Astrodyne TDI
Now you have power.

60W Single Output Class II Medical Power Supplies

BSM60 series

2"W x 4"L x 1.244"H

- Up to 60W Output Power
- Universal 90-264VAC Input
- Single Outputs from 5VDC to 48VDC
- High Efficiency up to 86%
- 4000VAC Isolation
- 1U Compatible Height

Model Number	Output Voltage	Max. O/P Amps	Efficiency	R&N p-p max.	Capacitive Load
SINGLE OUTPUT					
BSM60-5-A	5VDC	9	80% typ.	300mV	23,000uF
BSM60-9-A	9VDC	5	80% typ.	250mV	10,200uF
BSM60-12-A	12VDC	5	83% typ.	250mV	4,000uF
BSM60-15-A	15VDC	4	83% typ.	250mV	5,500uF
BSM60-24-A	24VDC	2.5	84% typ.	250mV	1,300uF
BSM60-36-A	36VDC	1.66	84% typ.	250mV	600uF
BSM60-48-A	48VDC	1.25	86% typ.	250mV	270uF

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INPUT SPECIFICATIONS

Input Voltage Range	90-264 VAC (100-240V nom.)
Frequency Range	47-63 Hz
Input Current (90 / 264 Vin)	1.5A / 0.7A
Inrush Current (115 / 230 Vin)	30A / 60A typical *
Leakage Current (264V / 50Hz)	<0.25mA

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	140% +20/-10% nom. I/P Range *
Short Circuit Protection	Latching, Auto Recover *
Hold Up Time (115V / 60Hz)	10 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 warranteed 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
MTBF	185,000 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. 100VAC 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.

Dynamic load/Transient Response

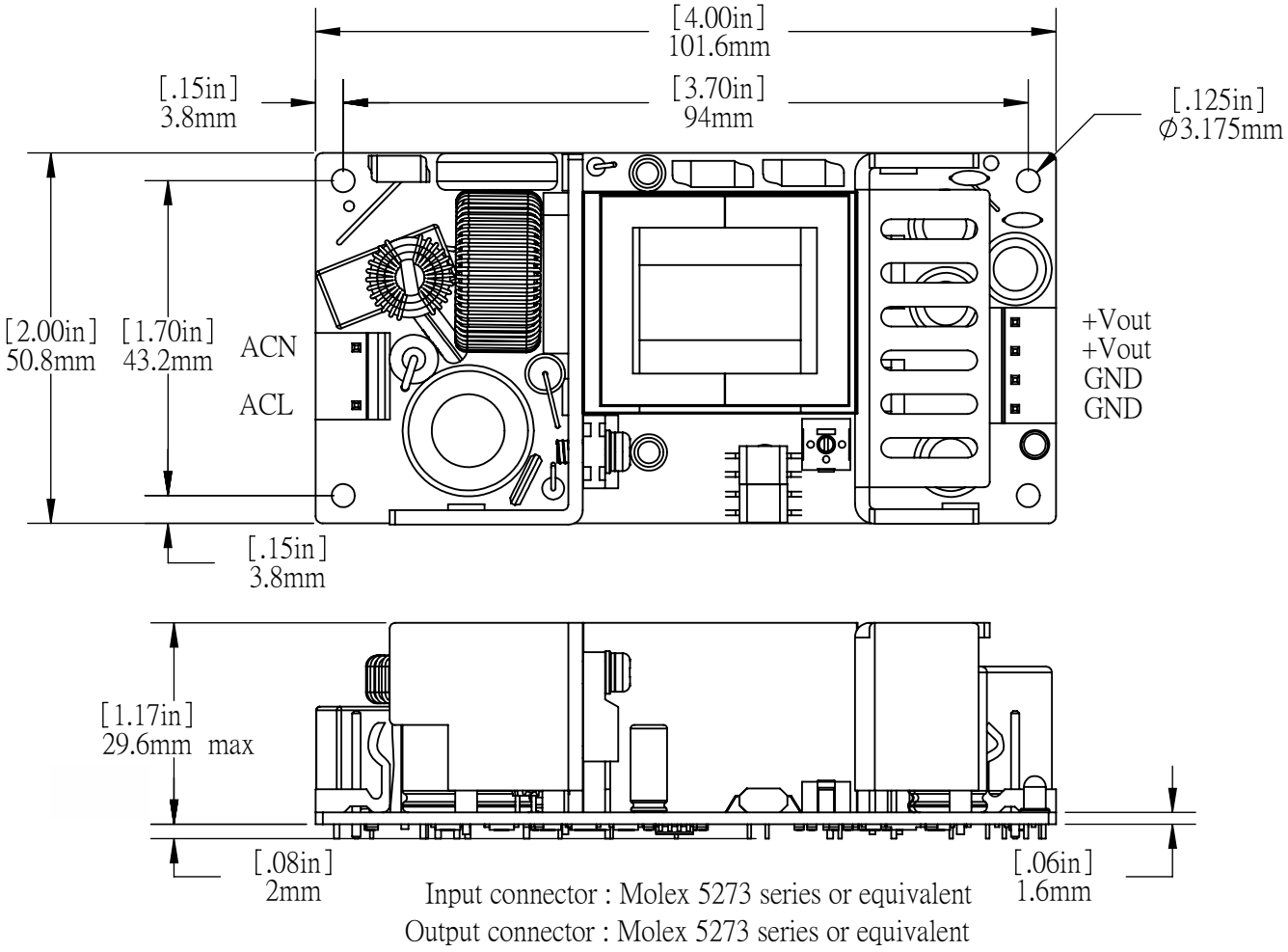
All output voltages shall remain within regulation limits for transient/ step loading and capacitive loads conditions specified in Table 1. Dynamic load transient repetition rate shall be tested between 50Hz – 5KHz at duty cycle ranging from 10 - 90%. The Δ step load may occur anywhere within the min. load to max. load shown in Table 1.

Table 1

Output	5V		9V		12V		15V	
Δ Step load (A)	60%	100%	60%	100%	60%	100%	60%	100%
	5.4	9	3	5	3	5	2.4	4
Load slew rate (A/μsec.)	1		1		1		1	
Transient voltage response time (msec.)	10		10		10		10	

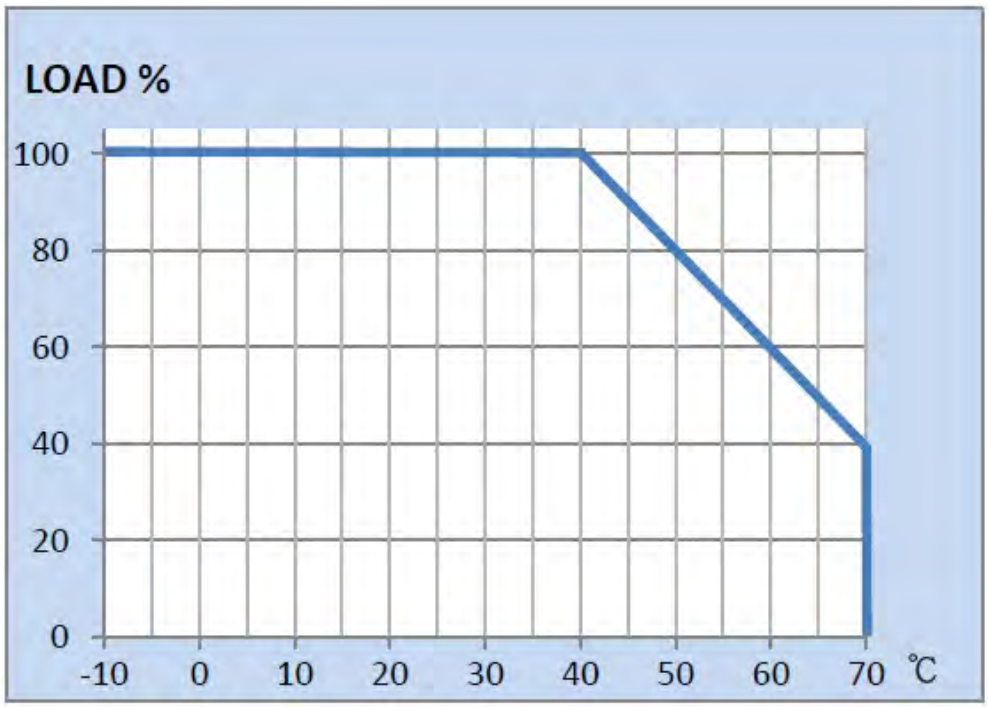
Output	24V		36V		48V	
Δ Step load (A)	60%	100%	60%	100%	60%	100%
	1.5	2.5	1	1.67	0.75	1.25
Load slew rate (A/μsec.)	1		1		1	
Transient voltage response time (msec.)	10		10		10	

MECHANICAL DIMENSIONS

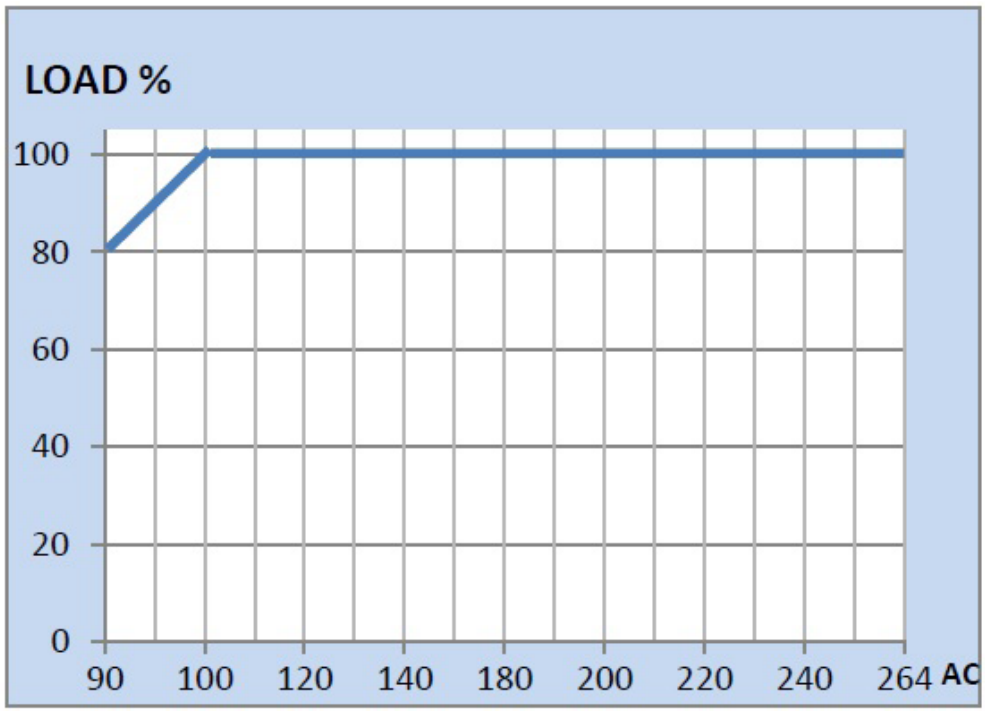


Length and Width Tolerance: ± 0.1mm (0.004in)

DERATE CURVES



AMBIENT TEMPERATURE



INPUT VAC