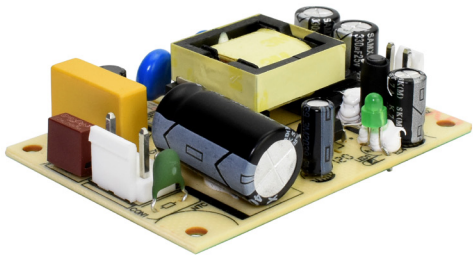
SERIES: VOF-15C | **DESCRIPTION:** AC-DC POWER SUPPLY

FEATURES

- universal input (85~264 Vac)
- 2.5 × 1.8 x 0.75 in (63.5 x 45.7 x 19 mm)
- class B EMI performance, meets CISPR32 / EN55032
- output short circuit, overcurrent & overvoltage protection
- designed to meet: IEC/EN/UL 60335 & 62368
- safety certified: IEC/EN/UL 62368

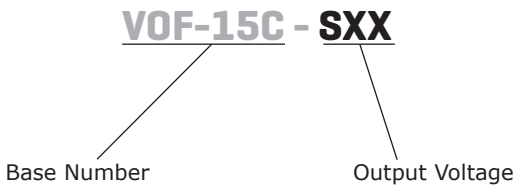


MODEL

MODEL	output voltage	output current		output power	ripple and noise[1]	efficiency[2]
		min	max	max	max	typ
	(Vdc)	(mA)	(mA)	(W)	(mVp-p)	(%)
VOF-15C-S3	3.3	0	3000	9	100	72
VOF-15C-S5	5	0	2800	14	100	76
VOF-15C-S9	9	0	1600	15	100	78
VOF-15C-S12	12	0	1250	15	100	81
VOF-15C-S15	15	0	1000	15	100	81
VOF-15C-S24	24	0	625	15	100	82

Notes:
1. At full load, nominal input, 20 MHz bandwidth oscilloscope, with 1 µF ceramic and 10 µF electrolytic capacitors on the output.
2. At 230 Vac input.
3. All specifications are measured at Ta=25°C, humidity <75%, nominal input voltage, and rated output load unless otherwise specified.

PART NUMBER KEY



Please read our datasheet & drawing disclaimer here.

INPUT

parameter	conditions/description	min	typ	max	units
voltage		85 100		264 370	Vac Vdc
frequency		47		60	Hz
current	at 115 Vac at 230 Vac			.37 .22	A A
inrush current	at 115 Vac at 230 Vac		20 30		A A
no load power consumption				0.5	W

OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	3.3 Vdc output models 5 Vdc output models 9 Vdc output models 12 Vdc output models 15 Vdc output models 24 Vdc output models			20,000 10,000 5,800 5,200 4,500 1,000	µF µF µF µF µF µF
initial set point accuracy	3.3 Vdc output models all other models		±3 ±2		% %
line regulation	at full load		±0.5		%
load regulation	from 0~100% load		±1		%
hold-up time	at 115 Vac, full load at 230 Vac, full load		10 60		ms ms
switching frequency			60		kHz
temperature coefficient			±0.02		%/°C

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	output voltage clamp, auto recovery 3.3, 5 Vdc output models 9 Vdc output models 12, 15 Vdc output models 24 Vdc output models			 7.5 15 20 30	 Vdc Vdc Vdc Vdc
over current protection	hiccup, auto recovery	130		300	%
short circuit protection	hiccup, continuous, auto-recovery				

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output electric strength test for 1 minute, leakage current <5 mA	3,000			Vac
safety approvals	IEC/EN/UL 62368-1 certified (designed to meet IEC/EN/UL 60335-1)				
safety class	Class II				
conducted emissions	CISPR32/EN55032, Class B				
radiated emissions	CISPR32/EN55032, Class B				
ESD	IEC/EN61000-4-2, Contact ±6KV, Perf. Criteria B				
radiated immunity	IEC/EN61000-4-3, 10V/m, Perf. Criteria A				

SAFETY & COMPLIANCE (CONTINUED)

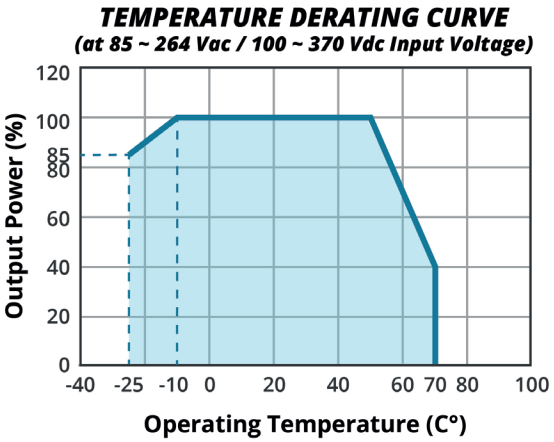
parameter	conditions/description	min	typ	max	units
EFT/burst	IEC/EN61000-4-4, ±2 kV, perf. Criteria B				
surge	IEC/EN61000-4-5, line to line ±1KV, perf. Criteria B				
conducted immunity	IEC/EN61000-4-6, 10 Vrms, Perf. Criteria A				
voltage dips & interruptions	IEC/EN61000-4-11, 0%,70%, perf. Criteria B				
MTBF	as per MIL-HDBK-217F at 25°C	300,000			hours
RoHS	yes				

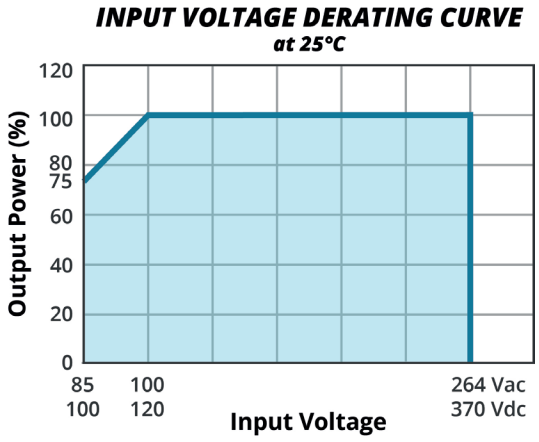
Notes: 4. The power supply is considered a component which will be installed into final equipment. The final equipment still must be tested to meet the necessary EMC directives.

ENVIRONMENTAL

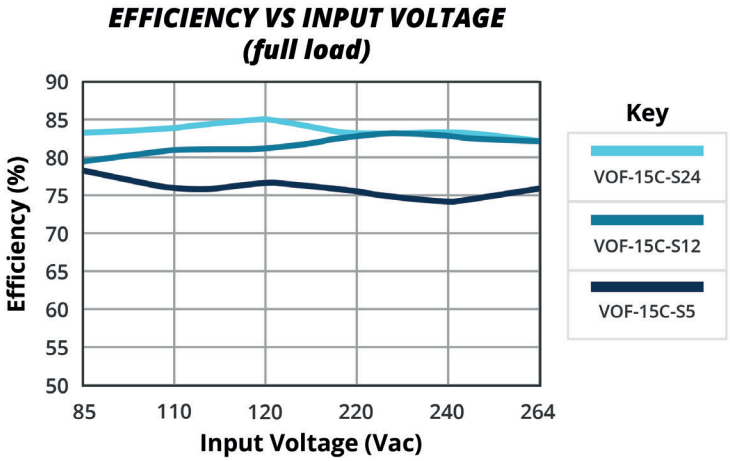
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curves	-25		70	°C
storage temperature		-25		85	°C
storage humidity	non-condensing			90	%

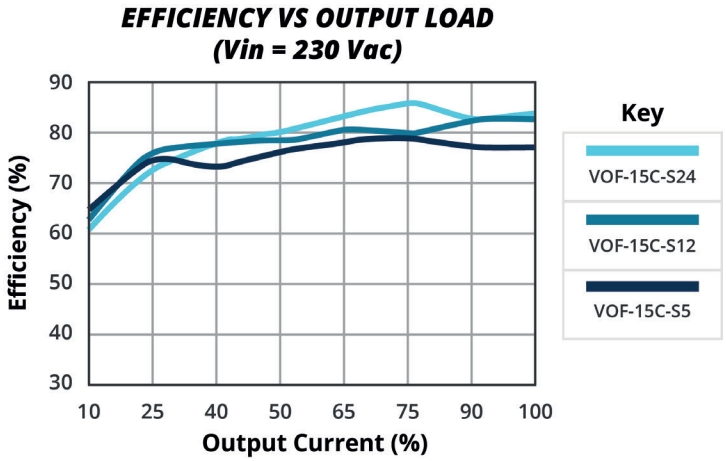
DERATING CURVES





EFFICIENCY CURVES





DESIGN REFERENCE

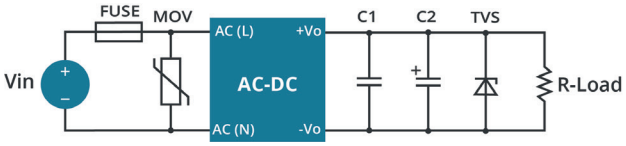


Fig. 1: Typical circuit diagram

Part No.	FUSE	MOV	C1 (µF)	C2 (µF)	TVS
VOF-15C-S3	2A/250V slow-blow	S14K300	0.1	22	SMBJ7.0A
VOF-15C-S5					SMBJ7.0A
VOF-15C-S9					SMBJ12A
VOF-15C-S12					SMBJ20A
VOF-15C-S15					SMBJ20A
VOF-15C-S24					SMBJ30A

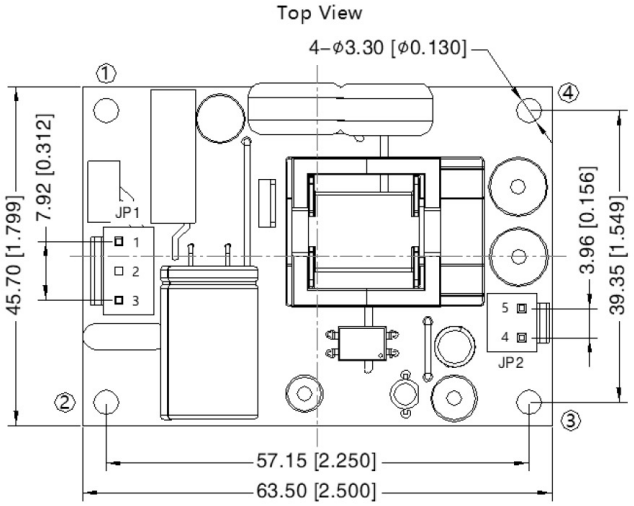
Output Filter Components:
We recommend using an electrolytic capacitor with high frequency, and low ESR rating for C2 (refer to manufacture's datasheet). Choose a Capacitor voltage rating with at least 20% margin, in other words not exceeding 80%. C1 is a ceramic capacitor used for filtering high-frequency noise and TVS is a recommended suppressor diode to protect the application in case of a converter failure.

MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	63.50 x 45.70 x 19.00				mm
weight			36		g

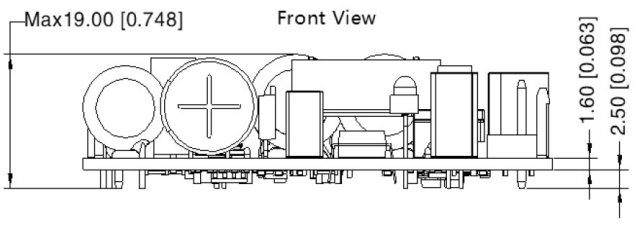
MECHANICAL DRAWING (BOARD MOUNT)

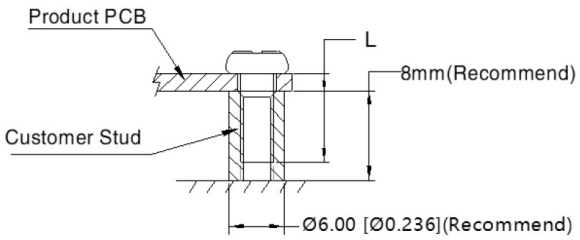
units: mm[inch]
tolerance: ±0.50[±0.020]
Mounting hole screwing torque: Max 0.4 N·m



PIN-Out			
Connector	PIN	Function	Connector
JP1	1	AC(L)	Housing: JST VHR Contact: JSTSVH-21T-P1.1 or equivalent
	2	NoPin	
	3	AC(N)	
JP2	4	-Vo	Housing: JST VHR Contact: JSTSVH-21T-P1.1 or equivalent
	5	+Vo	

Position	Screw Spec.	L (Recommended)	Torque (max)
①~④	M3	6 mm	0.4N ·m





REVISION HISTORY

rev.	description	date
1.0	initial release	10/24/2019
1.01	company logo updated	12/03/2020
1.02	derating and efficiency curves and circuit diagram updated	02/14/2022
1.03	product image updated	03/21/2022
1.04	UKCA mark added	06/06/2022
1.05	mechanical drawing updated	01/10/2023

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

CUI INC
a bel group

Headquarters
20050 SW 112th Ave.
Tualatin, OR 97062
800.275.4899

Fax 503.612.2383
cui.com
techsupport@cui.com

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