

**SERIES:** VSK-S10 Series | **DESCRIPTION:** SWITCHING POWER SUPPLY

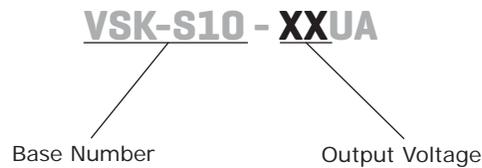
**FEATURES**

- Up to 10W continuous power
- Compact board mount design
- Universal input (85~264 Vac / 120~370 Vdc)
- Single output from 3.3 to 24 V
- Over current and short circuit protections
- UL/cUL safety approvals
- Efficiency up to 80%


**V-Infinity**


MODEL	output voltage	output current	output power	ripple and noise <sup>1</sup>	efficiency
	(Vdc)	max (A)	max (W)	typ (mVp-p)	typ (%)
VSK-S10-3R3UA	3.3	2	6.6	50	70
VSK-S10-5UA	5	2	10	50	74
VSK-S10-9UA	9	1.1	10	50	76
VSK-S10-12UA	12	0.9	10	50	76
VSK-S10-15UA	15	0.7	10	50	78
VSK-S10-24UA	24	0.45	10	50	80

Notes: 1. Ripple and noise measured at 20 MHz bandwidth

**PART NUMBER KEY**


**INPUT**

parameter	conditions/description	min	typ	max	units
voltage		85		264	Vac
		120		370	Vdc
frequency		47		63	Hz
input current	at 110 Vac, cold start		230		mA
	at 230 Vac, cold start		120		mA
inrush current	at 110 Vac, full load, cold start		10		A
	at 220 Vac, full load, cold start		20		A
external input fuse (recommended)	slow blow, 250 V		2		A
leakage current	230 V ac, 50 Hz		0.1		mA

**OUTPUT**

parameter	conditions/description	min	typ	max	units
line regulation			±0.5		%
load regulation	10 ~ 100%		±1		%
temperature coefficient			0.02		%/°C
hold-up time	at 230 Vac		50		ms
switching frequency			60		kHz

**PROTECTIONS**

parameter	conditions/description	min	typ	max	units
over current protection				110	%
short circuit protection	auto recovery with no damage from a short on any output				

**SAFETY & COMPLIANCE**

parameter	conditions/description	min	typ	max	units
isolation voltage	primary to secondary (for 1 minute)	4,000			Vac
safety approvals	IEC60950, EN60950, UL60950				
safety class	class II				
EMI/EMC <sup>1</sup>	EN55011 (level B), IEC/EN 61000-4-2 level 4 (8kV/15kV), IEC/EN 61000-4-3, IEC/EN 61000-4-4 level 4 (4kV), IEC/EN 61000-4-5 level 4 (2kV/4kV)				
RoHS compliant	yes				
MTBF	25°C	300,000			hrs

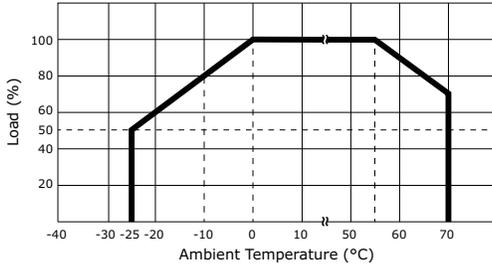
**ENVIRONMENTAL**

parameter	conditions/description	min	typ	max	units
operating temperature		-25		70	°C
storage temperature		-40		105	°C
case temperature				95	°C
operating humidity	non-condensing			95	%

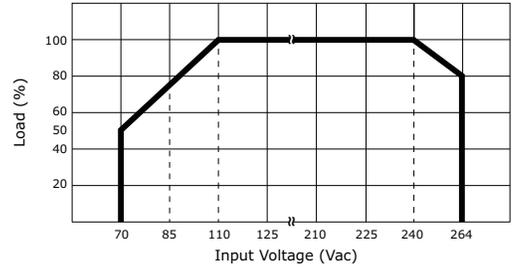
Notes: 1. external EMC application circuit is required

## DERATING CURVES

1. output power vs. ambient temperature



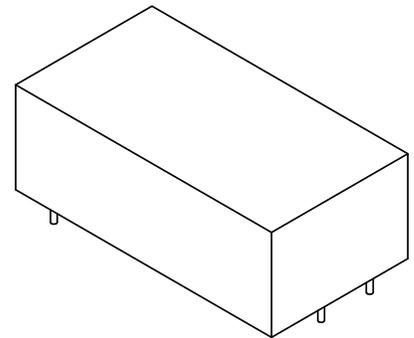
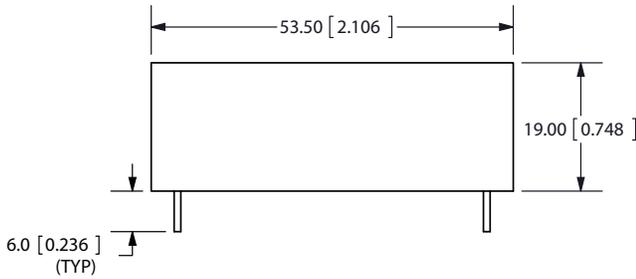
2. output power vs. input voltage



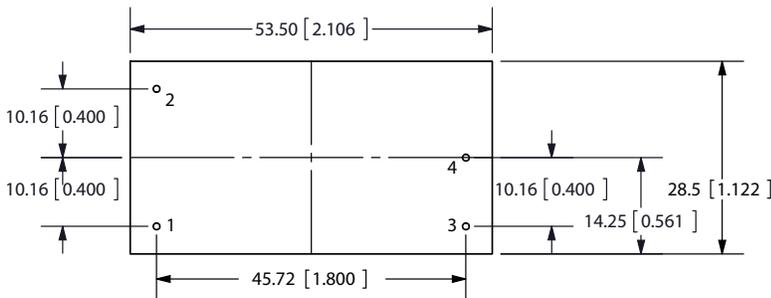
## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	2.1 x 1.12 x 0.75 inch (53.5 x 28.5 x 19.0 mm)				
case material	UL94V-0				

## MECHANICAL DRAWING



SCALE: 1:1



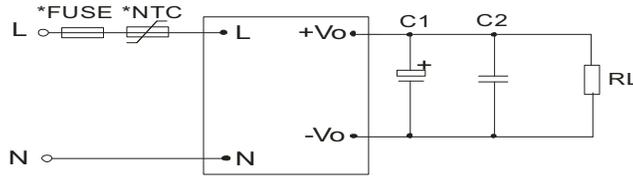
BOTTOM VIEW

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

NOTE:  
PIN DIAMETER: 1.00±0.1mm  
WEIGHT: 70g

TOLERANCE:  
±0.5mm UNLESS OTHERWISE  
SPECIFIED

## TYPICAL APPLICATION CIRCUIT



EXTERNAL CAPACITORS TYPICAL VALUE (Unit: $\mu\text{F}$ )		
MODEL	C1	C2
VSK-S10-3R3UA	220	0.1
VSK-S10-5UA	220	0.1
VSK-S10-9UA	120	0.1
VSK-S10-12UA	120	0.1
VSK-S10-15UA	120	0.1
VSK-S10-24UA	68	0.1

- Notes:
- Output filtering capacitors C1, and C2 are electrolytic capacitors, It is recommended to use high frequency and low impedance electrolytic capacitors. For capacitance and current of capacitor please refer to manufacture's datasheet. Voltage derating of capacitor should be 80% or above. C2 is used to filter high frequency noise. TVS is recommended component to protect post-circuits (when converter fails).
  - External input NTC is recommended to use 5D-9

## REVISION HISTORY

rev.	description	date
1.0	initial release	07/26/2011

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



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