

PART NUMBER: VF-S150-XXA

DESCRIPTION: switching power supply

features

- ac input range auto-selectable
- power factor correction
- remote on/off
- power good signal
- short circuit protection
- over load protection
- over voltage protection
- over temperature protection
- providing Peak Power 600W within 500uS duty duration
- approved to UL, CUL, TUV, CE with CB scheme
- high power density: 6.25 watts cu. in.

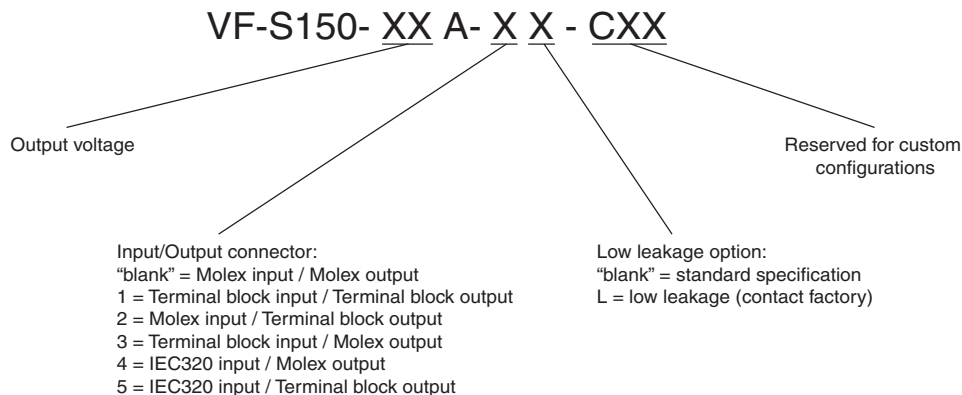


| MODEL | preset voltage | output ^{1,2} | output current | | max. power ⁵ | regulation ⁴ | ripple & noise ^{3,4} (Vpp) |
|-------------|----------------|-----------------------|----------------|--------|-------------------------|-------------------------|-------------------------------------|
| | | | convection | 16 CFM | | | |
| VF-S150-03A | 3.3V | 3 - 4 V | 20 A | 30 A | 120 W | +/- 1% | 50 mV |
| VF-S150-05A | 5V | 5 - 6 V | 20 A | 30 A | 150 W | +/- 1% | 50 mV |
| VF-S150-12A | 12V | 12 - 16 V | 8.33 A | 12.5 A | 150 W | +/- 1% | +/- 1% |
| VF-S150-18A | 18V | 17 - 23 V | 5.56 A | 8.33 A | 150 W | +/- 1% | +/- 1% |
| VF-S150-24A | 24V | 24 - 30 V | 4.17 A | 6.25 A | 150 W | +/- 1% | +/- 1% |
| VF-S150-48A | 48V | 35 - 56 V | 2.08 A | 3.13 A | 150 W | +/- 1% | +/- 1% |

notes:

- 1 Output is fully isolated.
- 2 Output voltage is measured at output power connector.
- 3 1% minimum load is required to maintain the ripple and regulation.
- 4 Ripple and noise is measured from 10 kHz to 20 MHz at output terminals with a 0.1 µF ceramic and a 22 µF electrolytic capacitor in parallel.
- 5 Maximum power is 100 W with convection cooling except for VF-S150-03A where power is 80 W max.

CUSTOM CONFIG KEY



**PART NUMBER:** VF-S150-XXA**DESCRIPTION:** switching power supply**INPUT**

| parameter | conditions/description | min | nom | max | units |
|-----------------|--|--------|-----|---------|-------|
| input frequency | | 47 | | 63 | Hz |
| input voltage | 90-132 / 180-264 auto-selectable | 90/180 | | 132/264 | VAC |
| input current | At 115 VAC | | | 4 | A |
| | At 230 VAC | | | 2 | A |
| inrush current | peak measured at 115 VAC at full load, cold start | | | 35 | A |
| | peak measured at 230 VAC at full load, cold start | | | 70 | A |
| power factor | Passive Power Correction meets EN61000-3-2 class A | | | | |

OUTPUT

| parameter | conditions/description | min | nom | max | units |
|--------------------|---|--------|-----|-----|--------|
| transient response | Output voltage returns to within 1% in less than 2.5 mS for a 50% load change. Peak transient does not exceed 5%. | | | | |
| overshoot | Turn-on and turn-off overshoot shall not exceed 5% over nominal voltage. | | | | |
| efficiency | Measured at 230 V and full load | | | | |
| | 3.3 V model: | 70% | | | |
| | 5 V model: | 75% | | | |
| | 12 V model: | 80% | | | |
| | minimum for all other models: | 83% | | | |
| turn on delay | At 120 VAC | | | 1 | second |
| hold up time | At 120 VAC and 80% of rated maximum load | 20 | | | ms |
| adjustability | Adjustable with built-in trim pot. | +/- 5% | | | |
| LED display | When green (LED1) is on the power supply is operating normally. | | | | |
| power good | Designated as PG on the CN1. This signal goes high 100-500 mS after the output reaches regulation. It goes low at least 1 mS before loss of regulation. | | | | |
| fan drive | 12 VDC/300mA for external fan | | | | |

PROTECTION CIRCUIT

| parameter | conditions/description |
|---------------------|---|
| input fuse | Built-in ac fuse. A blown fuse usually indicates permanent damage to the power supply serviceable by factory only. |
| overload | Current limiting starts at 110-140% of the rated output current in foldback mode and recovers automatically. |
| short circuit | Short circuit can be continuous. Recovers automatically upon removal of short. |
| output over-voltage | Output is protected against overvoltage. Unit shuts down and latches when voltage at output terminals exceeds 130%. AC input needs to be reset to restart the power supply. |
| over temp. | Power supply shuts down when temperature is in excess of 85 °C. Auto recovery. |

**PART NUMBER:** VF-S150-XXA**DESCRIPTION:** switching power supply**GENERAL AND SAFETY**

| parameter | conditions/description | min | nom | max | units |
|----------------------------|--|---------|----------------------|-----|-------------------|
| operating temp. | Derates linearly from 100% load at 50°C to 50% load at 70°C. | 0 | | 70 | °C |
| storage temp. | | -20 | | 85 | °C |
| operating humid. | Non-condensing | 5% | | 90% | RH |
| storage humid. | Non-condensing | 5% | | 95% | RH |
| EMI | CISPR 22/EN55022 class B, EN61000-3-2, 3, EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024 CE marked (LVD) | | | | |
| safety | UL60950(E222889), CSA C22.2 No. 60950, TUV EN60950 and CB | | | | |
| leakage Current | 240VAC | | | 1.5 | mA |
| switching frequency | | | 25K | | Hz |
| vibration | Acceleration ± 7.35 M/(SxS), on X, Y and Z Axis | 5 | | 50 | Hz |
| isolation voltage (HI-POT) | Applied for 3 seconds at 10 mA max. Primary to secondary: Primary to transformer core: Primary to chassis: | | 3000 1500 1500 | | VAC VAC VAC |
| grounding test | Allowable resistance measured when 25 A current is applied from the ground pin of the three prong plug to the farthest earthed connection point. | | | 0.1 | Ω |
| warranty | Standard warranty length | | | 2 | years |
| MTBF | According to MIL-HDBK-217 at 30 °C | 100,000 | | | hours |
| burn-in | Full load, at 45 ± 5 °C, 230 VAC. | | | 1 | hours |
| remote on/off | Designated as RMSW on the CN1, requires a low signal to inhibit output. Hiccough mode. | | | | |

MECHANICAL

| parameter | conditions/description | min | nom | max | units |
|-----------|------------------------|-----|-----|-----|--------|
| weight | | | | 400 | grams |
| enclosure | 5(L) x 3.2(W) x 1.5(H) | | | | inches |

LOGIC CONNECTOR - (CN1)

| parameter | conditions/description |
|------------------|---|
| logic | JS B7B-XH-A Suggested mating connector: JST XHP-3 or equivalent (CHYAO SHIUNN JS-2001-03) |
| pin assignments: | 1. Power good 2. Remote switch 3. RTN |

**PART NUMBER:** VF-S150-XXA**DESCRIPTION:** switching power supply**FAN DRIVER CONNECTOR - (FAN)**

| parameter | conditions/description |
|-----------|--|
| fan | Suggested mating connector: JST XHP-2 or equivalent (CHYAO SHIUNN JS-2001-02) |

OUTPUT CONNECTOR - (CN2)

| parameter | conditions/description |
|-------------------|---|
| output (option 1) | Molex Part No. 26-48-1061 or similar (6 pin) Output pin assignment, V+ (Pins 1-3), V- (Pins 4-6) Suggested mating connector: Molex Part No. 09-91-0600 or equivalent (6) |
| output (option 2) | Howder Terminal block Part No. HD-601-4P (4 pin, M3.5 Screw) 6.35 mm spacing Output pin assignment, V+ (Pins 1-2), V- (Pins 3-4) Suggested mating connector: Molex 19198-0045 or similar |

INPUT CONNECTOR - (CN3)

| parameter | conditions/description |
|---------------------|--|
| AC input (option 1) | Molex Part No. 26-48-1051 or similar (5 pin, 3 used). Suggested mating plug: Molex Part No. 09-91-0500 or equivalent (5 pin, 3 used) |
| AC input (option 2) | Howder Terminal block Part No. HD-601-3P (3 pin, M3.5 Screw) 6.35 mm spacing Suggested mating connector: Molex 19198-0045 or similar |