SMFA61 SERIES

63W Open Frame Power Supply for Medical Equipment



- Wide Input Voltage 90 to 264 VAC, 47 to 63 Hz
- Single to Quad Output
- Input Surge Current, Over Voltage, Over Load and Output Voltage Protection
- Power Fail Detect (Optional)
- Output Voltage Available from 3VDC through 40VDC
- Input connector mates with Molex housing 09-50-3031 and Molex 2478 series crimp terminal
- Output connector mates with Molex housing 09-50-3081and Molex 2478 series crimp terminal
- Class I Insulation

3 Year Warranty

Approvals:

Single Output

Part Number	Output Voltage	Max. Output Current	Total Regulation	Max. Output Power
SMFA61-S01	3 - 5 VDC	16.6 - 10.0 A	5%	50W
SMFA61-S02	5 - 6 VDC	11.0 - 9.16 A	5%	55W
SMFA61-S03	6 - 8 VDC	10.0 - 7.50 A	5%	60W
SMFA61-S04	8 - 11 VDC	7.87 - 5.72 A	3%	63W
SMFA61-S05	11 - 13 VDC	5.72 - 4.84 A	3%	63W
SMFA61-S05-1	11 - 13 VDC	4.09 - 3.46 A	3%	45W
SMFA61-S06	13 - 16 VDC	4.84 - 3.93 A	3%	63W
SMFA61-S07	16 - 21 VDC	3.93 - 3.00 A	3%	63W
SMFA61-S08	21 - 27 VDC	3.00 - 2.33 A	2%	63W
SMFA61-S09	27 - 33 VDC	2.33 - 1.90 A	2%	63W
SMFA61-S10	33 - 40 VDC	1.90 - 1.57 A	2%	63W

Multi Output

Part Number	Output 1				Output 2				Output 3				Output 4				Max. Output Power
	Vonom	Iomin	Iomax	Regmax	Vonom	Iomin	Iomax	Regmax	Vonom	Iomin	Iomax	Regmax	Vonom	Iomin	Iomax	Regmax	
SMFA61-D00	+3.3V	1.4A	7A	7%	+12V	0.6A	3A	5%									59.1W
SMFA61-D01	+5V	0.7A	7A	5%	+12V	0.3A	3A	5%									63W
SMFA61-D02	+5V	0.7A	7A	5%	+15V	0.3A	3A	5%									63W
SMFA61-D03	+5V	0.7A	7A	5%	+24V	0.4A	2A	5%									63W
SMFA61-D04	+3.3V	1.4A	7A	7%	+5V	0.5A	5A	5%									48.1W
SMFA61-D15	+5V	0.7A	7A	5%					-24V	0.2A	2A	5%					63W
SMFA61-T00	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%					63W
SMFA61-T00-1	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%					63W
SMFA61-T01	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	-5V	0A	0.8A	5%					63W
SMFA61-T01-1	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	+5V	0A	0.8A	5%					63W
SMFA61-T02	+5V	0.6A	6A	5%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%					63W
SMFA61-T02-1	+5V	0.6A	6A	5%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%					63W
SMFA61-T03	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	-15V	0A	0.8A	5%					63W
SMFA61-T03-1	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	+15V	0A	0.8A	5%					63W
SMFA61-T05	+5V	1.2A	6A	5%	+24V	0.4A	2A	5%	-12V	0A	0.8A	5%					63W
SMFA61-T05-1	+5V	1.2A	6A	5%	+24V	0.4A	2A	5%	+12V	0A	0.8A	5%					63W
SMFA61-T06	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	-5V	0A	0.8A	5%					59.8W
SMFA61-T06-1	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	+5V	0A	0.8A	5%					59.8W
SMFA61-T08	+3.3V	0.5A	5A	7%	+5V	0.5A	5A	5%	-12V	0A	1A	5%					53.5W
SMFA61-T08-1	+3.3V	0.5A	5A	7%	+5V	0.5A	5A	5%	+12V	0A	1A	5%					53.5W
SMFA61-Q00	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W
SMFA61-Q00-1	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W
SMFA61-Q00-2	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W
SMFA61-Q00-3	+3.3V	1.2A	6A	7%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W
SMFA61-Q01	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	-12V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W
SMFA61-Q01-1	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	-12V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W
SMFA61-Q01-2	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	+12V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W
SMFA61-Q01-3	+5V	0.6A	6A	5%	+12V	0.3A	3A	5%	+12V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W
SMFA61-Q02	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	-12V	0A	0.8A	5%	63W
SMFA61-Q02-1	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	+12V	0A	0.8A	5%	63W
SMFA61-Q02-2	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	-12V	0A	0.8A	5%	63W
SMFA61-Q02-3	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	+12V	0A	0.8A	5%	63W
SMFA61-Q03	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	-24V	0A	0.8A	5%	63W
SMFA61-Q03-1	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	-12V	0A	0.8A	5%	+24V	0A	0.8A	5%	63W
SMFA61-Q03-2	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	-24V	0A	0.8A	5%	63W
SMFA61-Q03-3	+5V	1.2A	6A	5%	+12V	0.6A	3A	5%	+12V	0A	0.8A	5%	+24V	0A	0.8A	5%	63W
SMFA61-Q04	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	-15V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W
SMFA61-Q04-1	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	-15V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W
SMFA61-Q04-2	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	+15V	0A	0.8A	5%	-5V	0A	0.8A	5%	63W
SMFA61-Q04-3	+5V	0.6A	6A	5%	+15V	0.3A	3A	5%	+15V	0A	0.8A	5%	+5V	0A	0.8A	5%	63W

Electrical Characteristics

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Input Voltage	Operating Voltage	90		264	VAC
Input Frequency		47		63	Hz
Output Power Range	Vin=90 to 264 VAC	0		63	W
Input Current (Low Line)	Io=Full load, Vin=115VAC			1.6	A
Input Current (High Line)	Io=Full load, Vin=230VAC			0.8	A
Low Line Inrush Current	Io=Full load, 25℃,Cool start, Vin=115VAC		15	18	A
High Line Inrush Current	Io=Full load, 25℃,Cool start, Vin=230VAC		21	25	A
Efficiency	Io=Full load, Vin=230VAC	70	80	85	%
Line Regulation	Io=Full load		0.5	1	%
Load Regulation	Vin=230VAC		3	7	%
Over Voltage Protection		112		132	%
Over Current Protection		110		150	%
Transient Response	Io=Full load to Half Load, Vin=100VAC			4	mS
Hold-Up Time	Io=Full load, Vin=110VAC	16			mS
Start Up Time	Io=Full load, Vin=100VAC	0.3	1	2	S
* Ripple & Noise (Peak to Peak)	Full load, Vin=90VAC		0.5	1	%
Safety Ground Leakage Current	Io=Full load, Vin=240VAC		0.1	0.3	mA
Temperature Coefficient	All output	-0.04		0.04	%/°C

* **Note:** The Ripple & Noise which is under 3.3VDC at 2% max
The range of OCP is set between 110-150% of total output power .

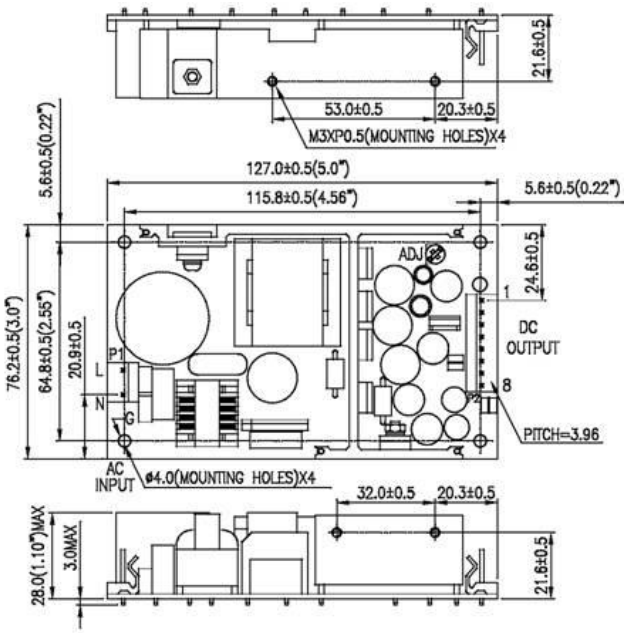
Conditions

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Operating Temperature		0	50	70	°C
Storage Temperature		-40		85	°C
Relative Humidity		5		95	%
Operating Temperature at 25°C, Calculated per MIL-HDBK-217F		0.1M			Hrs
De-rate linearly from 100% load at 50°C to 50% load at 70°C					

Approvals and Compliances

Parameter	Test Conditions	Min.	Unit
Dielectric Withstanding Voltage for Primary to secondary	Primary to secondary	5656	VDC
Dielectric Withstanding Voltage for Primary to Ground	Primary to ground	2828	VDC
Isolation Resistance	Test Voltage = 500VDC	50	MΩ
EMI requirements for CISPR-11	Vin=220VAC	B	CLASS
EMI requirements for FCC PART-18	Vin=110VAC	B	CLASS

Mechanical and PIN out



PIN CHART

PIN / MODEL	1	2	3	4	5	6	7	8 (Optional)
SMFA61-SXX	OUT	OUT	OUT	RTN	RTN	RTN	RTN	PFD
SMFA61-DXX	Vo2	Vo1	Vo1	COM	COM	N/C	N/C	PFD
SMFA61-D15	N/C	Vo1	Vo1	COM	COM	Vo3	N/C	PFD
SMFA61-TXX	Vo2	Vo1	Vo1	COM	COM	Vo3	N/C	PFD
SMFA61-QXX	Vo2	Vo1	Vo1	COM	COM	Vo3	Vo4	PFD

Note: Vo1: Output#1 Vo2:Output#2 Vo3:Output#3 Vo4:Output#4

Note:
1. Dimensions are shown in mm.
2. Weight: 420g approx.
3. Input connector mates with Molex housing 09-50-3031 and Molex 2478 series crimp terminal.
4. Output connector mates with Molex housing 09-50-3081 and Molex 2478 series crimp