

UNIVERSAL INPUT

FEATURES

- ◆ Low safety ground leakage current
- ◆ 2.5" x 4.25" x 0.96" (W x L x H) compact size, low profile
- ◆ Wide input range 85 to 264 VAC
- ◆ Input surge current protection
- ◆ Over voltage & over current protection
- ◆ Open PCB construction
- ◆ Recognized or certified by UL/CSA/TÜV & CE marked to LVD (in process)

DESCRIPTION

The SM25P series of compact, open PCB constructed, AC-DC switching power supplies are capable of delivering 25 watts of continuous output power. They operate at 85 to 264 VAC input voltage without the need of voltage selection. They are ideally suited for use in medical equipment, safety systems and monitoring equipment, not for patient contact.

INPUT SPECIFICATIONS

| | |
|------------------|---|
| Input Voltage: | 85 to 264 VAC |
| Input Frequency: | 47 to 63Hz |
| Input Current: | 0.70A (rms) for 115 VAC 0.40A (rms) for 230 VAC |
| Leakage Current: | 90µA max. at 115 VAC, 60Hz 150µA max. at 230 VAC, 50Hz |

ENVIRONMENTAL SPECIFICATIONS

| | |
|------------------------|--|
| Operating Temperature: | 0°C to +70°C |
| Storage Temperature: | -40°C to +85°C |
| Relative Humidity: | 5% to 95% non-condensing |
| Derating: | Derate from 100% at +50°C linearly to 50% at +70°C |

SM25P SERIES 25 WATT MEDICAL SWITCHING POWER SUPPLY LOW PROFILE

GENERAL SPECIFICATIONS

| | |
|----------------------|---|
| Switching Frequency: | 42kHz \pm 5kHz |
| Efficiency: | 70% min. on single output models with $V_o \geq 12V$, 68% minimum on all others |
| Hold-up Time: | 10mS min. at 110 VAC |
| Line Regulation: | \pm 0.5% max. at full load |
| Inrush Current: | 10 amps at 115 VAC or 25 amps at 230 VAC (at 25°C cold start) |
| Withstand Voltage: | 4000 VAC input to output 1500 VAC input to ground 500 VAC output to ground |
| MTBF (25°C ambient): | 500,000 hours min. full load per MIL-HDBK-217F |
| EMI Requirements: | Meets conducted limits of (a) FCC Level B (b) EN 55011 Class B |
| Safety Requirements: | Meets or exceeds: (a) UL 2601-1 (b) CSA C22.2 No. 601.1 (c) IEC 601-1 (EN 60601-1) |

OUTPUT SPECIFICATIONS

| | |
|--------------------------|--|
| Output Voltage/Current: | See rating chart |
| Total Output Power: | See rating chart |
| Ripple and Noise: | 1% peak to peak max. |
| Over voltage Protection: | Provided on output #1 only; set at 112-132% of its nominal output voltage |
| Over current Protection: | All outputs protected to short circuit conditions |
| Temp. Coefficient: | All outputs, \pm 0.04%/°C max. |
| Transient Response: | Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500µs after a 25% step load change |



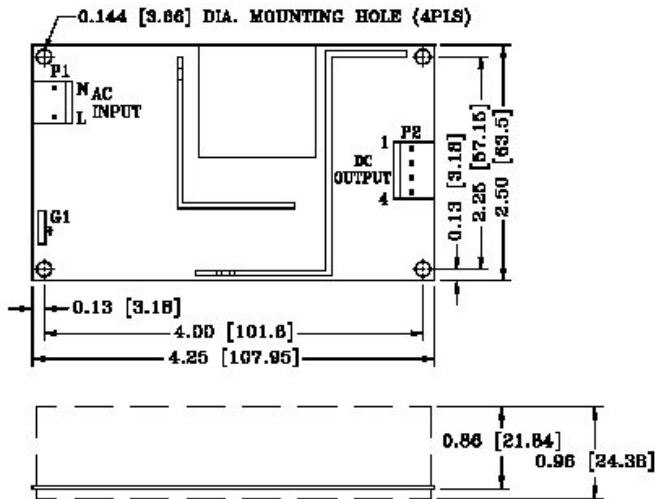
OUTPUT VOLTAGE/CURRENT RATING CHART

| Model | Output #1 | | | | Output #2 | | | | Output #3 | | | | Max. Power |
|---------|-----------|------|------------------|------|-----------|------|------------------|------|-----------|-------|------------------|------|------------|
| | Vnom | Imin | I _{max} | Tol. | Vnom | Imin | I _{max} | Tol. | Vnom | Imin | I _{max} | Tol. | |
| SM25P10 | 5.1V | 0A | 5.5A | 2% | (N/A) | | | | (N/A) | | | | 28W |
| SM25P12 | 12V | 0A | 2.3A | 1% | (N/A) | | | | (N/A) | | | | 28W |
| SM25P13 | 15V | 0A | 1.9A | 1% | (N/A) | | | | (N/A) | | | | 28W |
| SM25P14 | 24V | 0A | 1.2A | 1% | (N/A) | | | | (N/A) | | | | 28W |
| SM25P15 | 28V | 0A | 1.0A | 1% | (N/A) | | | | (N/A) | | | | 28W |
| SM25P23 | +5.1V | 0.4A | 2.5A | 3% | +12V | 0.2A | 1.5A | 5% | (N/A) | | | | 25W |
| SM25P25 | +5.1V | 0.4A | 2.5A | 3% | +24V | 0.1A | 0.8A | 5% | (N/A) | | | | 25W |
| SM25P31 | +5.1V | 0.4A | 2.5A | 3% | +12V | 0.2A | 1.5A | 5% | -12V | 0.05A | 0.2A | 4% | 25W |
| SM25P32 | +5.1V | 0.4A | 2.5A | 3% | +15V | 0.1A | 1.0A | 5% | -15V | 0.05A | 0.2A | 4% | 25W |
| SM25P39 | +5.1V | 0.4A | 2.5A | 3% | +24V | 0.1A | 0.8A | 5% | -12V | 0.05A | 0.2A | 4% | 25W |

Notes: (1) All multiple output models may be operated at no-load without damage. At no-load, output voltage tolerance increases to 10%.
 (2) Ripple and noise: Peak-to-peak with 20MHz bandwidth and 10µF in parallel with a 0.1µF capacitor at rated line voltage and load ranges.

MECHANICAL SPECIFICATIONS

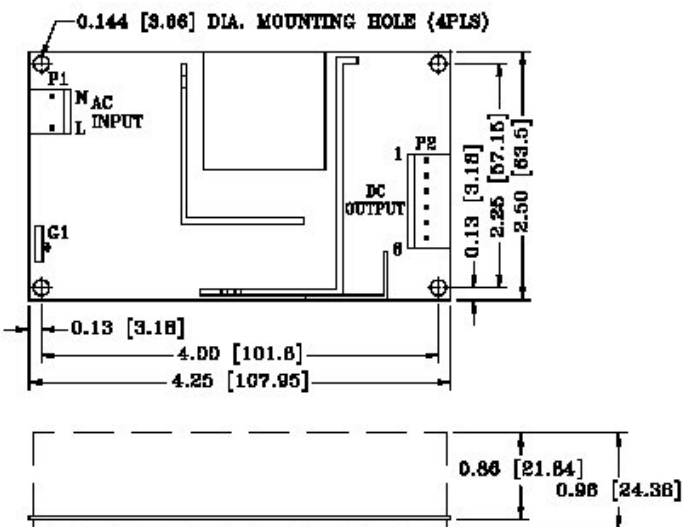
SINGLE OUTPUT



Notes:

1. Dimensions shown in inch (mm)
2. Tolerance 0.03 (0.76) maximum
3. Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal
4. Output connector mates with Molex housing 09-50-3041 and Molex 2878 series crimp terminal
5. Weight: 163 grams

MULTIPLE OUTPUT



Notes:

1. Dimensions shown in inch (mm)
2. Tolerance 0.03 (0.76) maximum
3. Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal
4. Output connector mates with Molex housing 09-50-3061 and Molex 2878 series crimp terminal
5. Weight: 175 grams

PIN CHART

Single Output Models

| MODEL \ PIN | | 1 | 2 | 3 | 4 |
|-------------|---------|--------|--------|-----------|-----------|
| SM25P10 | SM25P12 | RETURN | RETURN | OUTPUT #1 | OUTPUT #1 |
| SM25P13 | SM25P14 | | | | |
| SM25P15 | | | | | |

Multiple Output Models

| MODEL \ PIN | | 1 | 2 | 3 | 4 | 5 | 6 |
|-------------|---------|-----------|-----------|-----------|---------------|---------------|-----------|
| SM25P23 | SM25P25 | OUTPUT #2 | OUTPUT #1 | OUTPUT #1 | COMMON RETURN | COMMON RETURN | N.C. |
| SM25P31 | SM25P32 | OUTPUT #2 | OUTPUT #1 | OUTPUT #1 | COMMON RETURN | COMMON RETURN | OUTPUT #3 |
| SM25P39 | | | | | | | |

Note: All data are subject to change without notice

