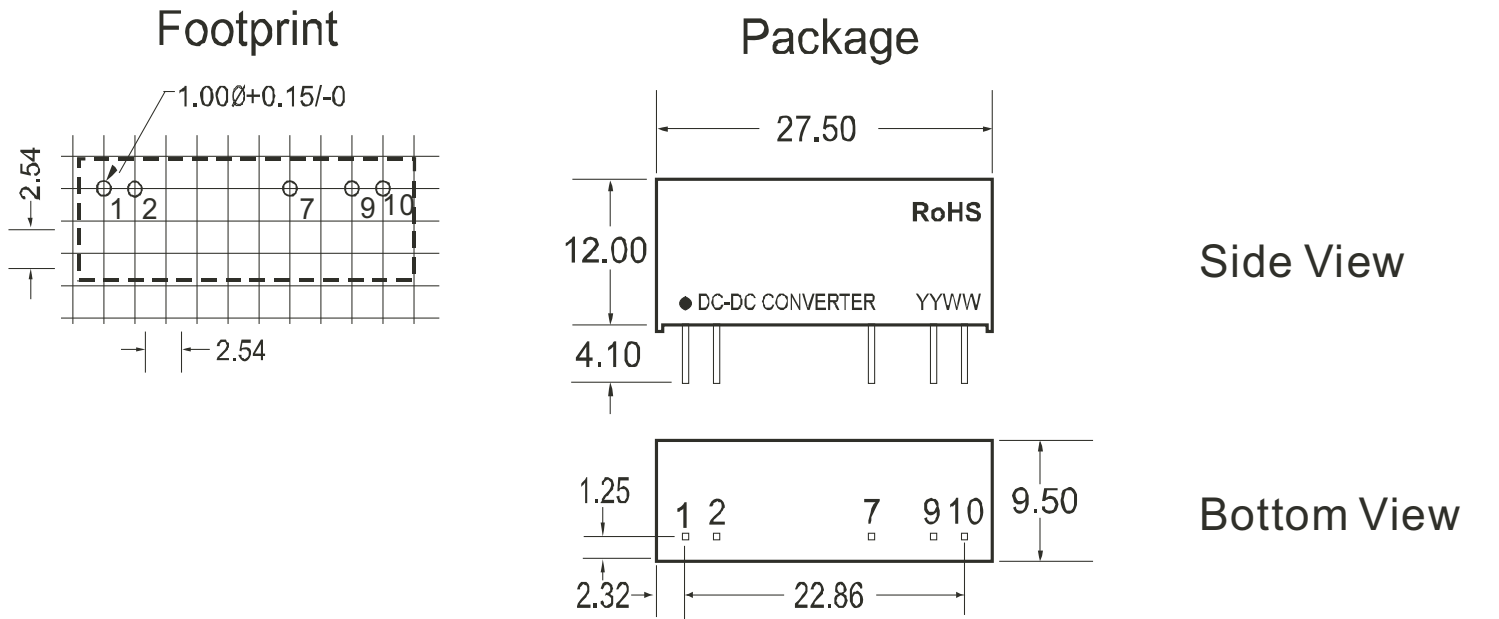


MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	1.08 x 0.37 x 0.47 inch (27.5 x 9.5 x 12.0 mm)				
case material	Plastic (UL94-V0)				
weight			2.1		g

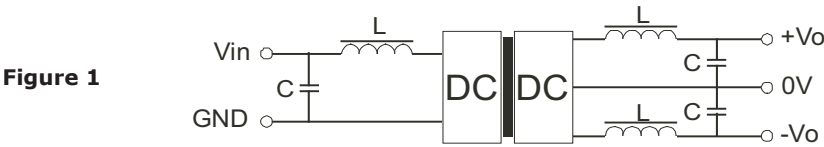
MECHANICAL DRAWING

Note: All Pins on a 2.54mm pitch; All Pin diameters are 0.50 mm; all dimensions in mm.



APPLICATION NOTES

1. **Filtering**
- To get an extreme low ripple, an “LC” fi ltering network may be connected to the input and output ends of the DC/DC converter, which may produce a more signifi cant fi ltering effect. It should also be noted that the inductance and the frequency of the “LC” filtering network should be staggered with the DC/DC frequency to avoid mutual interference see (see Figure 1).



In some circuits which are sensitive to noise and ripple, a fi ltering capacitor may be added to the DC/DC output end and input end to reduce the noise and ripple. However, the capacitance of the output fi lter capacitor must proper. If the capacitance is too big, a startup problem might arise. For every channel of output, providing the safe and reliable operation is ensured, the greatest capaci- tance of its filter capacitor refer to the external capacitor table (see Tables 1 and 2).

Table 1

Input Voltage (Vdc)	External Input Capacitance (μF)
5 V	4.7
12 V	2.2
24 V	1.0

Table 2

Vout (Vdc)	External Input Capacitance (μF)
±5 V	4.7
±9 V	2.2
±12 V	1.0
±15 V	0.47

2. **Overload protection**
- Under normal operating conditions, the output circuit of these products has no protection against over-current. The simplest method is to connect a self-recovery fuse in series at the input end or add a circuit breaker to the circuit. When the environment temperature is higher than 71°C, the product output power should be less then 60% of the rated power.
3. **No parallel connection or plug and play**
- Use dual output simultaneously, forbid opening output pin(0V) to use as single output.

REVISION HISTORY

rev.	description	date
1.0	initial release	06/27/2007
1.01	new template applied, V-Infinity branding removed	09/10/2012

The revision history provided is for informational purposes only and is believed to be accurate.



Headquarters
20050 SW 112th Ave.
Tualatin, OR 97062
800.275.4899

Fax 503.612.2383
cui.com
techsupport@cui.com

CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

CUI reserves the right to make changes to the product at any time without notice. Information provided by CUI is believed to be accurate and reliable. However, no responsibility is assumed by CUI for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

CUI products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.