



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



SERIES: VSK-S5 | **DESCRIPTION:** AC-DC POWER SUPPLY

FEATURES

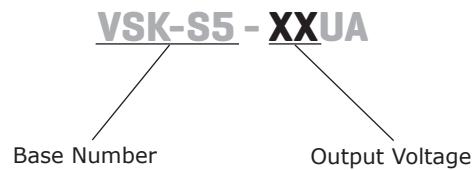
- up to 5.5 W continuous output
- compact board mount design
- universal input (85~264 Vac/110~370 Vdc)
- single regulated output from 3.3~24 Vdc
- over voltage, over temperature, and short circuit protections
- UL/cUL safety approvals
- efficiency up to 83%



| MODEL | output voltage | output current | output power | ripple and noise ¹ | efficiency |
|--------------|----------------|----------------|--------------|-------------------------------|------------|
| | (Vdc) | max (mA) | max (W) | max (mVp-p) | max (%) |
| VSK-S5-3R3UA | 3.3 | 1250 | 4.125 | 120 | 74 |
| VSK-S5-5UA | 5 | 1000 | 5 | 120 | 78 |
| VSK-S5-9UA | 9 | 550 | 5 | 100 | 78 |
| VSK-S5-12UA | 12 | 420 | 5 | 100 | 80 |
| VSK-S5-15UA | 15 | 333 | 5 | 100 | 82 |
| VSK-S5-24UA | 24 | 230 | 5.5 | 100 | 83 |

Notes: 1. Ripple and noise are measured at 20 MHz BW by "parallel cable" method with 1 µF ceramic and 10 µF electrolytic capacitors on the output.

PART NUMBER KEY



INPUT

| parameter | conditions/description | min | typ | max | units |
|-------------------------|--|-----|-------|-----|-------|
| voltage | | 85 | | 264 | Vac |
| | | 110 | | 370 | Vdc |
| frequency | | 47 | | 63 | Hz |
| current | at 110 Vac | | 110 | | mA |
| | at 230 Vac | | 70 | | mA |
| inrush current | at 110 Vac | | 10 | | A |
| | at 230 Vac | | 20 | | A |
| input fuse | recommended external 1 A/250 V, slow-blow type | | | | |
| temperature coefficient | | | ±0.02 | | %/°C |

OUTPUT

| parameter | conditions/description | min | typ | max | units |
|-----------------------------|------------------------|-----|------|------|-------|
| capcitive load ¹ | 3.3 Vdc model | | | 4000 | μF |
| | 5 Vdc model | | | 4000 | μF |
| | 9 Vdc model | | | 1000 | μF |
| | 12 Vdc model | | | 820 | μF |
| | 15 Vdc model | | | 820 | μF |
| | 24 Vdc model | | | 330 | μF |
| line regulation | | | ±0.5 | | % |
| load regulation | at 10~100% load | | ±1 | | % |
| voltage set accuracy | 3.3 Vdc model | | ±3 | | % |
| | all other models | | ±2 | | % |
| hold-up time | at 110 Vac | | 12 | | ms |
| | at 230 Vac | | 80 | | ms |
| switching frequency | | | | 140 | kHz |

Notes: 1. Test without external circuit

PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|--------------------------|------------------------|-----|-----|-----|-------|
| over voltage protection | shutdown | | | | |
| over current protection | auto recovery | 110 | | | % |
| short circuit protection | hiccup, auto recovery | | | | |

SAFETY & COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|---------------------|--|-------|-----|-----|-------|
| isolation voltage | for 1 minute | 4,000 | | | Vac |
| safety approvals | UL60950-1 | | | | |
| safety class | Class II | | | | |
| conducted emissions | CISPR22/EN55022, Class B | | | | |
| radiated emissions | CISPR22/EN55022, Class B | | | | |
| ESD | IEC/EN61000-4-2 Class B, contact ±6 kV / air ±8 kV | | | | |
| radiated immunity | IEC/EN61000-4-3 Class A, 10V/m | | | | |
| EFT/burst | IEC/EN61000-4-4 Class B, ±2 kV | | | | |
| | IEC/EN61000-4-4 Class B, ±4 kV (external circuit required, see figure 2) | | | | |
| surge | IEC/EN61000-4-5 Class B, ±1 kV / ±2 kV | | | | |
| | IEC/EN61000-4-5 Class B, ±2 kV / ±4 kV (external circuit required, see figure 2) | | | | |
| conducted immunity | IEC/EN61000-4-6 Class A, 10 Vr.m.s | | | | |
| PFM | IEC/EN61000-4-8 Class A, 10 A/m | | | | |

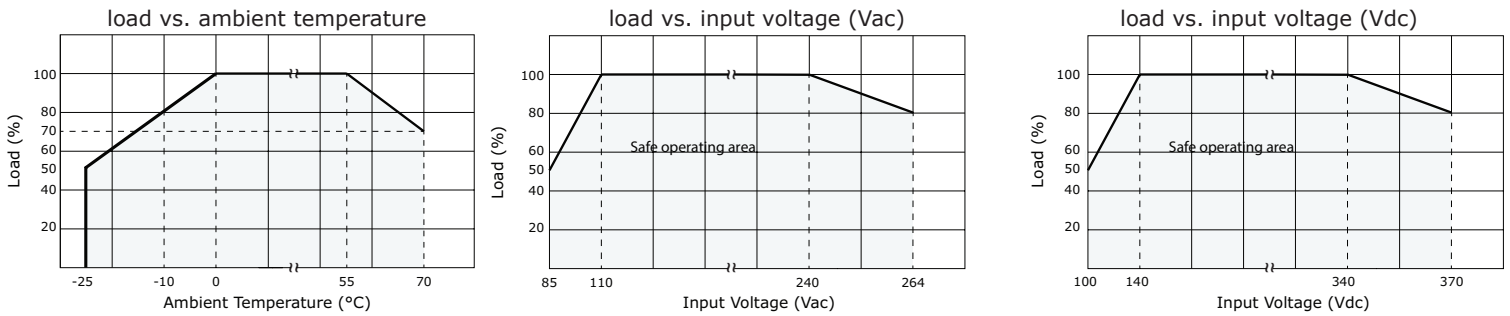
SAFETY & COMPLIANCE (CONTINUED)

| parameter | conditions/description | min | typ | max | units |
|------------------------------|----------------------------------|---------|-----|-----|-------|
| voltage dips & interruptions | IEC/EN61000-4-11 Class B, 0%-70% | | | | |
| MTBF | as per MIL-HDBK-217F, at 25 °C | 300,000 | | | hours |
| RoHS | 2011/65/EU | | | | |

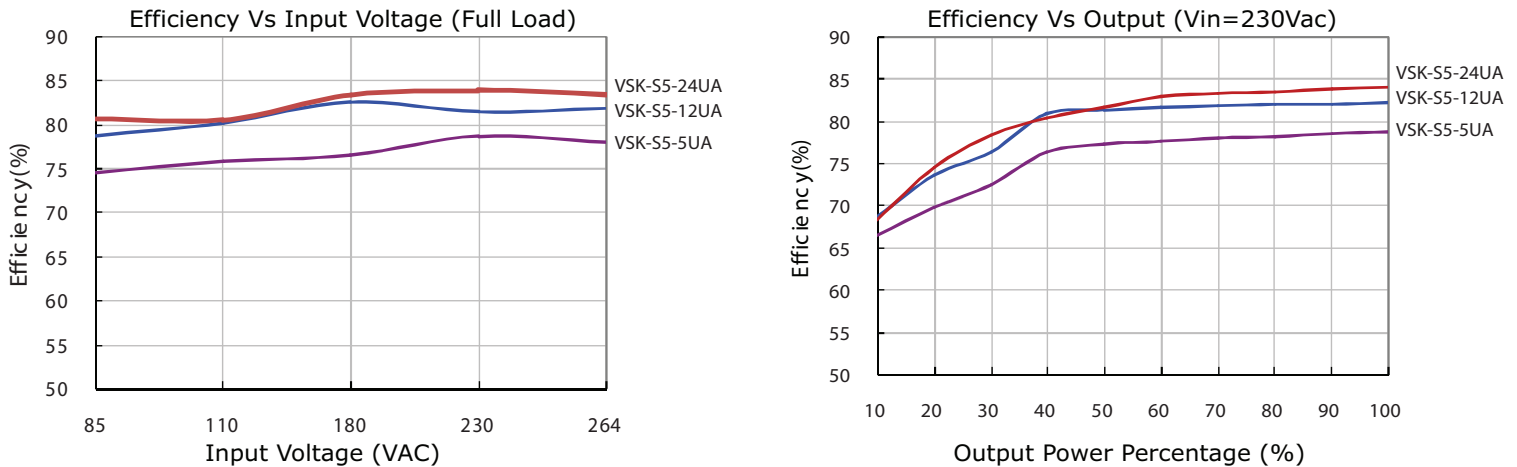
ENVIRONMENTAL

| parameter | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature | see derating curves | -25 | | 70 | °C |
| storage temperature | | -25 | | 105 | °C |
| storage humidity | non-condensing | | | 95 | % |

DERATING CURVES



EFFICIENCY CURVES



MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|------------|--|-----|-----|-----|-------|
| dimensions | 50.8 x 25.4 x 15.16 (2.00 x 1.00 x 0.597 inch) | | | | mm |
| material | UL94V-0 | | | | |
| weight | | | 31 | | g |

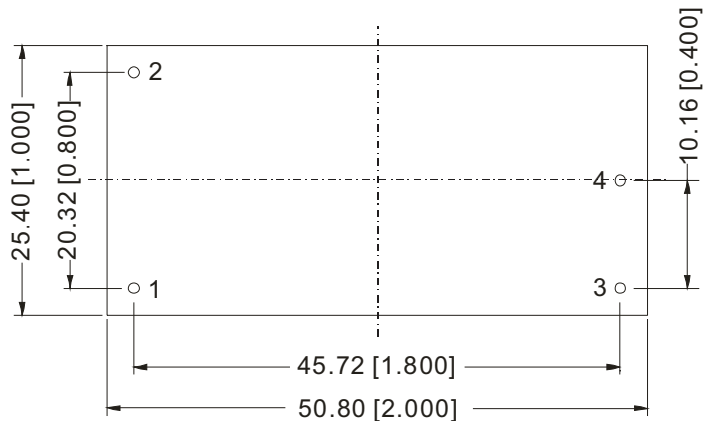
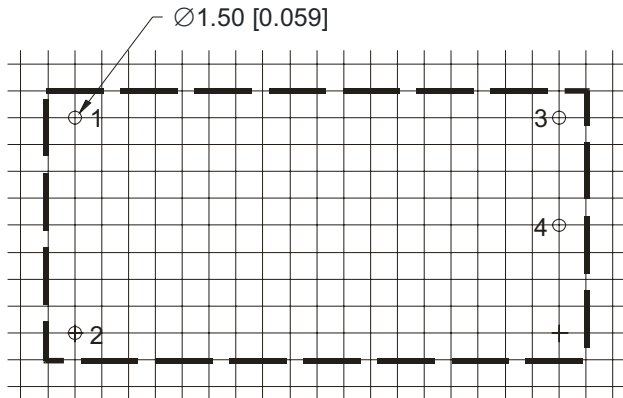
MECHANICAL DRAWING

units: mm [inch]
 tolerance: ± 0.50 [± 0.020]
 pin section tolerance: ± 0.10 [± 0.004]

| PIN CONNECTIONS | |
|-----------------|----------|
| PIN | FUNCTION |
| 1 | AC(N) |
| 2 | AC(L) |
| 3 | +Vo |
| 4 | -Vo |



Grid Size: 2.54 x 2.54mm



TYPICAL APPLICATION CIRCUIT

Figure 1

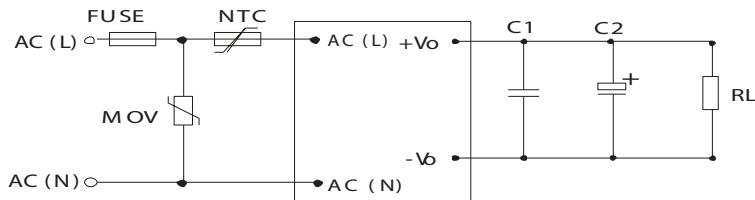


Table 1

| Recommended External Circuit Components | | | | | |
|---|----------------------|----------------------|-----------|-------|---------|
| MODEL | C1 ¹ (μF) | C2 ¹ (μF) | FUSE | NTC | MOV |
| VSK-S5-3R3UA | 1 | 220 | 1 A/250 V | 12D-5 | S14K350 |
| VSK-S5-5UA | 1 | 220 | 1 A/250 V | 12D-5 | S14K350 |
| VSK-S5-9UA | 1 | 100 | 1 A/250 V | 12D-5 | S14K350 |
| VSK-S5-12UA | 1 | 100 | 1 A/250 V | 12D-5 | S14K350 |
| VSK-S5-15UA | 1 | 100 | 1 A/250 V | 12D-5 | S14K350 |
| VSK-S5-24UA | 1 | 47 | 1 A/250 V | 12D-5 | S14K350 |

Note: 1. Output filtering capacitor C1 is a ceramic capacitor that is used to filter high frequency noise. C2 is an electrolytic capacitor. It is recommended to use high frequency and low impedance electrolytic capacitors. For capacitance and current of capacitor please refer to the manufacturer's datasheet. Voltage derating of capacitor should be 80% or above.

EMC RECOMMENDED CIRCUIT

Figure 2

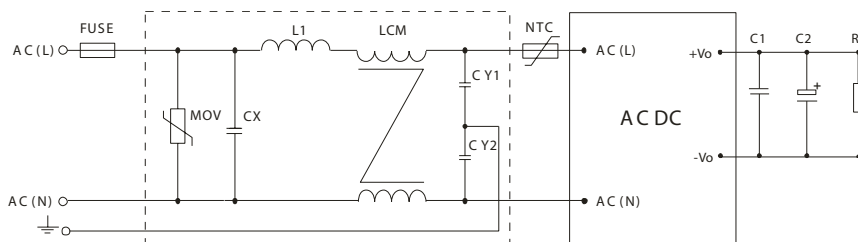


Table 2

| Recommended External Circuit Components | |
|---|---------------------------------|
| FUSE | 1A/250V, slow fusing, necessary |
| MOV | S14K350 |
| CY1, CY2 | 1nF/400VAC |
| CX | 0.1μF/275VAC |
| LCM | 2.2mH |
| L1 | 4.7μH/2.0A |
| C1, C2 | see Table 1 |

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

REVISION HISTORY

| rev. | description | date |
|------|--|------------|
| 1.0 | initial release | 07/26/2011 |
| 1.01 | new template applied | 03/06/2012 |
| 1.02 | V-Infinity branding removed | 08/21/2012 |
| 1.03 | added efficiency curves | 12/10/2012 |
| 1.04 | updated spec | 04/01/2013 |
| 1.05 | updated spec | 08/23/2013 |
| 1.06 | updated spec | 01/08/2014 |
| 1.07 | changed internal IC, updated datasheet | 06/05/2015 |

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.