

**SERIES:** VGS-100W | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

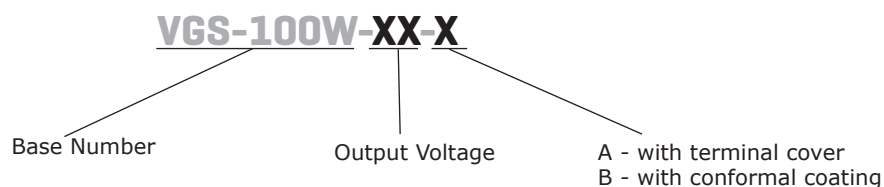
**FEATURES**

- wide input range (85 ~ 305 VAC)
- available with conformal coating or terminal cover options
- UL/EN/IEC 62368 certified
- designed to meet IEC/EN 61558 and IEC/EN 60335 system requirements
- short-circuit, over-current, over-voltage protections
- CISPR/EN55032 Class B radiated/conducted emissions



MODEL	output voltage	output current	output power	ripple and noise <sup>1</sup>	efficiency <sup>2</sup>
	(Vdc)	max (A)	max (W)	typ (mVp-p)	typ (%)
VGS-100W-5	5	18.0	90	100	85.5
VGS-100W-12	12	8.5	102	120	87.0
VGS-100W-15	15	7.0	105	120	87.0
VGS-100W-24	24	4.5	108	150	89.5
VGS-100W-36	36	2.8	100	200	89.5
VGS-100W-48	48	2.3	110	200	90.5

Notes: 1. Ripple & noise are measured at 20 MHz BW with 47  $\mu$ F aluminum electrolytic capacitor and 0.1  $\mu$ F ceramic capacitor on the output.  
 2. Measured at 230 Vac.

**PART NUMBER KEY**


## INPUT

parameter	conditions/description	min	typ	max	units
voltage	ac input	85		305	Vac
	dc input	120		431	Vdc
frequency		47		63	Hz
current	at 115 Vac			3	A
	at 230 Vac			1.5	A
inrush current	at 115 Vac, cold start		35		A
	at 230 Vac, cold start		65		A
leakage current	at 277 Vac			0.75	mA
no load power consumption	at 230 Vac, 5 Vdc, 12 Vdc, 15 Vdc, 24 Vdc output			0.3	W
	at 230 Vac, 36 Vdc, 48 Vdc output			0.5	W

## OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	5 Vdc output			10,000	μF
	12 Vdc output			6,800	μF
	15 Vdc output			3,300	μF
	24 Vdc output			2,200	μF
	36 Vdc output			1,000	μF
	48 Vdc output			470	μF
line regulation	rated load		±0.5		%
load regulation	0% ~ 100%, 5 Vdc output		±1		%
	0% ~ 100%, other outputs		±0.5		%
hold-up time	at 115 Vac		10		ms
	at 230 Vac		55		ms
switching frequency			65		kHz
temperature coefficient			±0.03		%/°C
adjustability	built in trim pot		±10		%
initial set point accuracy	5 Vdc output		±2		%
	other outputs		±1		%

## PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	5 Vdc output, clamp, auto recovery			7.5	Vdc
	12 Vdc output, clamp, auto recovery			19.2	Vdc
	15 Vdc output, clamp, auto recovery			24	Vdc
	24 Vdc output, clamp, auto recovery			38.4	Vdc
	36 Vdc output, clamp, auto recovery			57.6	Vdc
	48 Vdc output, clamp, auto recovery			60	Vdc
over current protection	auto recovery	110		160	%
short circuit protection	continuous, hiccup, auto recovery				

## SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to ground, 1 min. <10mA	2,000			Vac
	input to output, 1 min. <10mA	4,000			Vac
	output to ground, 1 min. <10mA	1,250			Vac
safety approvals	certified to 62368: IEC, EN, UL				
	designed to meet 60335: IEC, EN				
	designed to meet 61558: IEC, EN				
safety class	class I				
EMI/EMC	CISPR 32/EN 55032 Class B, IEC 61000-3-2 Class A				
ESD	IEC/EN 61000-4-2 Contact ±6KV/Air ±8KV perf. criteria A				
radiated immunity	IEC/EN 61000-4-3 10 V/m perf. criteria A				

## SAFETY & COMPLIANCE

EFT/burst	IEC/EN 61000-4-4 ±2KV perf. criteria A		
surge	IEC/EN 61000-4-5 line to line ±2KV/line to ground ±4KV perf. criteria A		
conducted immunity	IEC/EN 61000-4-6 10 Vr.m.s perf. criteria A		
voltage dips and interruption	IEC/EN 61000-4-11 0%, 70% perf. criteria B		
MTBF	as per MIL-HDBK-217F at 25°C	300,000	hours
RoHS	yes		

## ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature		-30		70	°C
storage temperature		-40		85	°C
operating humidity	non-condensing	20		90	%
storage humidity	non-condensing	10		95	%

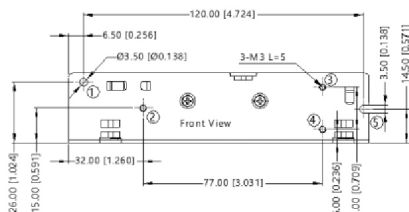
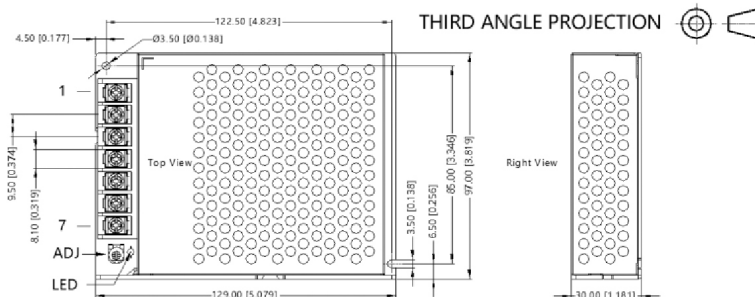
## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	129.00 x 97.00 x 30.00 mm				mm
weight	5 Vdc output other outputs		325 305		g
cooling	free air convection				
case material	Metal (AL1100, SGCC)				

## MECHANICAL DRAWING

units: mm  
tolerance: ±1 [±0.039]

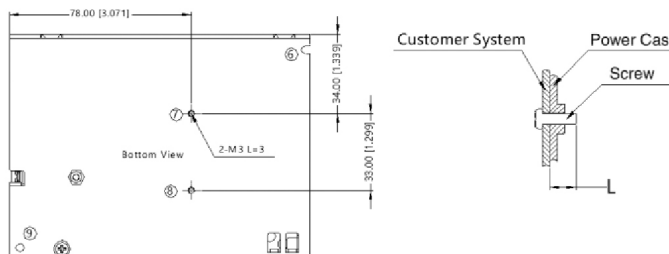
PIN CONNECTIONS	
PIN	Function
1	AC(L)
2	AC(N)
3	⊕
4	-Vo
5	-Vo
6	+Vo
7	+Vo



Position	Screw spec.	L (max)	Torque (max)
② - ④	M3	5 mm	0.4N·m
⑦ - ⑧	M3	3 mm	0.4N·m

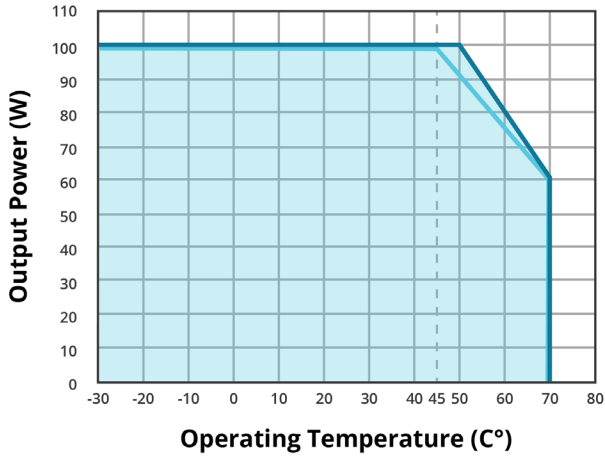
Note: At least one hole position, ①~⑨ must be securely connected to Protective Earth (PE)⊕

wire range: 22-12 AWG  
connector tightening torque: M3.5, 0.8 N·m

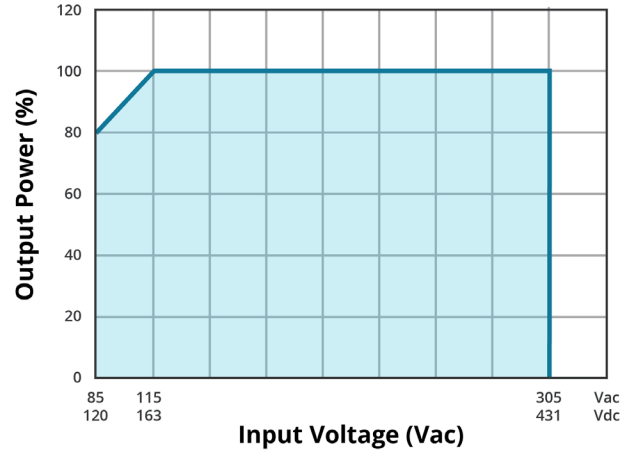


## DERATING CURVE

**TEMPERATURE DERATING CURVE**

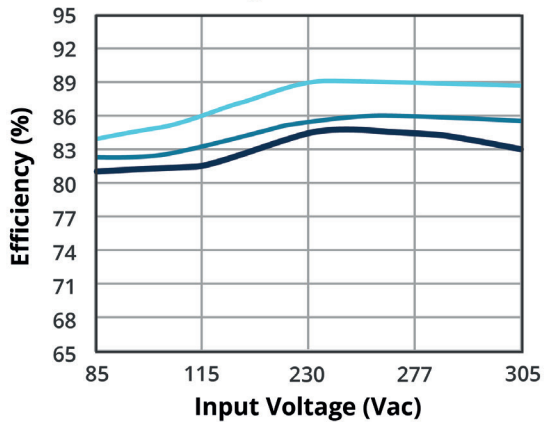


**INPUT VOLTAGE DERATING CURVE (25 °C)**

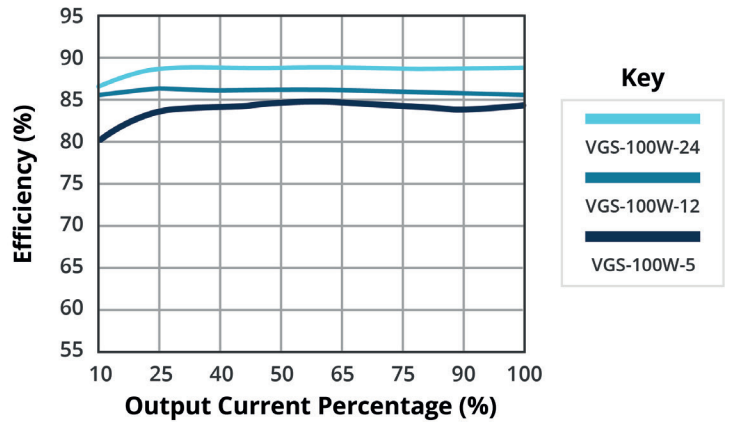


## EFFICIENCY CURVES

**EFFICIENCY VS INPUT LOAD (full load)**



**EFFICIENCY VS OUTPUT LOAD (at 230 Vac)**



## REVISION HISTORY

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rev.	description	date
1.0	initial release	09/02/2020
1.01	derating and efficiency curves updated	06/04/2021

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

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