General

SINPRO

SBU120 series V1.5

120W Open Frame Power Supply for General Purpose

The SBU120 series of AC/DC switching mode power supplies provide 120 Watts of continuous output power. All supplies are UL 94V-1 min compliant. All models meet FCC Part-15 class B and CISPR-22 class B emission Limits and are designed to comply with UL/c-UL, TUV and CE marking conformity assessment. All units are 100% burned in and tested.

RoHS2 2011/65/EU

FEATURES:

* Wide Operating Voltage 90 to 264 VAC,47 to 63 Hz
* Internal EMI filter
* Crowbar Mode Over Voltage Protection
* Single to Triple Output
* Active Power Factor Correction
* Class I system
* 3 year warranty

APPLICATIONS:

* Industrial PC
* Electrical Test & Measurement
* Instruments
* Communication equipment
* AV equipment

APPROVALS:

GENERAL SPECIFICATION:

* **Short Circuit Protection**: Auto Recovery
* **Cooling**: Free Air Convection
* **Flammability Rating**: UL94V-1
* **Protection Classes**: Class I
* **Safety**: UL 60950-1:2nd Edition, IEC 60950-1:2005 /A2, CSA C22.2 No.60950-1-07

Electrical Characteristics:

Symbol	Characteristic	Condition	Min.	Typ.	Max.	Unit
Vins	Safety Approval Input Voltage Range	Safety Approval & Specification in Label	100		240	VAC
Vin	Input Operate Voltage Range	Detail to see Fig.1	90		260	VAC
Fi	Input Frequency	Sine wave	47		63	Hz
PF	Power Factor Correction	Io=Full load, Vin=240VAC	0.95		1	
Po	Output Power Range	See Rating Chart			120	W
Iil	Low Line Input Current	Full Load, Vin=100VAC		1.75		A
Iih	High Line Input Current	Full Load, Vin=240VAC		0.72		A
Irl	Low Line Input Inrush Current	Full Load, 25°C, Cool start, Vin=100VAC			37	A
Irh	High Line Input Inrush Current	Full Load, 25°C, Cool start, Vin=240VAC			88	A
Ik	Safety Ground Leakage Current	Vin=240VAC, Fi=60Hz			0.75	mA
η	Efficiency	Full Load, Vin=230VAC, Detail to see Rating Chart	See Rating Chart			
▵Voi	Line Regulation	Full Load, Vin=100~120VAC	0.5		1	%
▵VoL	Load Regulation	Vin=230VAC, 10~90% Load Change at Condition	2		5	%
OVP	Over Voltage Protection	Over Voltage Protection	112		132	%
OLP	Over Load Protection	Recovers automatically after fault condition is removed	110		150	%
ttr	Time of Transient Response	Io=Full Load to Half Load, Vin=110VAC			4	ms
thu	Hold-Up Time	Full Load, Vin=100VAC	See Rating Chart			
ts	Start-up time	Full Load, Vin=100~240VAC			3	s
Tc	Temperature Coefficient	Full load, Vin=100~240VAC			±0.04	%/°C
HV	Dielectric Withstanding Voltage (P-S)	Primary to Secondary			4242	VDC
Vpg	Dielectric Withstanding Voltage (P-G)	Primary to PE			2121	VDC
EMI	EMC Emission	Compliance to EN55022 (CISPR22)			B	Class

Environmental:

Symbol	Characteristic	Condition	Min.	Typ.	Max.	Unit
To	Operating Temperature	Detail to see Fig.2 (Derate linearly from 100% load at 50°C to 50% load at 70°C)	0		70	°C
Ts	Storage Temperature	10 ~ 95% RH	-40		85	°C
Ho	Operating Humidity	non-condensing	0		95%	RH
Hs	Storage Humidity		0		95%	RH
ESDa	Electro Static Discharge	Air Discharge, IEC61000-4-2			8	kV
ESDc	Electro Static Discharge	Contact Discharge, IEC61000-4-2			4	kV
MTBF	Mean Time Between Failure	Operating Temperature at 25°C, Calculated per MIL-HDBK-217F	100k			h
ELEV	Operating Altitude (Elevation)	All condition			2000	m
VBR	Vibration	10 ~ 500Hz, 10min./1cycle, 60min. each along X, Y, Z axes			5	G
Vsl	Surge Voltage	Line-Neutral			1	kV
Vsg	Surge Voltage	Line-PE & Neutral-PE			2	kV

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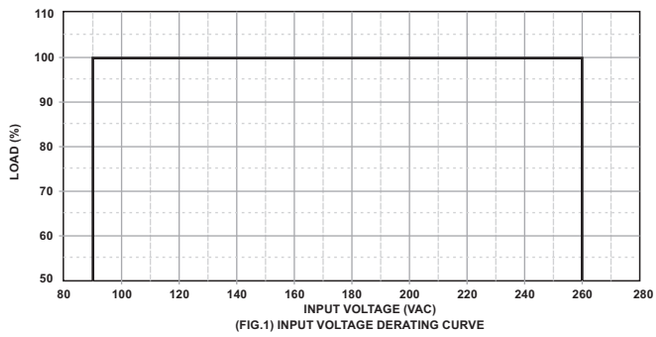
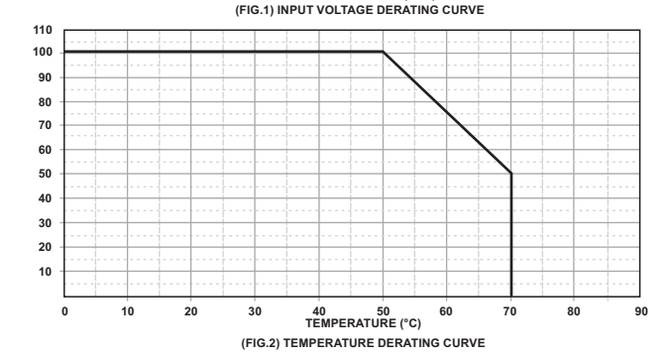
SPECIFICATION NOTE :

1. Output can provide up to peak load when the power supply starts up. Continuous staying in more than rated load is not allowed.
2. At factory, in 60% rated load condition, each output is checked to be within voltage accuracy.
3. Line regulation is defined by changing ±10% of input voltage from nominal line at rated load.
4. Load regulation is defined by changing ±40% of measured output load from 60% rated load.
5. The ripple is measured from peak to peak with a bandwidth-limit of 20MHz (Measured at the output connector with a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor).
6. Hold up time is measured from the end of the last charging pulse to the time which the main output drops down to low limit of main output at rated load and nominal line.
7. Efficiency is measured at rated load, and nominal line.

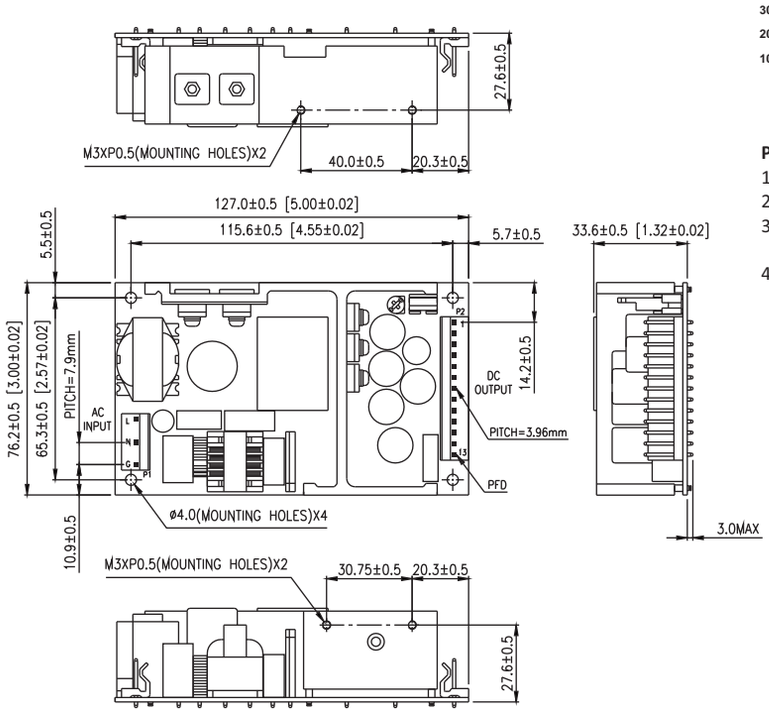


(FIG.1) INPUT VOLTAGE DERATING CURVE



(FIG.2) TEMPERATURE DERATING CURVE

MECHANICAL DIMENSIONS: (UNIT: mm [inch])



PACKING :

1. Dimensions are shown in mm.
2. Weight: 350~428gs approx.
3. Input connector mates with Molex housing 09-52-4054 and Molex 2478 series crimp terminal.
4. Output connector mates with Molex housing 09-52-4134 and Molex 2478 series crimp terminal.

PIN CHART

MODEL \ PIN	1	2	3	4	5	6	7	8	9	10	11	12	13
SBU120-1XX	OUT	OUT	OUT	OUT	OUT	OUT	RTN	RTN	RTN	RTN	RTN	RTN	PFD
SBU120-219	N/C	N/C	Vo1	Vo1	Vo1	Vo1	COM	COM	COM	Vo3	COM	COM	PFD
SBU120-215	N/C	N/C	Vo1	Vo1	Vo1	Vo1	COM	COM	COM	Vo3	COM	COM	PFD
SBU120-2XX	Vo2	Vo2	Vo1	Vo1	Vo1	Vo1	COM	COM	COM	N/C	COM	COM	PFD
SBU120-3XX	Vo2	Vo2	Vo1	Vo1	Vo1	Vo1	COM	COM	COM	Vo3	COM	COM	PFD

Note: Vo1:Output#1 Vo2:Output#2 Vo3:Output#3

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Rating Chart:

MODEL NO.	Setting Voltage Range (Factory setting, can't be adjusted)		Output Current (Based on the output volt.)		Maximum Output Power	Ripple & Noise	Total Regulation	Typ. Efficiency	Typ. No Load Consumption	Hold-Up Time	Protection Mode
	min	max	min	max							
	(VDC)	(VDC)	(A)	(A)	(W)	(mVp-p)	(%)	(%)	(W)	(ms)	
*SBU120-101	3.0	5.0	20.00	22.00	100	66	±5	70	5	16	Hiccup
SBU120-102	5.0	6.0	18.33	22.00	110	60	±5	70	5	16	Hiccup
*SBU120-103	6.0	9.0	12.77	19.16	115	90	±5	70	5	16	Hiccup
*SBU120-104	9.0	11.0	10.90	13.33	120	100	±4	75	5	16	Hiccup
SBU120-105	11.0	13.0	9.23	10.90	120	130	±3	75	5	16	Hiccup
SBU120-106	13.0	16.0	7.50	9.23	120	150	±3	78	5	16	Hiccup
SBU120-107	16.0	21.0	5.71	7.50	120	200	±3	78	5	16	Hiccup
SBU120-108	21.0	27.0	4.44	5.71	120	200	±2	82	5	16	Hiccup
SBU120-109	27.0	33.0	3.63	4.44	120	250	±2	82	5	16	Hiccup
SBU120-110	33.0	40.0	3.00	3.63	120	250	±2	82	5	16	Hiccup
SBU120-111	40.0	50.0	2.40	3.00	120	300	±2	82	5	16	Hiccup

[*]=MOQ is required. Please contact sales.

Rating Chart: (Multi Output)

MODEL NO.	Setting Voltage Range (Factory setting, can't be adjusted)		Output Current (Based on the output volt.)		Maximum Output Power	Ripple & Noise	Total Regulation	Typ. Efficiency	Typ. No Load Consumption	Hold-Up Time	Protection Mode
			min	max							
		(VDC)	(A)	(A)	(W)	(mVp-p)	(%)	(%)	(W)	(ms)	
SBU120-200	Vo1	+3.3	1.5	15.0	120	50	±5	77	5.5	16	Hiccup
	Vo2	+12.0	0.6	6.0		120	±5				
SBU120-201	Vo1	+5.0	1.5	15.0	120	50	±5	77	5.5	16	Hiccup
	Vo2	+12.0	0.8	6.0		120	±5				
*SBU120-202	Vo1	+5.0	1.5	15.0	120	50	±5	75	5.5	16	Hiccup
	Vo2	+15.0	0.6	6.0		150	±5				
SBU120-203	Vo1	+5.0	1.5	15.0	120	50	±5	80	5.5	16	Hiccup
	Vo2	+24.0	0.4	3.5		240	±5				
*SBU120-204	Vo1	+3.3	1.5	15.0	79.5	50	±5	70	5.5	16	Hiccup
	Vo2	+5.0	0.8	6.0		50	±5				
*SBU120-215	Vo1	+5.0	1.5	15.0	120	50	±5	75	5.5	16	Hiccup
	Vo3	-24.0	0.2	2.0		240	±5				
SBU120-219	Vo1	+28.0	0.4	3.92	120	280	±5	80	5.5	16	Hiccup
	Vo3	+5.0	0.0	2.00		50	±5				
*SBU120-300	Vo1	+3.3	1.5	15.0	120	50	±5	75	5.5	16	Hiccup
	Vo2	+12.0	0.6	6.0		120	±5				
	Vo3	-12.0	0.0	0.8		120	±5				
*SBU120-300-1	Vo1	+3.3	1.5	15.0	120	50	±7	75	5.5	16	Hiccup
	Vo2	+12.0	0.6	6.0		120	±5				
	Vo3	+12.0	0.0	0.8		120	±5				
*SBU120-301	Vo1	+5.0	1.5	15.0	120	50	±5	77	5.5	16	Hiccup
	Vo2	+12.0	0.8	6.0		120	±5				
	Vo3	-5.0	0.0	0.8		50	±5				
*SBU120-301-1	Vo1	+5.0	1.5	15.0	120	50	±5	77	5.5	16	Hiccup
	Vo2	+12.0	0.8	6.0		120	±5				
	Vo3	+5.0	0.0	0.8		50	±5				

Note: Vo1:Output#1 Vo2:Output#2 Vo3:Output#3

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Rating Chart: (Multi Output)

MODEL NO.	Setting Voltage Range (Factory setting, can't be adjusted)		Output Current (Based on the output volt.)		Maximum Output Power	Ripple & Noise	Total Regulation	Typ. Efficiency	Typ. No Load Consumption	Hold-Up Time	Protection Mode
			min	max							
		(VDC)	(A)	(A)	(W)	(mVp-p)	(%)	(%)	(W)	(ms)	
SBU120-302	Vo1	+5.0	1.5	15.0	120	50	±5	80	5.5	16	Hiccup
	Vo2	+12.0	0.8	6.0		120	±5				
	Vo3	-12.0	0.0	0.8		120	±5				
*SBU120-302-1	Vo1	+5.0	1.5	15.0	120	50	±5	80	5.5	16	Hiccup
	Vo2	+12.0	0.8	6.0		120	±5				
	Vo3	+12.0	0.0	0.8		120	±5				
SBU120-303	Vo1	+5.0	1.5	15.0	120	50	±5	80	5.5	16	Hiccup
	Vo2	+15.0	1.0	6.0		150	±5				
	Vo3	-15.0	0.0	0.8		150	±5				
*SBU120-303-1	Vo1	+5.0	1.5	15.0	120	50	±5	80	5.5	16	Hiccup
	Vo2	+15.0	1.0	6.0		150	±5				
	Vo3	+15.0	0.0	0.8		150	±5				
*SBU120-304	Vo1	+5.0	1.5	15.0	120	50	±5	80	5.5	16	Hiccup
	Vo2	+24.0	0.45	3.5		240	±5				
	Vo3	-24.0	0.25	0.8		240	±5				
*SBU120-304-1	Vo1	+5.0	1.5	15.0	120	50	±5	80	5.5	16	Hiccup
	Vo2	+24.0	0.45	3.5		240	±5				
	Vo3	+24.0	0.25	0.8		240	±5				
*SBU120-305	Vo1	+5.0	1.5	15.0	120	50	±5	80	5.5	16	Hiccup
	Vo2	+24.0	0.5	3.5		240	±5				
	Vo3	-12.0	0.0	0.8		120	±5				
SBU120-305-1	Vo1	+5.0	1.5	15.0	120	50	±5	80	5.5	16	Hiccup
	Vo2	+24.0	0.5	3.5		240	±5				
	Vo3	+12.0	0.0	0.8		120	±5				
*SBU120-306	Vo1	+3.3	1.5	15.0	120	66	±5	78	5.5	16	Hiccup
	Vo2	+12.0	0.8	6.0		120	±5				
	Vo3	-5.0	0.0	0.8		50	±5				
*SBU120-306-1	Vo1	+3.3	1.5	15.0	120	66	±5	78	5.5	16	Hiccup
	Vo2	+12.0	0.8	6.0		120	±5				
	Vo3	+5.0	0.0	0.8		50	±5				
SBU120-307	Vo1	+5.0	1.5	15.0	120	50	±5	80	5.5	16	Hiccup
	Vo2	+10.0	0.6	6.0		100	±5				
	Vo3	-10.0	0.0	1.0		100	±5				
*SBU120-307-1	Vo1	+5.0	1.5	15.0	120	50	±5	80	5.5	16	Hiccup
	Vo2	+10.0	0.6	6.0		100	±5				
	Vo3	+10.0	0.0	1.0		100	±5				
*SBU120-308	Vo1	+3.3	1.5	15.0	91.5	66	±7	70	5.5	16	Hiccup
	Vo2	+5.0	0.8	6.0		50	±5				
	Vo3	-12.0	0.0	1.0		120	±5				
SBU120-308-1	Vo1	+3.3	1.5	15.0	91.5	66	±7	70	5.5	16	Hiccup
	Vo2	+5.0	0.8	6.0		50	±5				
	Vo3	+12.0	0.0	1.0		120	±5				

Note: Vo1:Output#1 Vo2:Output#2 Vo3:Output#3

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