



2"W x 4"L x 1.244"H

- Up to 40W Output Power
- Universal 90-264VAC Input
- Single Outputs from 5VDC to 48VDC
- High Efficiency up to 85%
- 4000VAC Isolation
- 1U Compatible Height



Model Number	Output Voltage	Max. O/P Amps	Efficiency (230VAC)	R&N p-p max.	Capacitive Load
SINGLE OUTPUT					
BSM40-5-A	5VDC	8	77% typ.	300mV	23,000uF
BSM40-9-A	9VDC	4.4	80% typ.	250mV	10,200uF
BSM40-12-A	12VDC	3.33	83% typ.	250mV	4,000uF
BSM40-15-A	15VDC	2.66	83% typ.	250mV	5,500uF
BSM40-24-A	24VDC	1.66	83% typ.	240mV	1,300uF
BSM40-36-A	36VDC	1.1	83% typ.	360mV	600uF
BSM40-48-A	48VDC	0.83	85% typ.	400mV	270uF

40W Single Output Class II Medical Power Supplies

BSM40 series

INPUT SPECIFICATIONS

Input Voltage Range	90-264 VAC (100-240VAC nom.)
Frequency Range	47-63 Hz
Input Current (90 / 264 Vin)	1A / 0.4A
Inrush Current (115 / 230 Vin)	30A / 60A typical *
Leakage Current (264V / 50Hz)	BF <100uA @ 240VAC, 50Hz

OUTPUT SPECIFICATIONS

Voltage and Current (Note 3)	See Selection Chart
Minimum Load	0 Amps
Turn On Delay Time	<1S
Rise Time	<30mS
Load Regulation (20%-FL)	± 1% max
Line Regulation (LL-HL)	± 1% max
Preset Accuracy (FL, 115Vin)	1%
Transient Response	See Page 3
Over-Shoot and Under-Shoot	<10% of O/P Voltage
Ripple/Noise (Note 1 & 4)	See Selection Chart
Over Voltage Protection	Latching re-power
Over Power Protection	240% max.*
Short Circuit Protection	Latching, Auto Recover *
Hold Up Time (115V / 60Hz)	8 mS, typ.
Capacitive Loading (Note 5)	See Selection Chart

PHYSICAL SPECIFICATIONS

Size (Inches / mm)	2" x 4" x 1.244" / 50.8 x 101.6 x 31.6
Construction	Open Frame
Weight	5.61oz (159g)

All specifications are typical at nominal input, full load, and 25°C unless otherwise noted

* These are stress ratings. Exposure of the devices to any of these conditions may adversely affect long term reliability. Proper operation under conditions other than the standard operating conditions is neither warranted nor implied.

GENERAL SPECIFICATIONS

Input-Out Isolation	4000VAC
Insulation Resistance	≥20MΩ; 500VDC, 1S I/P-O/P
Efficiency (typ.)	See Selection Chart
Switching Frequency	65Khz, (fixed, typical)
Safety UL/cUL:	ANSI/AAMI ES60601-1 3rd ed. CSA C22.2 No. 60601-1 3rd ed.
UL-EU:	EN60601-1 3rd ed.
CB:	IEC60601-1 3rd ed.
CE:	EN60601-1-2

ENVIRONMENTAL SPECIFICATIONS

Operating Temp. (Note 2)	-10 to +70°C, See Derate
Storage Temperature	-25 to +85°C *
Relative Humidity	0-95% *
ESD	IEC61000-4-2
RS	IEC61000-4-3
EFT	IEC61000-4-4
Surge	IEC61000-4-5
CS	IEC61000-4-6
DIPS	IEC61000-4-11
EMI	EN55011 B / CISPR 11 B
MTBF	196,000 Hrs Mil Std 217, 25°C
Vibration	2G Peak, 10-500Hz, 3 Axis, 30 min
Drop Test	70 cm Height

NOTES

1. Make all measurements directly at the pins of the supply
2. Specified for free air convection cooling
3. 115Vin minimum required for full load start up
4. Measured by paralleling 47uF/EC and 0.1uF ceramic capacitors on the output at a 20MHz band-width
5. The power supply should start up and operate normally into these capacitive loads within specified input voltage and output current ranges over the specified operating temperature range and according to Derate.

2.11 Dynamic load/Transient Response

All output voltages shall remain within regulation limits for transient/step loading and capacitive loads conditions specified in Table 2.

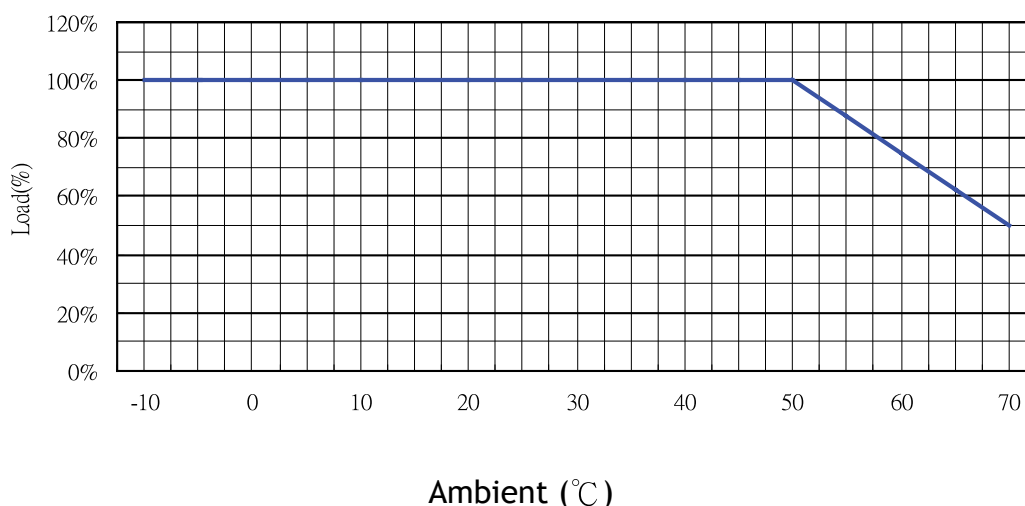
Dynamic load transient repetition rate shall be tested between 50Hz - 5KHz at duty cycle ranging from 10 - 90%. The Δ step load may occur anywhere within the min. load to max. load shown in Table 2.

Table 2

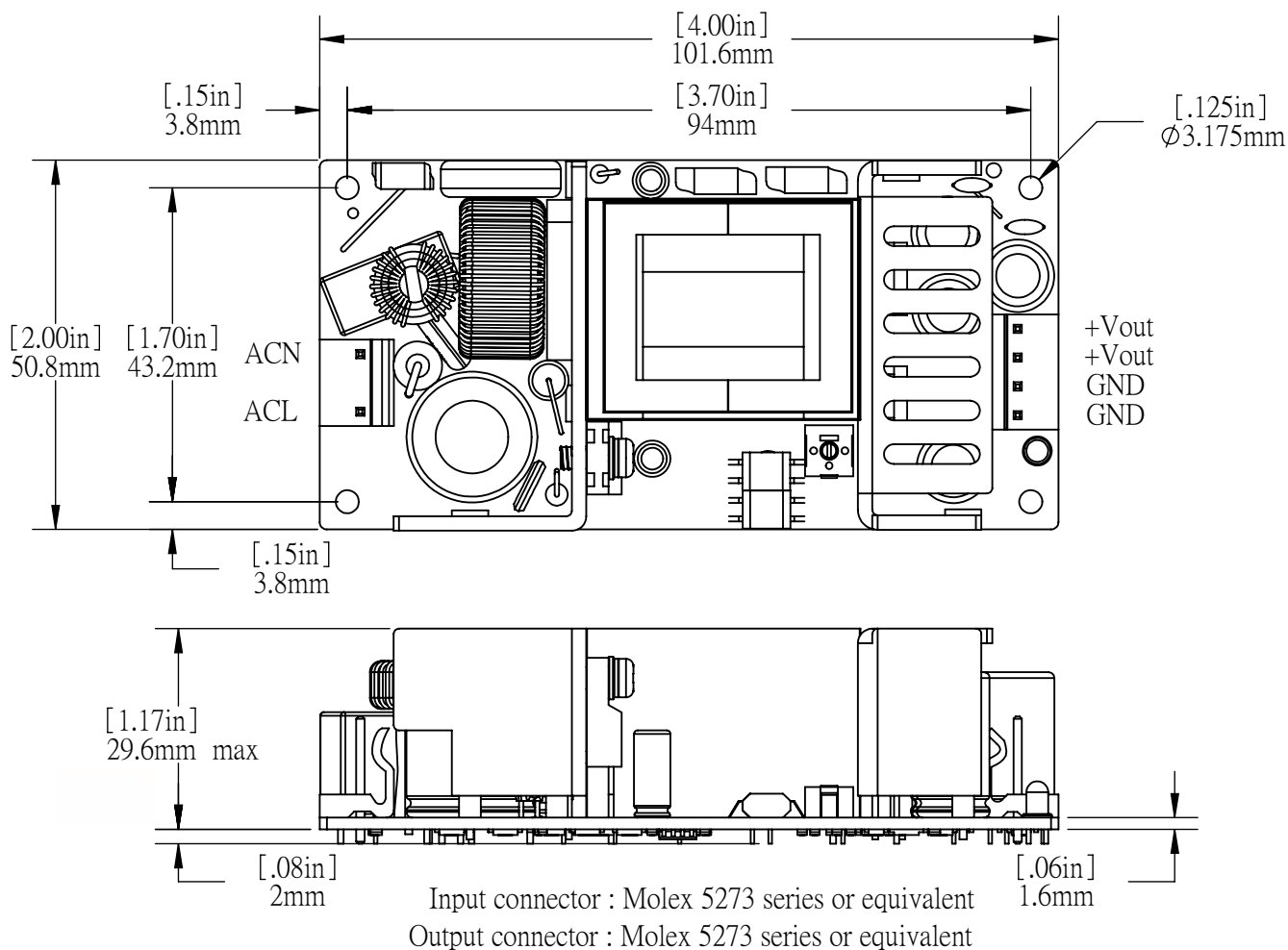
Output	5V		9V		12V		15V	
Δ Step load (A)	60%	100%	60%	100%	60%	100%	60%	100%
	4.8	8	2.64	4.4	2	3.33	1.6	2.66
Load slew rate (A/ μ sec.)	1		1		1		1	
Transient voltage response time (msec.)	10		10		10		10	

Output	24V		36V		48V	
Δ Step load (A)	60%	100%	60%	100%	60%	100%
	1	1.66	0.66	1.1	0.5	0.83
Load slew rate (A/ μ sec.)	1		1		1	
Transient voltage response time (msec.)	10		10		10	

Derating Curve



MECHANICAL DIMENSIONS



Length and Width Tolerance: $\pm 0.1\text{mm}$ (0.004in)