SERIES: VOF-85G | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

FEATURES

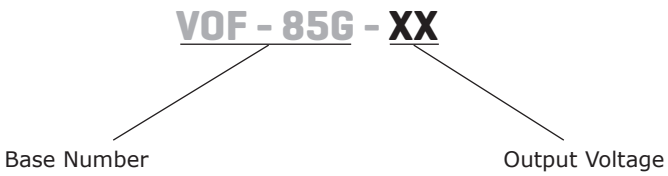
- universal input 90 ~ 264 Vac, 47 ~ 63 Hz
- high efficiency up to 90 %
- 40 ~ 65 W with natural convection, 50 ~ 85 W with 10 CFM forced air cooling
- compact size, high power density (3 x 1.5 inch)
- low no load power consumption (<0.150 W)
- certified to IEC/EN/UL 62368-1
- operating temperature -20 ~ 70°C (with derating)
- class I and class II application
- over voltage, over temperature, over current and short-circuit protection
- FCC Part 15 Class B

RoHS c UL us CE

MODEL	output voltage typ (Vdc)	output current[1] max (A)	output power[1,2] max (W)	ripple and noise[3] typ (mVp-p)	efficiency level typ (%)
VOF-85G-5	5	10.0	50	50	88
VOF-85G-12	12	7.10	85	120	90
VOF-85G-15	15	5.67	85	150	90
VOF-85G-18	18	4.73	85	150	90
VOF-85G-24	24	3.54	85	150	90
VOF-85G-28[4]	28	3.04	85	150	90
VOF-85G-36[4]	36	2.36	85	200	90
VOF-85G-48	48	1.78	85	200	90

Notes:
1. With forced air (10 CFM).
2. Maximum output power with 10 CFM forced air is 50 W for 5 Vdc output model and 85 W for all other output models.
   Maximum output power with natural convection is 40 W for 5 Vdc output model, 60 W for 12 & 15 Vdc output models and 65 W for all other output models.
3. Ripple and noise are measured at oscilloscope 20MHz bandwidth by a 100µF electrolytic capacitor and a 0.1µF ceramic capacitor in parallel at output connector.
4. Models are not UL certified.

PART NUMBER KEY



INPUT

parameter	conditions/description	min	typ	max	units
voltage		90	115~230	264	Vac
frequency		47	50~60	63	Hz
current	at 115 Vac / 60 Hz			2	A
inrush current	at 230 Vac, cold start			130	A
touch current	at 264 Vac			0.25	mA
no load power consumption				0.15	W

OUTPUT

parameter	conditions/description	min	typ	max	units
output current (natural convection/forced air[5])	5 Vdc output model			8.00 / 10.0	A
	12 Vdc output model			5.00 / 7.10	A
	15 Vdc output model			4.00 / 5.67	A
	18 Vdc output model			3.62 / 7.73	A
	24 Vdc output model			2.71 / 3.54	A
	28 Vdc output model			2.33 / 3.04	A
	36 Vdc output model			1.81 / 2.36	A
	48 Vdc output model			1.36 / 1.78	A
load regulation			±3		%
transient response	10% ~ 80% at 0.2A/uS slew rate, max 100 ms recovery time				
overshoot	turn-on and turn-off overshoot shall not exceed ±10% of the voltage regulation tolerance				
hold-up time	at 115 Vac	8			ms
switching frequency	at full load	50		100	kHz

Notes: 5. With forced air 10 CFM.

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over current protection	auto recovery	105		160	%
over voltage protection	auto recovery, latch off mode				
	5 Vdc output model	5.75		7.75	Vdc
	12 Vdc output model	13.80		16.20	Vdc
	15 Vdc output model	17.25		20.25	Vdc
	18 Vdc output model	20.70		24.30	Vdc
	24 Vdc output model	27.60		32.40	Vdc
	28 Vdc output model	32.20		37.80	Vdc
	36 Vdc output model	41.40		48.60	Vdc
	48 Vdc output model	55.20		64.80	Vdc
over temperature protection	auto recovery, latch off mode				
short circuit protection	auto recovery				

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output, for 4 seconds			3,000 4,242	Vac Vdc
	input to ground, for 4 seconds			1,500 2,121	Vac Vdc
	secondary circuits to ground, for 4 seconds			500	Vdc
safety approvals[6]	certified to 62368-1: IEC, EN, UL				
safety class	class I and class II application				
EMI/EMC	CE, EN 55032 Class B, EN 55035 for ITE standards FCC Part 15 Class B and ICES-003 for ITE standards				
MTBF	as per Telcordia (Bellcore TR-332) at 25°C	450,000			hours
RoHS	yes				

Notes: 6. 28 V and 36 V output models are not UL certified.

ENVIRONMENTAL

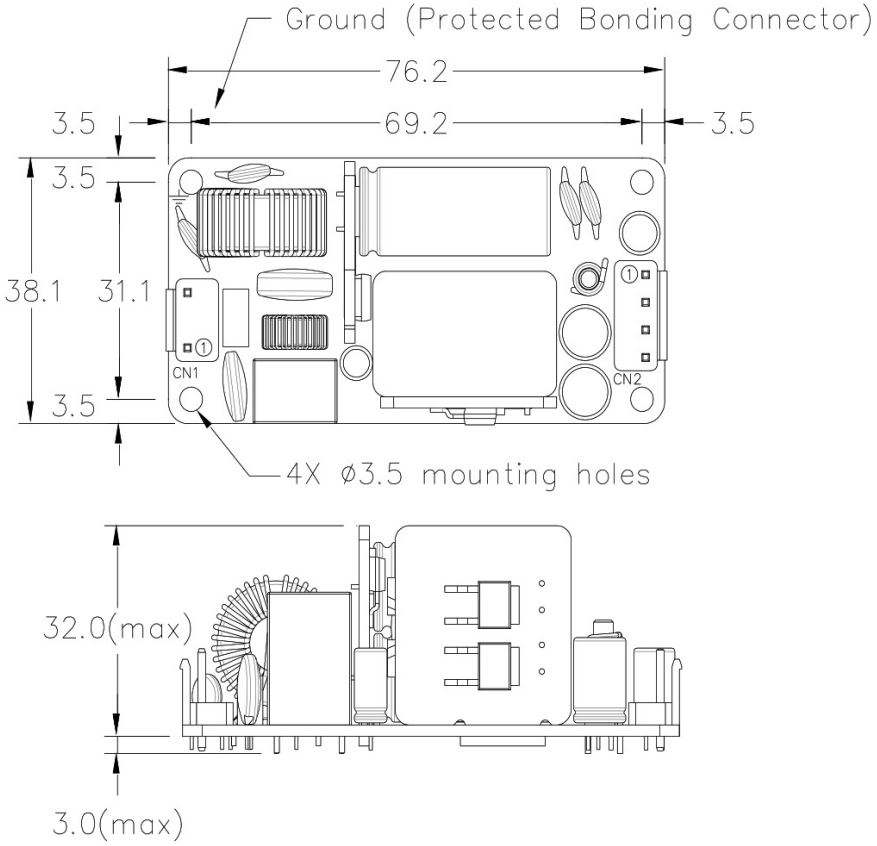
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curve	-20		70	°C
storage temperature		-20		85	°C
operating humidity	non-condensing	10		95	%
storage humidity	non-condensing	0		95	%
operating altitude				2,000	m

MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	76.2 × 38.1 × 32.0 [3.000 x 1.500 x 1.260 inch]				mm
weight			100		g

MECHANICAL DRAWING

units: mm [inch]
tolerance: ±0.5mm



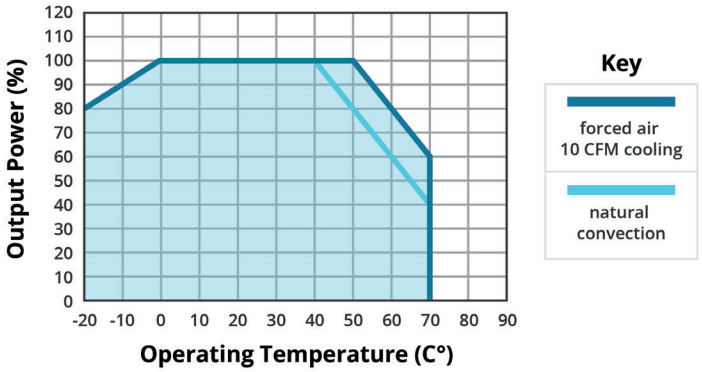
CN1: Input Connector JST B2P3-VH pitch: 7.92 mm or equivalent, mates with JST VHR-3N or equivalent	
PIN CONNECTIONS	
PIN	Function
1	AC(N)
2	AC(L)

CN2: Main Output Connector JST B4P-VH-B pitch: 3.96 mm or equivalent, mates with JST VHR-4N or equivalent	
PIN CONNECTIONS	
PIN	Function
1	+Vo
2	+Vo
3	GND
4	GND

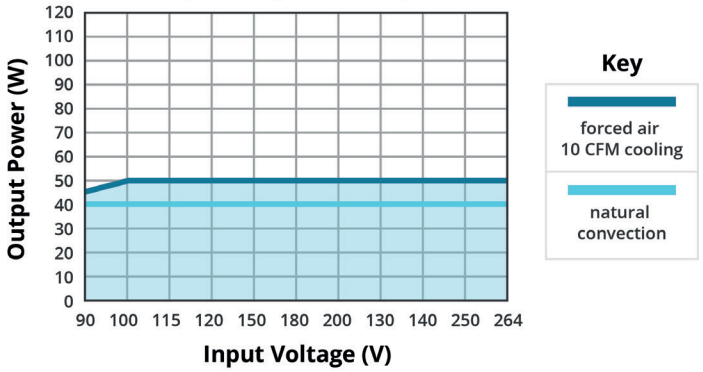
Note:
1. For Class I applications, all four mounting hole positions must be securely connected to the protective earth ground during the final system assembly to ensure optimal safety and EMI performance.
2. For Class II applications, the four mounting hole positions must remain isolated from one another. Each mounting hole should be fixed to the chassis using insulated spacers.
3. To enhance EMI performance under Class II test conditions, the VOF-85G Series allows an additional clamp core to be applied with one turn on the AC input.

DERATING CURVE

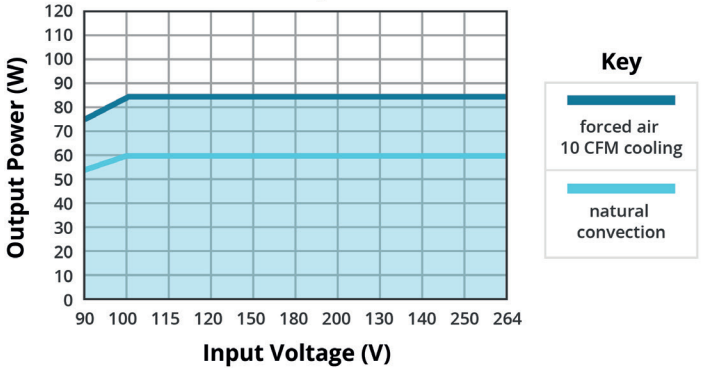
TEMPERATURE DERATING CURVE



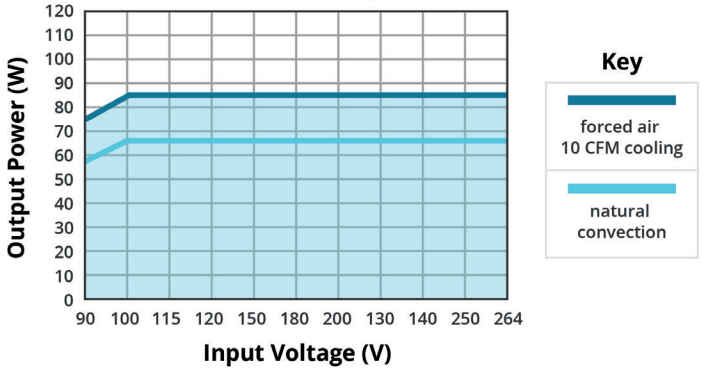
INPUT VOLTAGE DERATING CURVE (5 V output model)



INPUT VOLTAGE DERATING CURVE (12 V & 15 V output models)



INPUT VOLTAGE DERATING CURVE (18, 24, 28, 36 & 48 V output models)



REVISION HISTORY

rev.	description	date
1.0	initial release	07/10/2025

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

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