Power-One MAP55-4003

AC-DC Power Supply

Limited Availability
Used and in Excellent Condition

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CE

RoHS Compliant

Features

- RoHS lead-solder-exempt compliant
- Wide Range Input for 110/220 VAC Applications
- Meets EN55022, Conducted Class B Limits
- Compact Footprint: 6.00" x 3.27" x 1.60" (152.4mm x 83.1mm x 40.6mm)
- Greater than 225,000 Hours MTBF
- Metric and SAE Mounting Inserts

Description

Power-One's MAP55 Series of power supplies provides reliable, tightly-regulated DC power for commercial and industrial systems. Wide-range AC input and full international safety, EMI, and ESD compliance ensure worldwide acceptance. All units bear the CE Mark.

The MAP55 utilizes a thermally efficient U-channel chassis design, which allows full power operation in convection-cooled applications. Other mechanical design innovations include metric and SAE mounting inserts on each mounting surface to provide integration flexibility. Dual-mode connectors provide traditional terminal block connections or popular single row Molex connector mating.

Single-output models feature wide-range output adjustability to meet a wide variety of standard and user-specific output voltage requirements.

Single-Output Model Selection

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	MAXIMUM OUTPUT CURRENT	PEAK OUTPUT CURRENT (NOTE 3)	LINE REGULATION	LOAD REGULATION	RIPPLE & NOISE %p-p (NOTE 1)	INITIAL SETTING ACCURACY
MAP40-1005	5V	4.7V to 5.50V	8A	11A	0.2%	±1.5%	1%	5.0V to 5.2V
MAP55-1012	12V/15V	11.4V to 15.75V	5.0/4.0A (Note 2)	5.8/4.7A (Note 2)	0.2%	±1%	1%	12.0V to 12.2V
MAP55-1024	24V/28V	23.5V to 28.5V	2.5/2.2A (Note 2)	2.9/2.5A (Note 2)	0.2%	1%	1%	23.8V to 24.2V

NOTES: 1) Maximum peak to peak noise expressed as a percentage of output voltage, 20 MHz bandwidth.
2) MAP55-1012 output currents are expressed as 12V/15V operation. MAP55-1024 output currents are expressed as 24V/28V operation.
3) Peak load for 60 seconds or less are acceptable, 10% duty cycle, maximum.

Multiple-Output Model Selection – 55W Continuous Output Power

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	OUTPUT CURRENT	PEAK OUTPUT CURRENT (NOTE 1)	LINE REGULATION	LOAD REGULATION	RIPPLE & NOISE %p-p (NOTE 2)	INITIAL SETTING ACCURACY
MAP55-4000	+5V	4.7V to 5.6V	6A	8A	0.2%	2%	1%	5.0V to 5.2V
	+12V	Fixed	3A	5A	0.2%	2%	1%	11.6V to 12.4V
	-5V	Fixed	0.5A	1A (Note 3)	0.5%	2%	1%	-4.8V to -5.2V
	-12V	Fixed	0.5A	1A (Note 3)	0.5%	2%	1%	-11.6V to -12.4V
MAP55-4001	+5V	4.7V to 5.6V	6A	8A	0.2%	2%	1%	5.0V to 5.2V
	+24V	Fixed	1.5A	2.5A	0.2%	2%	1%	23.0V to 24.9V
	-12V	Fixed	0.5A	1A (Note 3)	0.5%	2%	1%	-11.6V to -12.4V
	+12V	Fixed	0.5A	1A (Note 3)	0.5%	2%	1%	11.6V to 12.4V
MAP55-4002	+5V	4.7V to 5.6V	6A	8A	0.2%	2%	1%	5.0V to 5.2V
	+12V	Fixed	3A	5A	0.2%	2%	1%	11.6V to 12.4V
	-12V	Fixed	0.5A	1A (Note 3)	0.5%	2%	1%	-11.6V to -12.4V
	+12V	Fixed	0.5A	1A (Note 3)	0.5%	2%	1%	11.6V to 12.4V
MAP55-4003	+5V	4.7V to 5.6V	6A	8A	0.2%	2%	1%	5.0V to 5.2V
	+15V	Fixed	2.5A	3.5A	0.2%	2%	1%	14.6V to 15.4V
	-5V	Fixed	0.5A	1A (Note 3)	0.5%	2%	1%	-4.8V to -5.2V
	-15V	Fixed	0.5A	1A (Note 3)	0.5%	2%	1%	-14.4V to -15.6V
MAP55-4004	+5V	4.7V to 5.6V	6A	8A	0.2%	2%	1%	5.0V to 5.2V
	+24V	Fixed	1.5A	2.5A	0.2%	2%	1%	23.0V to 24.9V
	-15V	Fixed	0.5A	1A (Note 3)	0.5%	2%	1%	-14.5V to -15.5V
	+15V	Fixed	0.5A	1A (Note 3)	0.5%	2%	1%	14.5V to 15.5V

NOTES: 1) Peak loads up to 65 watts for 60 seconds or less are acceptable, (10% duty cycle max.). Peak power must not exceed 65 watts.
2) Maximum peak to peak noise expressed as a percentage of output voltage, 20 MHz bandwidth.
3) Maximum load on V3 or V4 could be 1 amp continuous if output V4 or V3 is unloaded.

Input Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Input Voltage - AC	Continuous input range.	90 175		132 264	VAC
Input Frequency	AC input.	47		63	Hz
Brown Out Protection	Lowest AC input voltage that regulation is maintained with full rated loads.	90			VAC
Hold-up Time	Nominal AC Input Voltage (115VAC), full rated load.	20			ms
Input Current	90 VAC (55W load).		1.6		ARMS
Input Protection	Non-user serviceable internally located AC input line fuse.				
Inrush Surge Current	Internally limited by thermistor. Vin = 264VAC (one cycle). 25° C.			38	APK
Operating Frequency	Switching frequency of power supply (varies with load).	22		180	kHz

Output Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Efficiency	Full load, 115VAC. Varies with distribution of loads among outputs.	73			%
Minimum Loads	MAP55-1012 MAP55-1024 MAP40-1005 and all multiple output models, main channel only.	0.21 0.11 0.50			Amps
Ripple and Noise	Full load, 20MHz bandwidth.			See Model Selection Chart.	
Output Power	Continuous output power, all multiple output models. Peak output power (60s maximum, 10% duty cycle), all multiple output models.			55 65	Watts Watts
Overshoot / Undershoot	Output voltage overshoot/undershoot at turn-on, V1, V2.			1	%
Regulation	Varies by output. Total regulation includes: line changes from 90-132 VAC or 175-264 VAC, changes in load starting at 20% load and changing to 100% load.			See Model Selection Chart.	
Transient Response	Recovery time, to within 1% of initial set point due to a 50-100% load change, 4% max. deviation. (Main output of multiple output units).			500	µs
Turn-on Delay	Time required for initial output voltage stabilization.	1		4	Sec
Turn-on Rise Time	Time required for output voltage to rise from 10% to 90% (Note 1).		7		ms

NOTES: 1) Nominal rise time for MAP55-1024 is 36 msec.

Interface Signals and Internal Protection

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Overvoltage Protection	MAP40-1005	5.5		6.8	V
	MAP55-1012	17.5		19.7	
	MAP55-1024	32.0		36.0	
	Main output only of multiple output units.	5.6		6.8	
Overload Protection	Fully protected against output overload and short circuit. Automatic recovery upon removal of overload condition.				

Safety, Regulatory, and EMI Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Agency Approvals	UL1950. CSA 22.2 No. 234/950. EN60950 (TUV).		Approved.		
Dielectric Withstand Voltage	Input to output.	2600			VDC
Electromagnetic Interference, Conducted	FCC CFR title 47 Part 15 Sub-Part B - conducted & radiated. EN55022 / CISPR 22 conducted. EN55022 / CISPR 22 radiated.	B B A			Class
Insulation Resistance	Input to output.	7			MΩ
Leakage Current	Per EN60950, 264VAC.			500	µA

NUCLEAR AND MEDICAL APPLICATIONS - Power-One products are not designed, intended for use in, or authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the respective divisional president of Power-One, Inc.

TECHNICAL REVISIONS - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.

Environmental Specifications

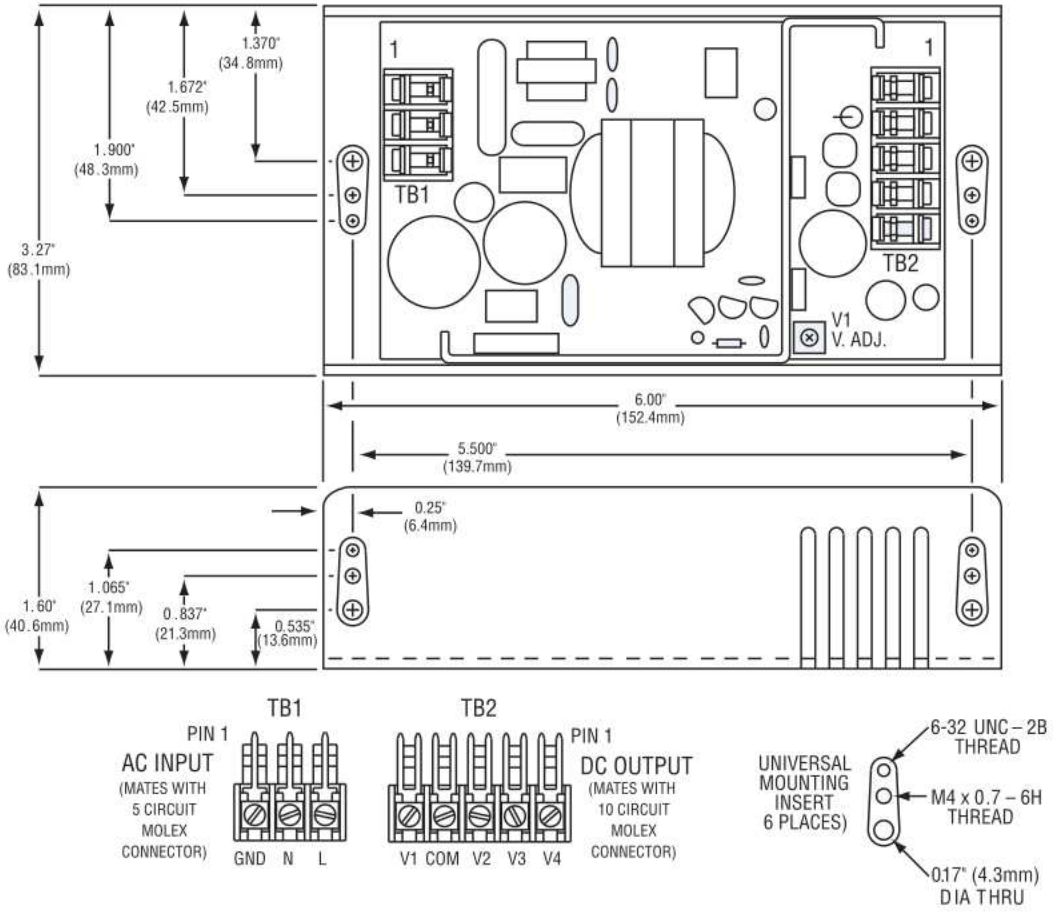
PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Altitude	Operating. Non-operating.				10k 40k	Feet
Operating Temperature	Derate linearly above 50°C by 2.5% per °C to a maximum temperature of 70°C.	At 100% load: At 50% load:	0 0		50 70	°C °C
Storage Temperature			-40		85	°C
Temperature Coefficient	0°C to 70°C (after 15 minute warm-up).			±0.02	±0.03	%/°C
Relative Humidity	Non-condensing.		5		95	%RH
Shock	Operating, peak acceleration.				20	G
Vibration	Random vibration, 10 Hz to 2 kHz, 3 axis.				6	GRMS

Options

DESCRIPTION	NOTES	DIMENSIONS
Cover	Add 'C' suffix to model number or order part number 412-59584-G separately. For convection cooled applications, derate output power to 45 watts on multiple output units, 50 watts on MAP55-1012 and MAP55-1024,and 40 watts on MAP40-1005.	6.00" x 3.27" x 1.85" (152.4mm x 83.1mm x 47.0mm)

OVERALL SIZE: 6.00" x 3.27" x 1.60" (152.4mm x 83.1mm x 40.6mm)

WEIGHT: 1.1 LBS (0.55 kg)



INPUT & OUTPUT CONNECTIONS: 6-32 SCREW WIRE CLAMPS ON 0.312" (7.9mm) CENTERS, 0.045" (1.1mm) SQUARE PINS ON 0.156" (3.4mm) CENTERS, MATES WITH MOLEX SERIES 2139, 6442, OR 41695

CHASSIS: 0.090" (2.3mm) ALUMINUM ALLOY, WITH CLEAR FINISH