



VP ELECTRONIQUE



KEY FEATURES

- Switching Power Modules for PCB Mounting
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC, 47-440 Hz
- Regulated Output
- Low Ripple and Noise
- Isolation Class II
- UL60601-1 / IEC60601-1 / EC60601-1 Medical Safety Approvals



ELECTRICAL SPECIFICATIONS

| Model No. (Single Output) | 3.3S | 5S | 7.35S | 9S | 12S | 15S | 24S |
|-----------------------------|---------------------------------|----------|----------|---------|---------|---------|---------|
| Max output wattage (W) | 9.9W | 15W | 15W | 15W | 15W | 15W | 15W |
| Output | Voltage (V.DC.) | 3.3V | 5V | 7.35V | 9V | 12V | 24V |
| | Current (mA) max | 3000 | 3000 | 2040 | 1666 | 1250 | 625 |
| | Voltage set accuracy | ±2% | ±2% | ±2% | ±2% | ±2% | ±2% |
| | Line regulation (Max..) | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| | Load regulation (0-100%) (Max.) | 1% | 1% | 1% | 1% | 1% | 1% |
| | Minimum load | 0% | 0% | 0% | 0% | 0% | 0% |
| | Efficiency (Typ) | 75% | 79% | 79% | 80% | 81% | 82% |
| | Capacitor Load (max.) | 40000 uF | 10000 uF | 4700 uF | 3000 uF | 1100 uF | 1000 uF |

| Model No. (Dual Output) | 5D | | 12D | | 15D | | |
|---------------------------|----------------------------------|---------------------|----------|---------------------|----------|---------------------|------|
| Max output wattage (W) | 15W | | 15W | | 15W | | |
| Output | Output 1 | Output 2 | Output 1 | Output 2 | Output 1 | Output 2 | |
| | Voltage (V.DC.) | +5V | -5V | +12V | -12V | +15V | -15V |
| | Current (mA) max | 1500 | 1500 | 625 | 625 | 500 | 500 |
| | Voltage set accuracy | ±2% | | ±2% | | ±2% | |
| | Line regulation (Max.) | 0.5% | | 0.5% | | 0.5% | |
| | Load regulation (10-100%) (Max.) | 1% (symmetric load) | | 1% (symmetric load) | | 1% (symmetric load) | |
| | Cross regulation | 5% | | 3% | | 3% | |
| | Minimum load | 10% | | 10% | | 10% | |
| | Efficiency (Typ) | 79% | | 82% | | 82% | |
| | Capacitor Load (max.) | ±4700 uF | | ±560 uF | | ±500 uF | |

| Model No. (Triple Output) | AMS12D | | | AMS15D | | | |
|-----------------------------|----------------------------------|--------------------|----------|---------------------|--------------------|----------|---------------------|
| Max output wattage (W) | 15W | | | 15W | | | |
| Output | Output 1 | Output 2 | Output 3 | Output 1 | Output 2 | Output 3 | |
| | Voltage (V.DC.) | 5 | +12 | -12 | 5 | +15 | -15 |
| | Current (mA) max | 2000 | 200 | 200 | 2000 | 150 | 150 |
| | Voltage set accuracy | ±2% | | ±3% | ±2% | | ±3% |
| | Line regulation (Max..) | 0.5% | | 2% | 0.5% | | 2% |
| | Load regulation (10-100%) (Max.) | 1% | | 5% (symmetric load) | 1% | | 5% (symmetric load) |
| | Cross regulation | 1% | | 5% | 1% | | 5% |
| | Minimum load | 25% | | | 25% | | |
| | Efficiency (Typ) | 78% | | | 78% | | |
| | Capacitor Load (max.) | 10000 uF / ±470 uF | | | 10000 uF / ±600 uF | | |



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| | | |
|--------------------------|---------------------------|--|
| Input | Voltage | 90-264 VAC or 120-375 VDC |
| | Frequency (Hz) | 47-440 Hz |
| | Current (Full load) | 220 mA max. (115 VAC) / 118 mA max. (230 VAC) |
| | Inrush current (<2ms) | 10 A max. (115 VAC) / 20 A max. (230 VAC) |
| | Leakage Current | 0.1 mA max. (115 VAC) / 0.2 mA max. (230 VAC) |
| | External fuse (recommend) | 2.0 A slow blow type |
| Output | Ripple & Noise | 1% of Vout |
| | Hold-up time | 20 ms min. |
| | Switching frequency | 132 kHz |
| Protection | Over current protection | Above 105% rated output power |
| | Over voltage protection | Zener diode clamp |
| | Short circuit protection | Hiccup mode, indefinite (automatic recovery) |
| | OTP | 100°C |
| Isolation | Input-Output (V.AC) | 4000V |
| Environment | Operating temperature | -25°C...+70°C (Case Temperature max. +95°C) |
| | Storage temperature | -40°C...+85°C |
| | Temperature coefficient | 0.01%/°C |
| | Humidity | 95% RH |
| | MTBF | 200,000 h~400,000 h @ 25°C |
| Physical | Dimension (L x W x H) | 2.52 x 1.79 x 0.92 Inches (64.0 x 45.6 x 23.5 mm) Tolerance ±0.5 mm |
| | Case Material | Plastic resin + Fiberglass (flammability to UL 94V-0) |
| | Weight | 120 g |
| | Cooling method | Free air convection |
| Safety & EMC | Safety Approvals | UL60601-1 / IEC60601-1 |
| | Approval | cUL / UL / CB / ANSI/AAMI ES 60601-1: 2005, 1st Edition and CAN/CSA-C22.2 No. 60601-1:08, 2nd Edition, MOPP |
| | EMI | EN 55011 class B |
| | EMC Standards | EN60601-1-2 |
| | ESD Susceptibility | EN60601-1-2 |
| | Radiated Susceptibility | EN60601-1-2 |
| | EFT / Burst | EN60601-1-2 |
| | Surge | EN60601-1-2 |
| Conducted Susceptibility | EN60601-1-2 | |

1. All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

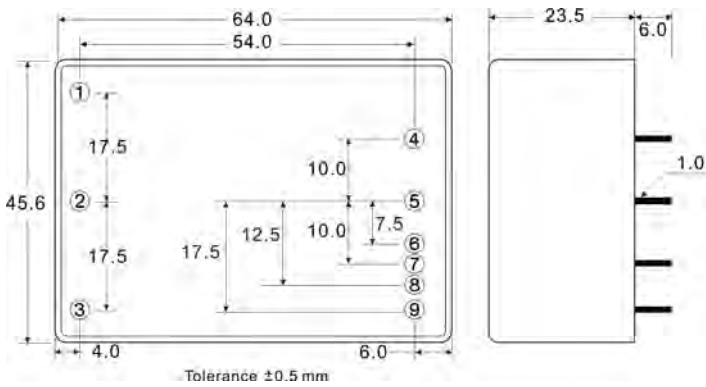
2. Ripple & Noise are measured at 20MHz of bandwidth with 0.1µF & 47µF parallel capacitor.



VP K 57 7 Gk]W]b['Dck Yf 'A cXi `Y'A YX]WU`GYf]Yg



MECHANICAL DIMENSION (Top View)

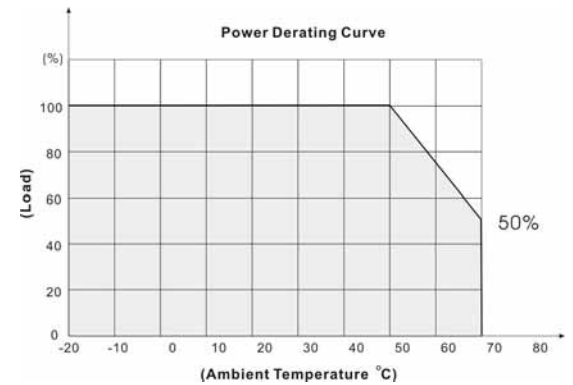
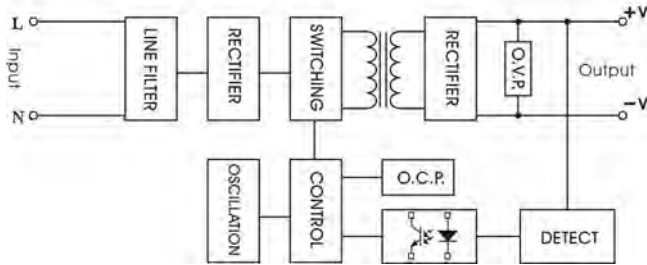


| PIN# | SINGLE | Dual | Triple |
|------|-----------|-----------|-----------|
| 1 | NO PIN | NO PIN | NO PIN |
| 2 | AC IN (L) | AC IN (L) | AC IN (L) |
| 3 | AC IN (N) | AC IN (N) | AC IN (N) |
| 4 | -DC OUT | -DC OUT | +5V RTN |
| 5 | NO PIN | COMMON | +5V OUT |
| 6 | NO PIN | NO PIN | -DC OUT |
| 7 | +DC OUT | +DC OUT | NO PIN |
| 8 | NO PIN | NO PIN | COMMON |
| 9 | NO PIN | NO PIN | +DC OUT |

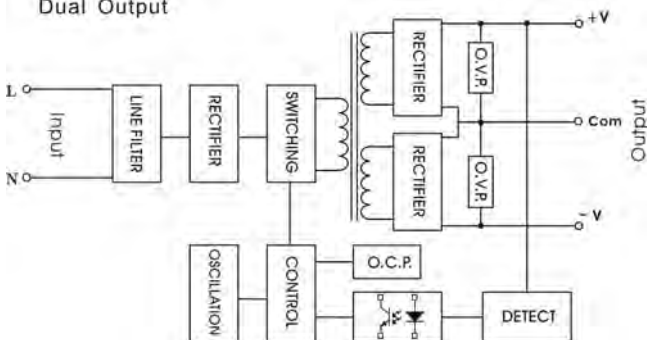
BLOCK DIAGRAM

DERATING

Single Output



Dual Output



Triple Output

