



FEATURES

- ITE (2nd) and Medical 3rd ed. 1MOPP (primary-secondary) safety approved
- 120W compact high density
- 2" x 4" standard footprint
- High efficiency up to 91%
- Universal AC input with active PFC
- Low profile - 1U package
- Convection-cooled operation up to 75W
- RoHS compliant
- UL Class I and II approved (for IT equipment)

DESCRIPTION

The MVAB120 series switching power supplies utilize advanced component and circuit technologies to deliver high efficiency. Designed for Medical, Telecom, and Industrial applications to satisfy 1U height design considerations, the MVAB120 Series measures only 2.0" x 4.0" x 1.35". All models offer universal AC input with active power factor correction (PFC) and compliance to worldwide safety and EMC standards.



Available now at www.murata-ps.com/en/3d/acdc.html

ORDERING GUIDE

Model Number	Medical Approval ¹	Natural Convection Cooling	Forced Air Cooling	Main Output (V1)
MVAB120-12	No	75W	120W @ 250LFM	12V
MVAB120-12-01	Yes			
MVAB120-24	No			24V
MVAB120-24-01	Yes			
MVAB120-28	No			28V
MVAB120-28-01	Yes			
MVAB120-48	No			48V
MVAB120-48-01	Yes			

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Operating Range	Single phase	90	120/230	264	Vac
	DC ¹	120		300	Vdc
Input Frequency		47	50/60	63	Hz
Turn-on Input Voltage	Input rising at 75W	76		85	Vac
Turn-off Input Voltage	Input falling at 75W	50			
Input Current	90Vac input, full load			1.9	A
Inrush Current	At 264Vac, at 25°C cold start			75	Apk

OUTPUT CHARACTERISTICS

Model Number	Main Output Voltage (V1)	Load Current	Load Capacitance	Line, Load, Cross Regulation	Typical Efficiency @230Vac full load
MVAB120-12	12V	0 to 10.0A	0 to 3300µF	± 2%	88%
MVAB120-12-01					
MVAB120-24	24V	0 to 5.0A	0 to 1000µF	± 2%	90%
MVAB120-24-01					
MVAB120-28	28V	0 to 4.29A	0 to 1000µF	± 2%	90%
MVAB120-28-01					
MVAB120-48	48V	0 to 2.5A	0 to 1000µF	± 2%	91%
MVAB120-48-01					

MAIN OUTPUT CHARACTERISTICS (ALL MODELS)

Parameter	Conditions	Min.	Max.	Units
Transient Response	50% load step, 1A/µsec slew rate		± 5	%
Settling Time to 1% of Nominal	MVAB120-12		750	µsec
	MVAB120-24, MVAB120-28, MVAB120-48		500	µsec
Turn On Delay	After application of input power		1	sec
Output Voltage Rise	Monotonic, 0 to 75W		50	msec
Setpoint Accuracy	120Vac, 75W, 25°C		± 0.5	%
Output Holdup	Full load	14		msec
Temperature Coefficient			0.02	%/°C
Ripple Voltage & Noise ²			1	%

1 Medical versions not designed for DC input voltage.

2 Ripple and noise are measured with 0.1 µF of ceramic capacitance and 47 µF of electrolytic capacitance on each of the power supply outputs. The output noise requirements apply over a 0 Hz to 20 MHz bandwidth. A short coaxial cable with 50Ω scope termination is used.

3 Unless otherwise specified, all readings are taken at 120Vac input and 25°C ambient temperature.



ENVIRONMENTAL CHARACTERISTICS					
Parameter	Conditions	Min.	Typ.	Max.	Units
Storage Temperature Range		-40		85	°C
Operating Temperature Range	Full load	-10		50	
	50% load	-10		70	
	Start up	-20			
Operating Humidity	Non-condensing	10		95	%
Operating Altitude	Without derating	-200		3000	m
MTBF	Telcordia SR-332 M1C3 25°C	1M			Hours
Shock	Operating, IEC60068-2-27, half-sine 5G, 6ms, 3 times per face, 6 faces	Complies			
	Non-operating, IEC60068-2-27, half-sine, 30G, 18ms, 3 times per face, 6 faces	Complies			
Vibration	Operating, IEC60068-2-6, 1.0G, 10-150Hz, 10minutes per axis, on all 3 axes	Complies			
	Non-operating, IEC60068-2-6, 2.0G, 10-150Hz, 10minutes per axis, on all 3 axes	Complies			
Safety	IEC60950-1:2005 (2nd Edition); Am1:2009 UL60950-1 2nd Edition,2011-12-19, CSA C22.2 No. 60950-1-07, 2nd Edition,2011-12 EN60950-1:2006 + A11:2009 + A1:2010 + A12:2011 IEC60601-1:2005 + CORR.1(2006) + CORR.2(2007) ANSI/AAMI ES60601-1 (2005+C1:09 + A2:10), CSA-C22.2 No. 60601-1(2008), MOPP CE Marking per LVD				
Warranty	2 years				
Outside Dimensions	2.0" x 4.0" x 1.35" (50.8mm x 101.6mm x 34.3mm); 2.0" x 4.0" x 1.41" (50.8mm x 101.6mm x 35.8mm) for medical version				
Weight	MVAB120-12/-01	0.34lbs (155g) typical			
	MVAB120-24/-01, MVAB120-28/-01, MVAB120-48/-01	0.36lbs (162g) typical			

PROTECTION CHARACTERISTICS					
Parameter	Conditions	Min.	Typ.	Max.	Units
Overvoltage Protection	Latching	110		160	%V1
Overcurrent Protection	Hiccup mode	105		150	%Amax
Overtemperature Protection	Auto recovery		Complies		

ISOLATION CHARACTERISTICS					
Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation	Primary to Earth Ground (1MOOP)	1500			Vac
	Primary to Secondary (2MOOP or 1 MOPP)	3000			
	Secondary to Earth Ground	500			Vdc
Leakage Current (under normal conditions)	264Vac, 60Hz, 25°C		500		µA

EMISSIONS AND IMMUNITY		
Characteristic	Standard	Compliance
Input Current Harmonics	IEC/EN 61000-3-2	Class A
Voltage Fluctuation and Flicker	IEC/EN 61000-3-3	Complies
Conducted Emissions	EN 55022	Class B, Class A (at class II equipment)
	FCC Part 15	Class B, Class A (at class II equipment)
ESD Immunity	IEC/EN 61000-4-2	Level 4, Criterion A
Radiated Field Immunity	IEC/EN 61000-4-3	Level 2, Criterion A
Electrical Fast Transient Immunity	IEC/EN 61000-4-4	Level 3, Criterion A
Surge Immunity	IEC/EN 61000-4-5	Level 3, Criterion A
RF Conducted Immunity	IEC/EN 61000-4-6	Level 2, Criterion A
Magnetic Field Immunity	IEC/EN 61000-4-8	Level 1, Criterion A
Voltage dips,interruptions	IEC/EN 61000-4-11	Level 3, Criterion B