

**SERIES:** VGS-350C | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

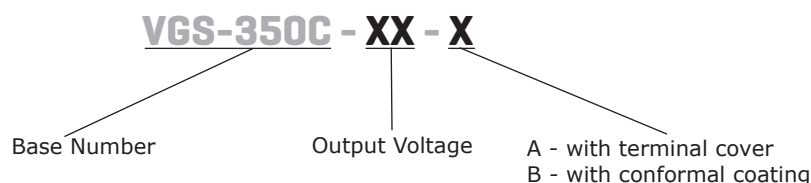
**FEATURES**

- selectable input range (90 ~ 132 Vac / 180 ~ 264 Vac)
- UL/EN/IEC 62368 certified
- designed to meet IEC/EN 60335, and GB4943 system requirements
- short-circuit, over-current, over-voltage, over-temperature protections
- integrated cooling fan
- 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-350C-5	5	60.0	300.0	150	84
VGS-350C-12	12	29.0	348.0	150	85
VGS-350C-15	15	23.2	348.0	150	87
VGS-350C-24	24	14.6	350.4	150	88
VGS-350C-36	36	9.7	349.2	200	88
VGS-350C-48	48	7.3	350.4	200	89

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 (low voltage, switch at 115V)	90		132	Vac
	ac input (high voltage, switch at 230V)	180		264	Vac
	dc input (switch at 230V)	240		373	Vdc
frequency		47		63	Hz
current	at 115 Vac			8	A
	at 230 Vac			4	A
inrush current	at 115 Vac, cold start		60		A
	at 230 Vac, cold start		60		A
leakage current	at 240 Vac			0.75	mA
no load power consumption	at 230 Vac, 25°C			0.75	W

## OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	5 Vdc output			10,000	µF
	12 Vdc output			4,000	µF
	15 Vdc output			3,300	µF
	24 Vdc output			1,500	µF
	36 Vdc output			1,500	µF
	48 Vdc output			470	µF
initial set point accuracy	5 Vdc output, full load		±3		%
	12 Vdc output, full load		±1.5		%
	other outputs, full load		±1		%
line regulation			±0.5		%
load regulation	5 Vdc output, 0%~100% load		±2		%
	12 Vdc output, 0%~100% load		±1		%
	other outputs, 0%~100% load		±0.5		%
adjustability	built in trim pot	±10			%
hold-up time	at 115 Vac		12		ms
	at 230 Vac		16		ms
switching frequency			65		kHz
temperature coefficient			±0.02		%/°C

## PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	5 Vdc output, hiccup, auto-recovery	5.75		6.75	Vdc
	12 Vdc output, hiccup, auto-recovery	13.8		16.2	Vdc
	15 Vdc output, hiccup, auto-recovery	18.0		21.0	Vdc
	24 Vdc output, hiccup, auto-recovery	28.8		33.6	Vdc
	36 Vdc output, hiccup, auto-recovery	41.4		46.8	Vdc
	48 Vdc output, hiccup, auto-recovery	55.2		59.5	Vdc
over current protection	auto-recovery	110		180	%
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	3,000			Vac
	output to ground	500			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				

**SAFETY & COMPLIANCE**

EMI/EMC	CISPR32/EN55032 Class A			
ESD	IEC/EN 61000-4-2 Contact ±6KV /Air ±8KV, perf. Criteria A			
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	%

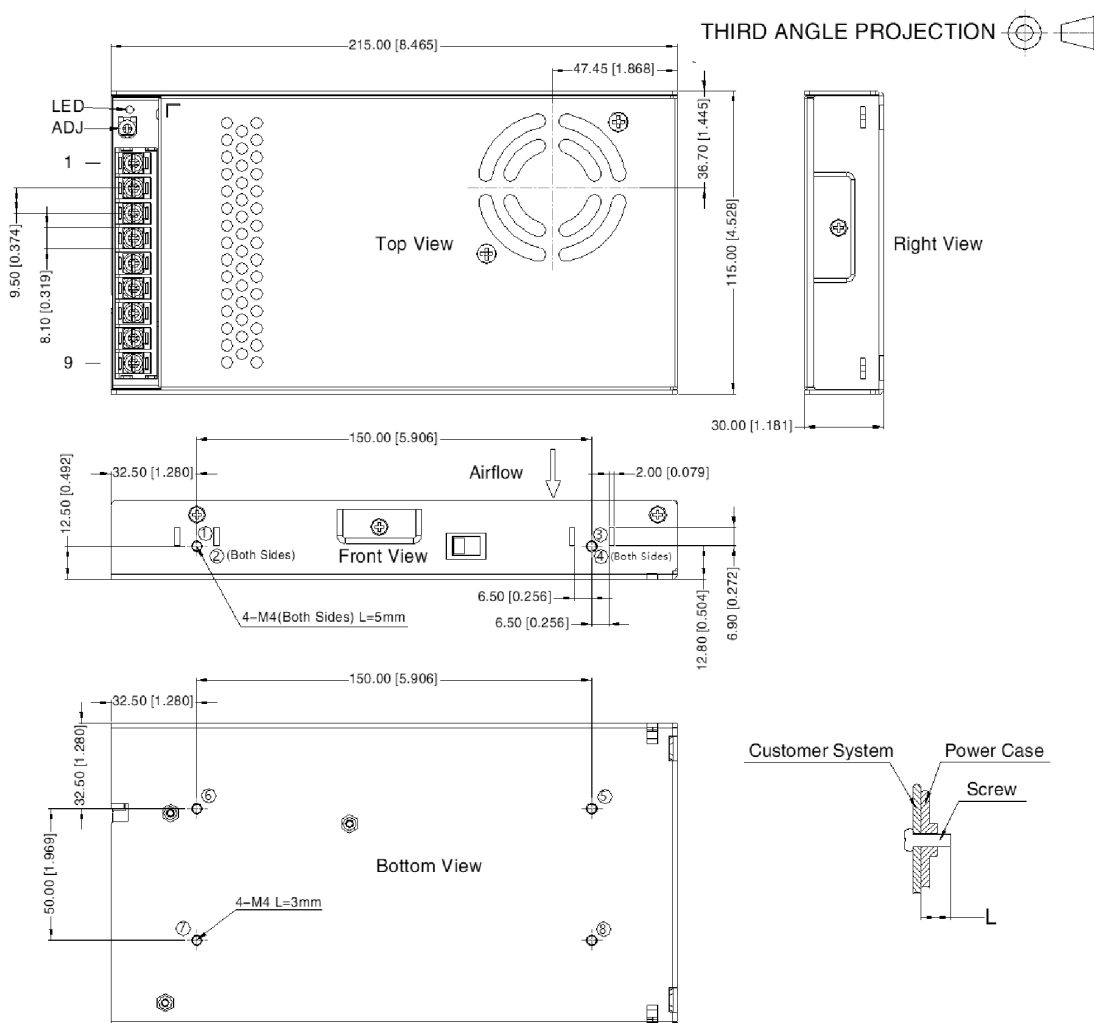
## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	215.00 x 115.00 x 30.00				mm
weight			700		g
cooling	forced air cooling				
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	+Vo
2	+Vo
3	+Vo
4	-Vo
5	-Vo
6	-Vo
7	⏏
8	AC(N)
9	AC(L)



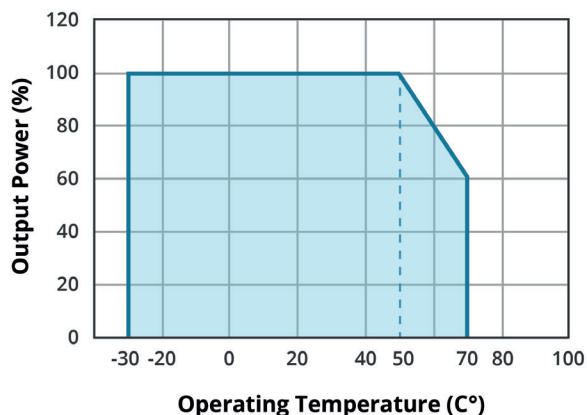
Switch	ac input (Vac)	dc input (Vdc)
	90~132	-
	180~264	240~373

Position	Screw spec.	L (max)	Torque (max)
① - ④	M4	5 mm	0.9 N·m
⑤ - ⑧	M4	3 mm	0.9 N·m

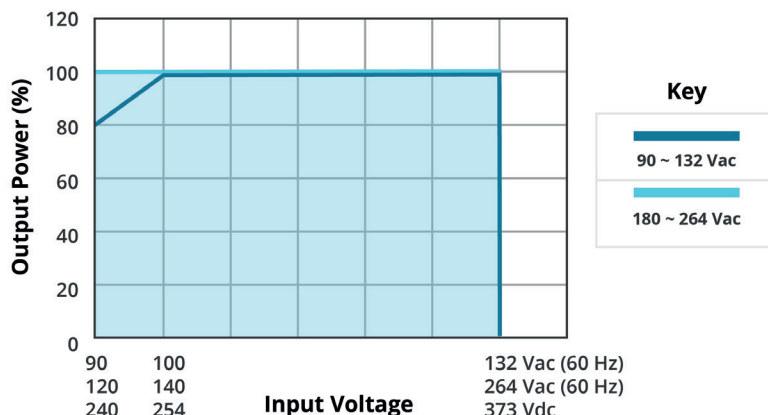
Note: At least one hole position, ①~⑧, must be securely connected to Protective Earth (PE) Ⓧ

## DERATING CURVE

**TEMPERATURE DERATING CURVE**

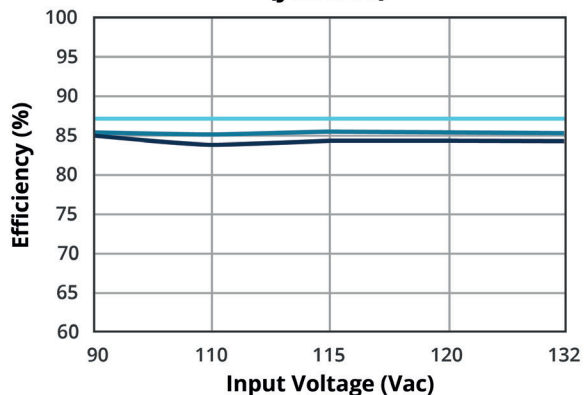


**INPUT VOLTAGE DERATING CURVE (25°C)**

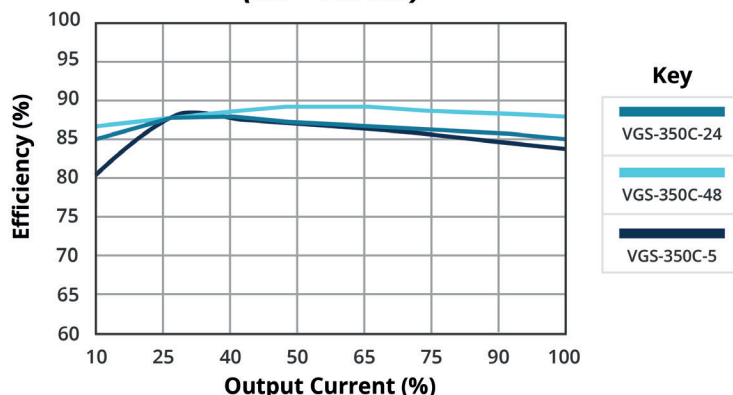


## EFFICIENCY CURVES

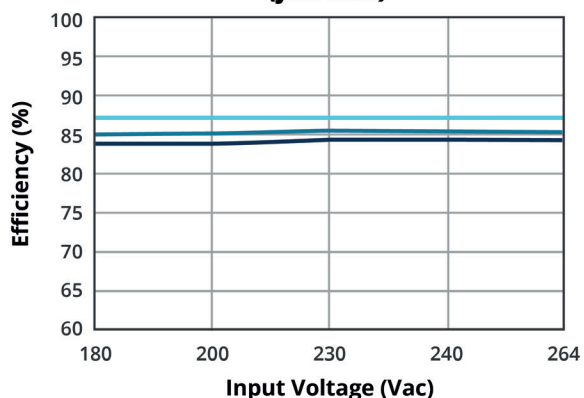
**EFFICIENCY VS INPUT VOLTAGE (full load)**



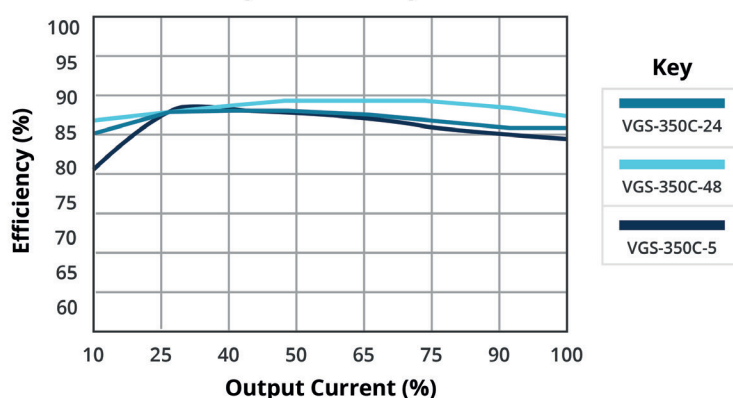
**EFFICIENCY VS OUTPUT LOAD (Vin = 115 Vac)**



**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	12/10/2020
1.01	derating and efficiency curves updated	01/28/2022
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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