



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 |
| MAP55-4001 | -12V | Fixed | 0.5A | 1A (Note 3) | 0.5% | 2% | 1% | -11.6V to -12.4V |
| | +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 |
| MAP55-4002 | -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 |
| | +5V | 4.7V to 5.6V | 6A | 8A | 0.2% | 2% | 1% | 5.0V to 5.2V |
| MAP55-4003 | +12V | Fixed | 3A | 5A | 0.2% | 2% | 1% | 11.6V to 12.4V |
| | +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 |
| MAP55-4004 | -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 |
| | +5V | 4.7V to 5.6V | 6A | 8A | 0.2% | 2% | 1% | 5.0V to 5.2V |
| MAP55-4004 | +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 MAP55-1012 MAP55-1024 Main output only of multiple output units. | 5.5 17.5 32.0 5.6 | | 6.8 19.7 36.0 6.8 | V |
| 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

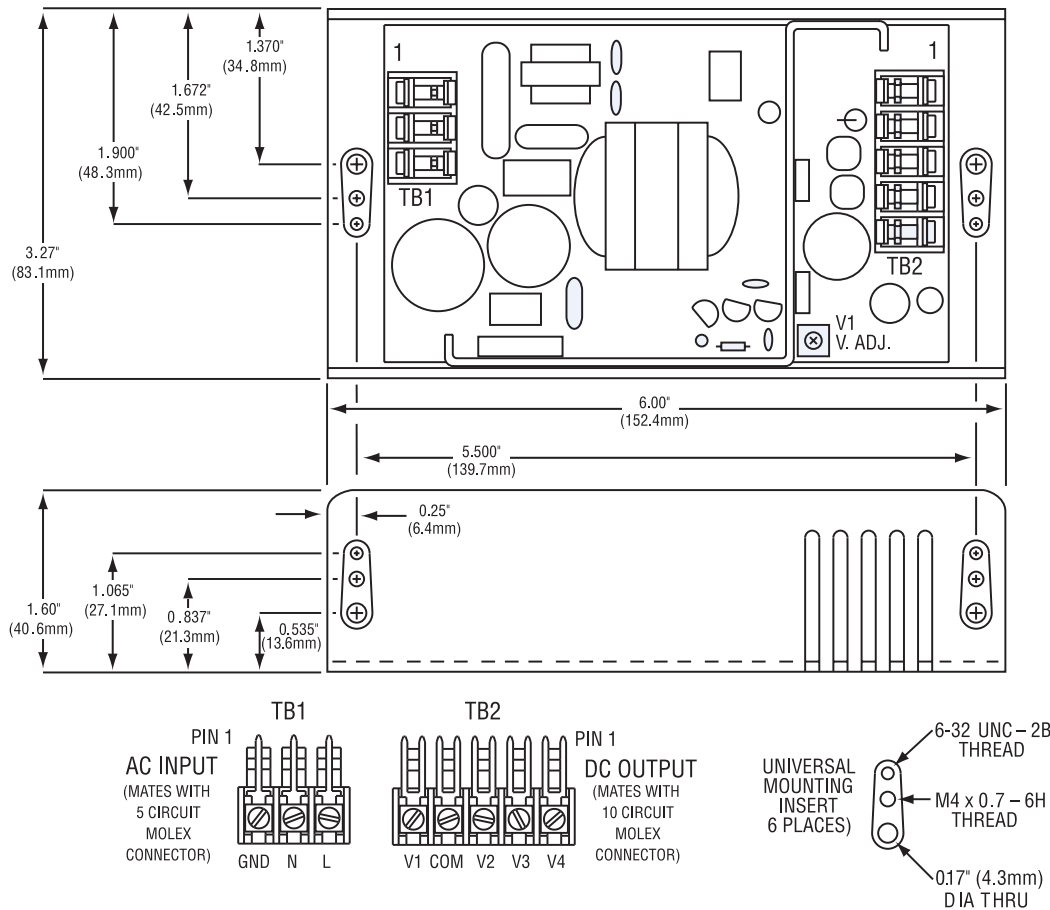
| PARAMETER | CONDITIONS/DESCRIPTION | MIN | NOM | MAX | UNITS |
|-------------------------|---|---------------|-------|-------|-------|
| Altitude | Operating. | | | 10k | Feet |
| | Non-operating. | | | 40k | |
| Operating Temperature | Derate linearly above 50°C by 2.5% per °C to a maximum temperature of 70°C. | At 100% load: | 0 | 50 | °C |
| | | At 50% load: | 0 | 70 | °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