

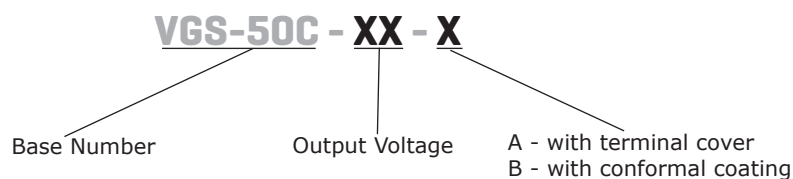
**SERIES: VGS-50C | DESCRIPTION: INTERNAL AC-DC POWER SUPPLY**
**FEATURES**

- universal input range (85 ~ 264 VAC)
- UL/EN/IEC 62368 certified
- designed to meet IEC/EN 61558, IEC/EN 60335, and GB 4943 system requirements
- short-circuit, over-current, over-voltage protections
- CISPR/EN55032 Class B radiated/conducted emissions
- output adjustable via trimpot +/- 10%



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-50C-5	5	10.0	50.0	80	86
VGS-50C-12	12	4.2	50.4	120	87
VGS-50C-15	15	3.4	51.0	120	88
VGS-50C-24	24	2.2	52.8	150	89
VGS-50C-36	36	1.45	52.2	200	89
VGS-50C-48	48	1.1	52.8	200	90

Notes: 1. Ripple & noise are measured at 20 MHz BW with 47 µF aluminum electrolytic capacitor and 0.1 µF 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		264	Vac
	dc input	120		373	Vdc
frequency		47		63	Hz
current	at 115 Vac			1.2	A
	at 230 Vac			0.8	A
inrush current	at 115 Vac, cold start		30		A
	at 230 Vac, cold start		50		A
leakage current	at 240 Vac			0.75	mA
no load power consumption				0.3	W

## OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	5 Vdc output			8,500	μF
	12 Vdc output			2,000	μF
	15 Vdc output			1,500	μF
	24 Vdc output			1,000	μF
	36 Vdc output			800	μF
	48 Vdc output			680	μF
initial set point accuracy	5 Vdc output, full load		±2		%
	other outputs, full load		±1		%
line regulation			±0.5		%
load regulation	0%~100% load				
	5 Vdc output other outputs		±1 ±0.5		% %
adjustability	built in trim pot	±10			%
hold-up time	at 115 Vac	8			ms
	at 230 Vac	30			ms
switching frequency			65		kHz
temperature coefficient			±0.03		%/°C

## PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	5 Vdc output, clamp			6.3	Vdc
	12 Vdc output, clamp			16.2	Vdc
	15 Vdc output, clamp			21.75	Vdc
	24 Vdc output, clamp			33.6	Vdc
	36 Vdc output, clamp			48.6	Vdc
	48 Vdc output, clamp			60.0	Vdc
over current protection	auto-recovery	110		200	%
short circuit protection	hiccup, continuous, auto-recovery				

## SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to ground	2,000			Vac
	input to output	4,000			Vac
	output to ground	1,250			Vac
safety approvals	certified to:	62368:	IEC/EN/UL		
	designed to meet:	60335:	IEC/EN		
	designed to meet:	61558:	IEC/EN		
	designed to meet:	4943:	GB		
safety class	Class I				
EMI/EMC	CISPR32/EN55032 Class B, IEC/EN61000-3-2 Class A				
ESD	IEC/EN 61000-4-2 Contact ±6KV /Air ±8KV, perf. Criteria A				

## SAFETY & COMPLIANCE

radiated immunity	IEC/EN 61000-4-3 10V/m, perf. Criteria A		
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/EN61000-4-6 10 Vr.m.s, perf. Criteria A		
voltage dips and interruptions	IEC/EN61000-4-11 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	0		95	%

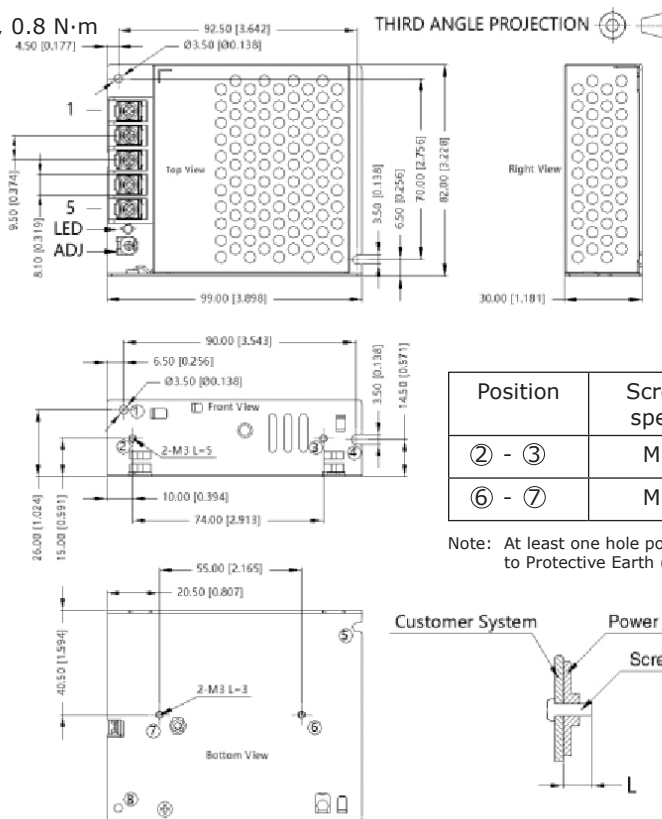
## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	99.00 x 82.00 x 30.00				mm
weight			180		g
cooling	natural convection				
case material	metal (AL1100, SGCC)				

## MECHANICAL DRAWING

units: mm [inch]  
 tolerance: ±1.0 [±0.039]  
 wire range: 22-12 AWG  
 connector tightening torque: M3.5, 0.8 N·m

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

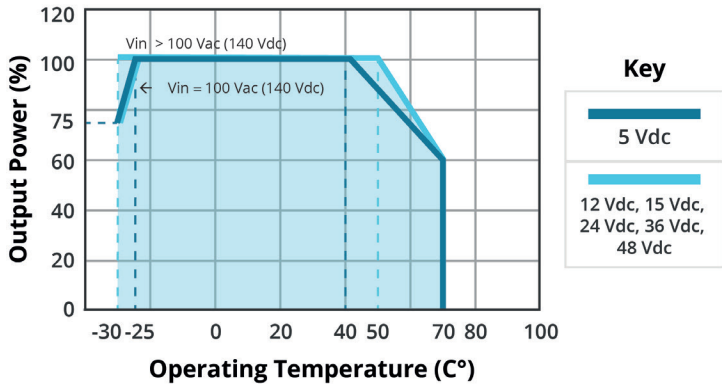


Position	Screw spec.	L (max)	Torque (max)
② - ③	M3	5 mm	0.4 N·m
⑥ - ⑦	M3	3 mm	0.4 N·m

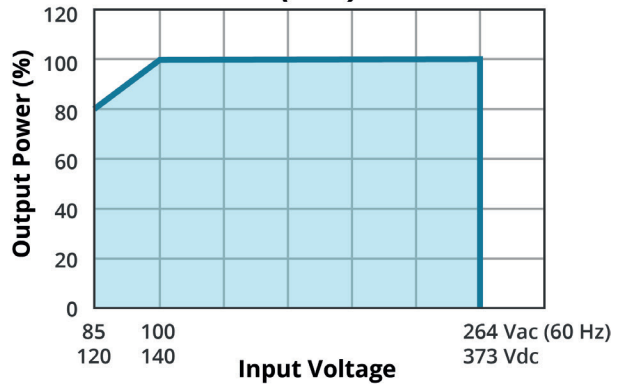
Note: At least one hole position, ①~③, must be securely connected to Protective Earth (PE) ⏏

## DERATING CURVE

**TEMPERATURE DERATING CURVE**

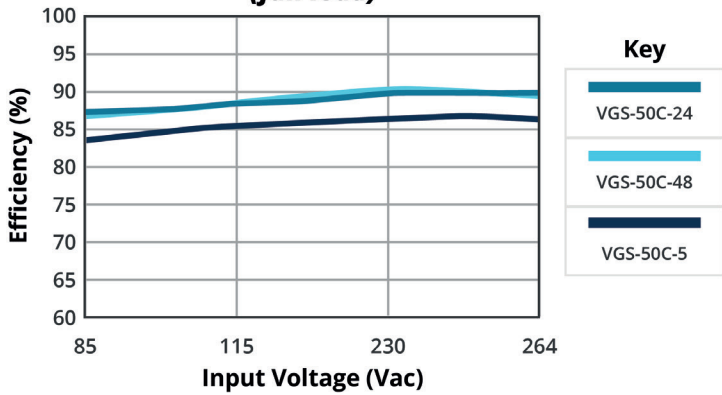


**INPUT VOLTAGE DERATING CURVE (25°C)**

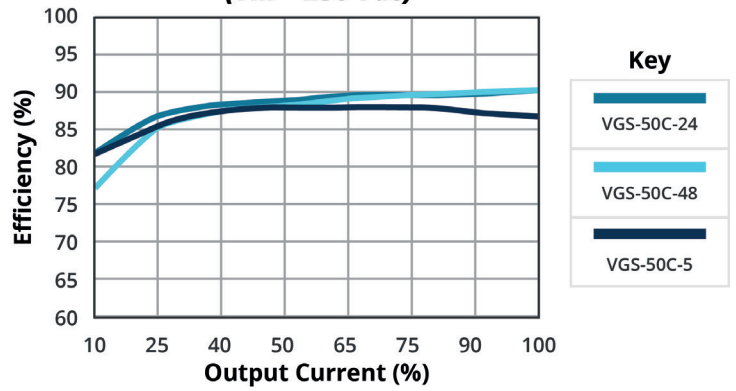


## EFFICIENCY CURVES

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



**EFFICIENCY VS OUTPUT LOAD (Vin = 230 Vac)**



## REVISION HISTORY

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rev.	description	date
1.0	initial release	09/28/2020
1.01	derating and efficiency curves updated	02/10/2022
1.02	UKCA mark added	06/06/2022

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



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