ASTRODYNE

15W Medical Grade Ultraminiature Switching Power Supplies

MMA-15 series



- Single / Dual / Triple Outputs
- Universal 85VAC to 265VAC Input
- 3.3VDC to 24VDC Outputs
- 4,000VAC Input to Output Isolation
- PCB and Chassis Mount Packages
- Full Safety Approvals

PCB 2.75"L x 1.89"W x 0.93"H
Chassis 3.96"L x 2.16"W x 1.0"H

Fully Approved
UL/CSA22.2 2601 File# E167432
EN60601-1 File# B021022749034

Model Number	Output Voltage	Output Amps	Output Watts
SINGLE OUTPUT - PCB Mount			
MSMA-1500	3.3 VDC	3.5	12W
MSMA-1501	5 VDC	3	15W
MSMA-1504	9 VDC	1.66	15W
MSMA-1502	12 VDC	1.25	15W
MSMA-1503	15 VDC	1	15W
MSMA-1505	24 VDC	0.63	15W
SINGLE OUTPUT - Chassis Mount			
MSMC-1500	3.3 VDC	3.5	12W
MSMC-1501	5 VDC	3	15W
MSMC-1504	9 VDC	1.66	15W
MSMC-1502	12 VDC	1.25	15W
MSMC-1503	15 VDC	1	15W
MSMC-1505	24 VDC	0.63	15W
SINGLE OUTPUT - DIN Rail Mount			
MSMC-1500/DRL	3.3 VDC	3.5	12W
MSMC-1501/DRL	5 VDC	3	15W
MSMC-1504/DRL	9 VDC	1.66	15W
MSMC-1502/DRL	12 VDC	1.25	15W
MSMC-1503/DRL	15 VDC	1	15W

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Model Number	Output Voltage	Output Amps	Output Watts
DUAL OUTPUT - PCB Mount			
MDMA-1506	+/-12 VDC	+/-0.63	15W
MDMA-1507	+/-15 VDC	+/-0.5	15W
MDMA-1508	+5/12 VDC	1.5/0.63	15W
DUAL OUTPUT - Chassis Mount			
MDMC-1506	+/-12 VDC	+/-0.63	15W
MDMC-1507	+/-15 VDC	+/-0.5	15W
MDMC-1508	+5/12 VDC	1.5/0.63	15W
DUAL OUTPUT - DIN Rail Mount			
MDMC-1506/DRL	+/-12 VDC	+/-0.63	15W
MDMC-1507/DRL	+/-15 VDC	+/-0.5	15W
MDMC-1508/DRL	+5/12 VDC	1.5/0.63	15W
TRIPLE OUTPUT - PCB Mount			
MTMA-1509	+5,+/-12 VDC	2.5,0.1/0.1	15W
MTMA-1511	+5,+/-15 VDC	2.5,0.1/0.1	15W
TRIPLE OUTPUT - Chassis Mount			
MTMC-1509	+5,+/-12 VDC	2.5,0.1/0.1	15W
MTMC-1511	+5,+/-15 VDC	2.5,0.1/0.1	15W
TRIPLE OUTPUT - DIN Rail Mount			
MTMC-1509/DRL	+5,+/-12 VDC	2.5,0.1/0.1	15W
MTMC-1511/DRL	+5,+/-15 VDC	2.5,0.1/0.1	15W

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INPUT SPECIFICATIONS

Input Voltage, Nominal	85-265VAC
	Nominal: 100-240VAC
Input Frequency	47-440 Hz, 50-60Hz Nom.
Inrush Current	20A @ 100VAC, typ
	40A @ 200VAC, typ

OUTPUT SPECIFICATIONS

Output Voltage/Current	See Specific Model
Initial Accuracy	+/-1%, adjustable
Voltage Adjust	+/-6%, typ
Load Regulation	+/-0.3%, typ
Line Regulation	+/-0.3%, typ
Temperature Coefficient	+/-0.03%/°C
Ripple/Noise(20Mhz BW)	150mV Pk-Pk, typ
Overvoltage Protection	Clamp, 130-150% *
Hold Up Time	30mS, typ
Short Circuit Protection	Continuous, self-recovering *
Current Limit	130% typ,Self-Reset Foldback

GENERAL SPECIFICATIONS

On/Off Control	Open Collector
	Logic "1"/Open=ON
	Logic "0"/GND=OFF
Input-Out Isolation	4000VAC
Output-Ground Isolation	1000VAC
Input-Ground Isolation	2500VAC
Operating Frequency	140 Khz, fixed
Efficiency (@ Full Load)	75 - 80%, typ

ENVIRONMENTAL SPECIFICATIONS

Oper. Temperature	0 to +50°C FL See Derate *
	(Free-air Convection)
Relative Humidity	0-95%, Non-Condensing
Storage Temperature	-25 to +71°C *
MTBF, Single/Multi Output	180,000 Hrs/110,000 Hrs
	Mil Std 217, 25C

PHYSICAL SPECIFICATIONS

Case Material	Rynite, 94V-0 Rated
Construction	Encapsulated, Soft Pot
Weight	PCB / CHA
	5.6 oz (158g) / 8.9 oz (250g)

All specifications are typical at nominal input, full load, and 25DegC 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.

Astrodyne products are not authorized or warranteed for use as critical components in life support systems, equipment used in hazardous environments, nuclear controls systems, or other mission-critical applications.

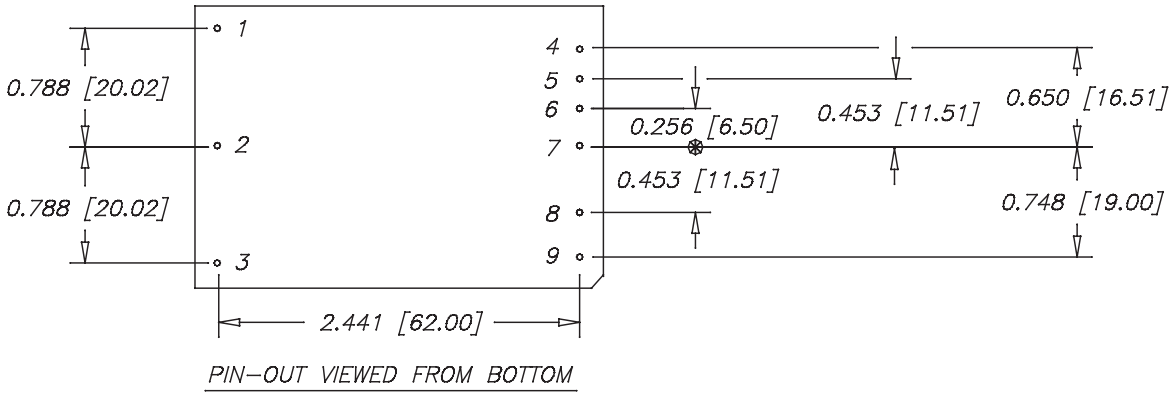
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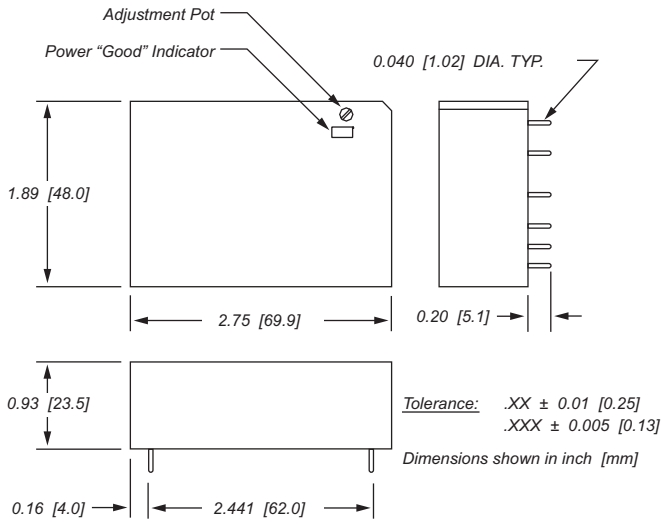
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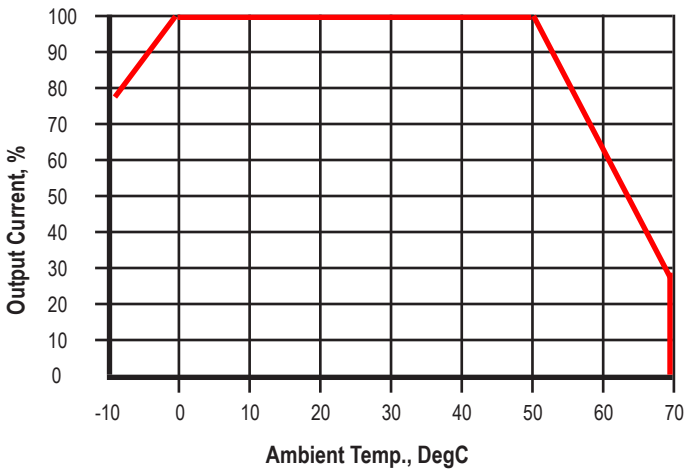
MECHANICAL DIMENSIONS - PCB MOUNT

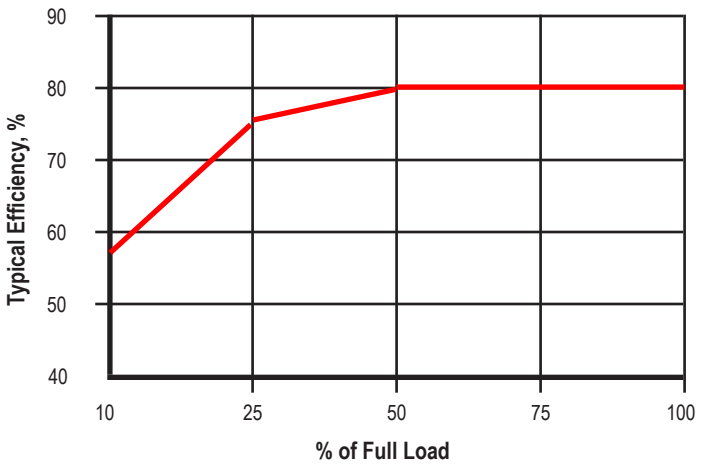




Model Type / Pin#	Single	Dual Matched	Dual 5/12V	Triple
1	AC HI	AC HI	AC HI	AC HI
2	AC LO	AC LO	AC LO	AC LO
3	GND	GND	GND	GND
4	No Pin	No Pin	No Pin	+Vout
5	+Vout	+Vout	12Vout	+/-Com
6	No Pin	No Pin	No Pin	-Vout
7	No Pin	Out Com	+5Vout	+5Vout
8	-Vout	-Vout	Out Com	+5V Ret
9	Ctrl	Ctrl	Ctrl	Ctrl

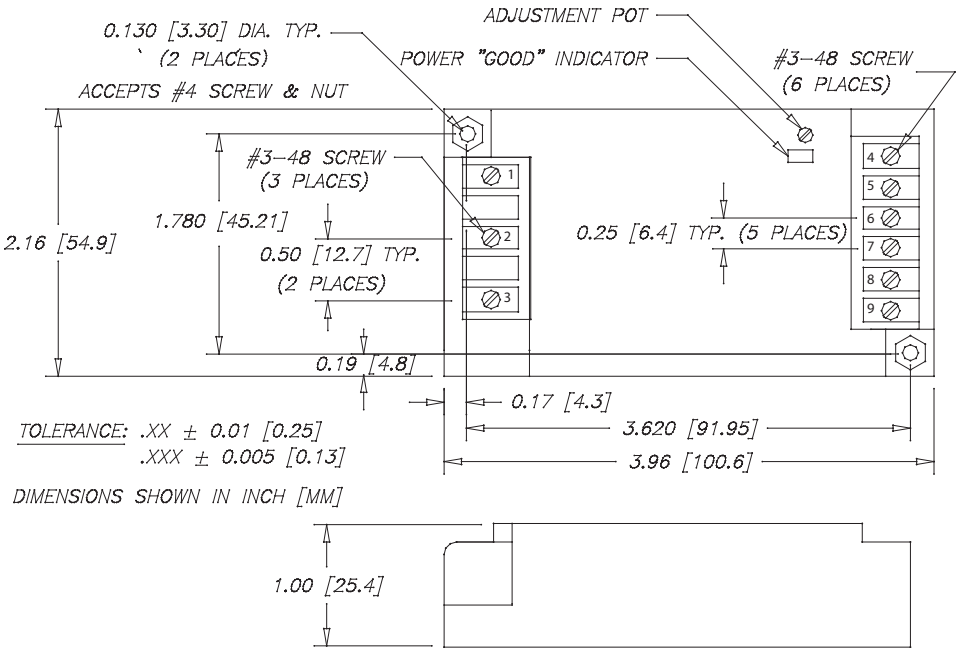
PERFORMANCE CURVES



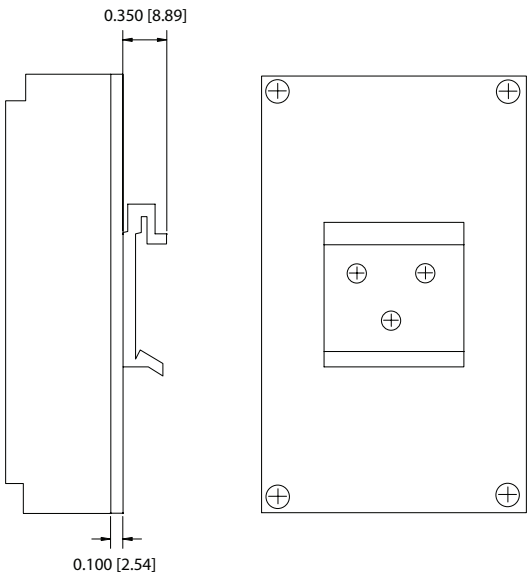


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MECHANICAL DIMENSIONS - CHASSIS MOUNT



MECHANICAL DIMENSIONS - DIN RAIL



Model Type / Pin#	Single	Match Dual	Unmatch Dual	Triple
1	AC LO	AC LO	AC LO	AC LO
2	GND	GND	GND	GND
3	AC HI	AC HI	AC HI	AC HI
4	Ctrl	Ctrl	Ctrl	Ctrl
5	-Vout	-Vout	Com	+5 Ret
6	-Vout	Com	Com	+5Vout
7	+Vout	Com	+5Vout	-Vout
8	+Vout	+Vout	+12Vout	+/- Com
9	N/C	N/C	N/C	+Vout

DIN Rail mounting kit available for Chassis-mount modules, specify part # M-DRL-15. Kit includes mounting plate, DIN Rail cliip and assembly hardware.

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