

**SERIES:** VSK-S20 | **DESCRIPTION:** AC-DC POWER SUPPLY

**FEATURES**

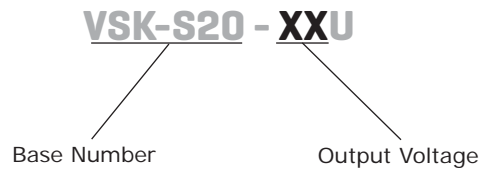
- up to 20W continuous power
- compact board mount design
- universal input (85~264 Vac / 120~370 Vdc)
- single output from 3.3~24 V
- over voltage, over temperature, and short circuit protections
- UL/cUL safety approvals
- efficiency up to 85%



<b>MODEL</b>	<b>output voltage (Vdc)</b>	<b>output current max (A)</b>	<b>output power max (W)</b>	<b>ripple and noise<sup>1</sup> typ (mVp-p)</b>	<b>efficiency typ (%)</b>
VSK-S20-3R3U	3.3	4.1	13.5	50	73
VSK-S20-5U	5	3.5	17.5	50	75
VSK-S20-9U	9	2.1	20	50	77
VSK-S20-12U	12	1.6	20	50	81
VSK-S20-15U	15	1.3	20	50	83
VSK-S20-24U	24	0.85	20	50	85

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
current	at 110 Vac, cold start		330		mA
	at 230 Vac, cold start		180		mA
inrush current	at 110 Vac, full load, cold start		16		A
	at 220 Vac, full load, cold start		30		A
external input fuse (recommended)	slow blow, 250 V		3.15		A
leakage current	230 V ac, 50 Hz		0.3		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		80		ms
adjustability			±10		%
switching frequency				150	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				
Over voltage protection	3.3 V, 5 V output			7.5	Vdc
	9 V output			12	Vdc
	12 V, 15V output			20	Vdc
	24 V output			30	Vdc

## SAFETY & COMPLIANCE

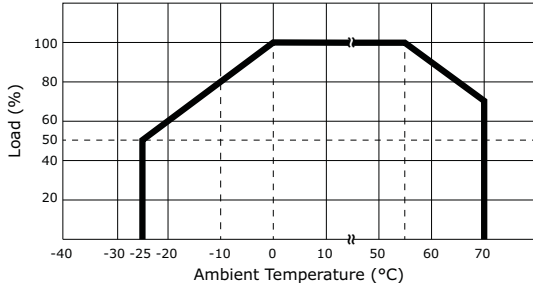
parameter	conditions/description	min	typ	max	units
isolation voltage	primary to secondary (for 1 minute)	3,000			Vac
safety approvals	UL 60950-1, EN 60950-1				
safety class	class II				
EMI/EMC	EN 55022 (level B), IEC/EN 61000-4-2 level 3 (6kV/8kV), IEC/EN 61000-4-3, IEC/EN 61000-4-4 level 3 (2kV), IEC/EN 61000-4-5 level 3 (1kV/2kV)				
RoHS compliant	yes				
MTBF	25°C	300,000			hrs

## ENVIRONMENTAL

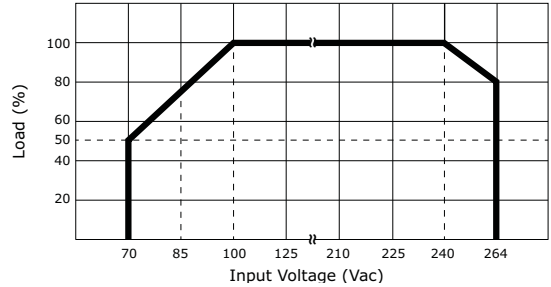
parameter	conditions/description	min	typ	max	units
operating temperature		-25		70	°C
storage temperature		-40		105	°C
case temperature				90	°C
operating humidity	non-condensing			85	%

## DERATING CURVES

1. output power vs. ambient temperature



2. output power vs. input voltage

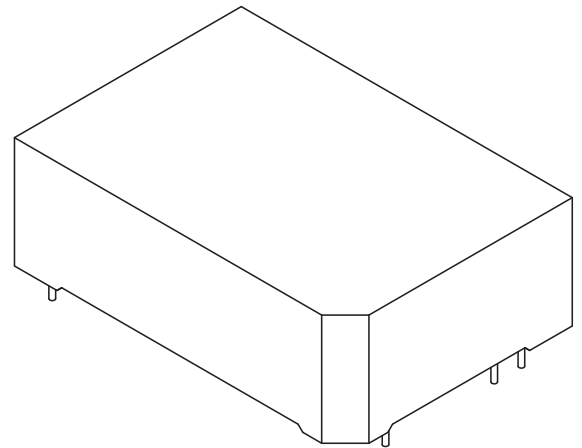
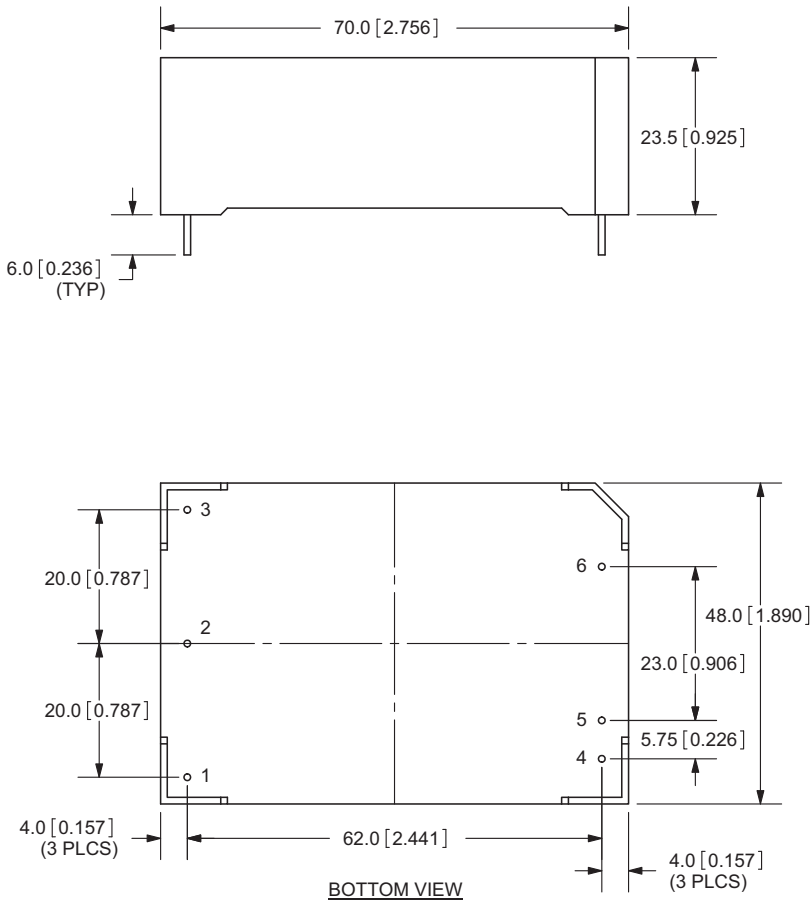


## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	2.75 x 1.89 x 0.92 (70.0 x 48.0 x 23.5 mm)				inch
case material	UL94V-0				

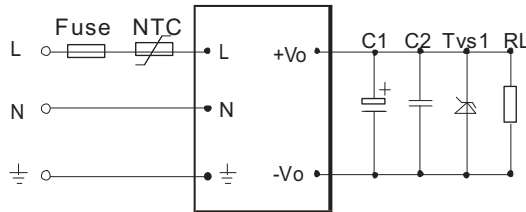
## MECHANICAL DRAWING

units: mm [inches]  
tolerance: ±0.5 [±0.02]



PIN CONNECTIONS	
PIN	FUNCTION
1	GND
2	AC(N)
3	AC(L)
4	Trim
5	-Vo
6	+Vo

## TYPICAL APPLICATION CIRCUIT



EXTERNAL CAPACITORS TYPICAL VALUE (Unit: $\mu\text{F}$ )		
MODEL	C1	C2
VSK-S20-3R3U	330	0.1
VSK-S20-5U	330	0.1
VSK-S20-12U	220	0.1
VSK-S20-15U	220	0.1
VSK-S20-24U	220	0.1

- Notes:
1. 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. TVS is recommended component to protect post-circuits (when converter fails).
  2. C2 is optional and used to filter high frequency noise.

## REVISION HISTORY

rev.	description	date
1.0	initial release	07/26/2011
1.01	new template applied	03/07/2012
1.02	V-Infinity branding removed	08/21/2012

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



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