



Features

- 110 W fan-cooled rating
- Small 5 x 3 x 1.07 inches form factor
- High efficiency > 82%
- Low conducted and radiated noise
- EN61000–3–2 Class A harmonics
- Cover kit accessory available

Electrical Specifications

|                          |                                                                                                |                         |
|--------------------------|------------------------------------------------------------------------------------------------|-------------------------|
| AC Input                 | 90–264 V, Universal                                                                            |                         |
| Input Frequency          | 47–63 Hz                                                                                       |                         |
| Input Current            | 120 VAC: 2.4 A max.                                                                            | 230 VAC: 1.2 A max.     |
| Inrush Current           | 120 VAC: 35 A max.                                                                             | 230 VAC: 65 A max.      |
| Leakage Current          | 120 VAC: < 500 $\mu$ A                                                                         | 230 VAC: < 1000 $\mu$ A |
| Efficiency               | 120 VAC: 80% typical                                                                           | 230 VAC: 82% typical    |
| Hold-up Time             | 120 VAC: 15 ms                                                                                 | 230 VAC: 22 ms          |
| Output Power             | 80 to 110 W                                                                                    |                         |
| Line Regulation          | +/-0.3%                                                                                        |                         |
| Load Regulation          | V1: +/-1%, V2: +/-5%, V3 & V4: +/-7%                                                           |                         |
| Transient Response       | < 10%, 50% to 100% load change, 50/60 Hz, 50% duty cycle, 0.1 A/ $\mu$ s, recovery time < 5 ms |                         |
| Rise Time                | < 40 ms                                                                                        |                         |
| Set Point Tolerance      | V1: +/-3%, V2: +/-5%, V3 & V4: +/-7%                                                           |                         |
| Over Current Protection  | 110 to 160%                                                                                    |                         |
| Over Voltage Protection  | 6.2 V +/-0.4 V for V1 with 5 V; 4.1 V +/-0.2 V for V1 with 3.3 V                               |                         |
| Short Circuit Protection | Short term with autorecovery < 6 s                                                             |                         |
| Switching Frequency      | Boost converter: 45 kHz typical<br>Resonant converter: 45 kHz typical                          |                         |
| Operating Temperature    | 0 to 70°C, refer derating curve                                                                |                         |
| Storage Temperature      | –40 to +70°C                                                                                   |                         |
| Relative Humidity        | 95% Rh, noncondensing                                                                          |                         |
| Altitude                 | Operating: 10,000 ft.; Nonoperating: 40,000 ft.                                                |                         |
| MTBF                     | 1.97m Hours, Telcordia SR332 Issue-3                                                           |                         |
| Isolation Voltage        | Min. 4242 VDC between input and output                                                         |                         |
| Cooling                  | Convection: 80 W; 150 LFM: 110 W                                                               |                         |

| Model Number                         | Voltage                                       | Max. Load <sup>1</sup><br>(Convection)     | Max. Load <sup>1</sup><br>(150 LFM)         | Min. Load                                 | Ripple <sup>2</sup>      |
|--------------------------------------|-----------------------------------------------|--------------------------------------------|---------------------------------------------|-------------------------------------------|--------------------------|
| LFVLT110-1300                        | V1=5.1 V                                      | 12.0 A                                     | 18.0 A                                      | 0.1 A                                     | 1%                       |
| LFVLT110-1301                        | V1=12 V                                       | 6.8 A                                      | 9.2 A                                       | 0.4 A                                     | 1%                       |
| LFVLT110-1302                        | V1=15 V                                       | 5.5 A                                      | 7.3 A                                       | 0.4 A                                     | 1%                       |
| LFVLT110-1303                        | V1=24 V                                       | 3.33 A                                     | 4.6 A                                       | 0.1 A                                     | 1%                       |
| LFVLT110-1304                        | V1=48 V                                       | 1.7 A                                      | 2.3 A                                       | 0.2 A                                     | 1%                       |
| LFVLT110-4300                        | V1=5.1 V, V2=12.4 V,<br>V3=-5.1 V, V4=-12.5 V | V1=10.0 A, V2=3.0 A,<br>V3=0.8 A, V4=0.8 A | V1=15.0 A, V2=4.1 A,<br>V3=1.1 A, V4=1.1 A  | V1=1.0 A, V2=0.1 A,<br>V3=0.0 A, V4=0.0 A | 1%                       |
| LFVLT110-4301                        | V1=5.1 V, V2=23.5 V,<br>V3=12.5 V, V4=-12.5 V | V1=10.0 A, V2=2.0 A,<br>V3=0.8 A, V4=0.8 A | V1=15.0 A, V2=2.75 A,<br>V3=1.1 A, V4=1.1 A | V1=1.0 A, V2=0.1 A,<br>V3=0.0 A, V4=0.0 A | 1%                       |
| LFVLT110-4302                        | V1=5.1 V, V2=16 V,<br>V3=-5.1 V, V4=-16 V     | V1=10.0 A, V2=3.0 A,<br>V3=0.8 A, V4=0.8 A | V1=15.0 A, V2=4.1 A,<br>V3=1.1 A, V4=1.1 A  | V1=1.0 A, V2=0.1 A,<br>V3=0.0 A, V4=0.0 A | 1%                       |
| LFVLT110-4303                        | V1=5.1 V, V2=12.4 V,<br>V3=24 V, V4=-12.5 V   | V1=10.0 A, V2=3.0 A,<br>V3=0.8 A, V4=0.8 A | V1=15.0 A, V2=4.1 A,<br>V3=1.1 A, V4=1.1 A  | V1=1.0 A, V2=0.1 A,<br>V3=0.0 A, V4=0.0 A | 1%                       |
| LFVLT110-4304                        | V1=3.3 V, V2=5.1 V,<br>V3=12.5 V, V4=-12.5 V  | V1=10.0 A, V2=3.0 A,<br>V3=0.8 A, V4=0.8 A | V1=15.0 A, V2=4.1 A,<br>V3=1.1 A, V4=1.1 A  | V1=1.0 A, V2=0.1 A,<br>V3=0.0 A, V4=0.0 A | V1=1.5%<br>V2, V3, V4=1% |
| LFVLT80-CK metal cover kit accessory |                                               |                                            |                                             |                                           |                          |

| Connectors      |                |                 |
|-----------------|----------------|-----------------|
| J1              | Pin 1          | AC NEUTRAL      |
|                 | Pin 2          | AC LINE         |
| Spade Connector |                | EARTH           |
| J2              | Pin 1, 2, 3, 4 | V1              |
|                 | Pin 5, 6, 7, 8 | RTN             |
|                 | Pin 9, 10      | V2              |
|                 | Pin 11         | V3              |
| J3              | Pin 12         | V4              |
|                 | Pin 1          | RTN             |
|                 | Pin 2          | POWER FAIL/GOOD |

## Notes

1. Maximum current per output channel. Do not exceed total output power rating.
2. Ripple is peak to peak with 20 MHz bandwidth and 10  $\mu$ F (Electrolytic capacitor) in parallel with a 0.1  $\mu$ F capacitor at rated line voltage and load ranges.
3. Power fail and power good signal on quad output models only.
4. Specifications are for nominal input voltage, 25°C and max. load unless otherwise stated.
5. Derate output power linearly to 80% from 90 VAC to 80 VAC input.



| Mechanical Specifications           |                                                                                                                                                                                |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AC Input Connector (J1)             | Molex: 26-60-4030 or equivalent<br>Mating: 09-50-3031; Pins: 08-50-0106                                                                                                        |
| EARTH                               | Molex: 19705-4301<br>Mating: 190030001                                                                                                                                         |
| DC Output Connector (J2)            | Tyco: 1-640445-2 or equivalent<br>Mating: 1-647402-2; Pins: 3-647409-1                                                                                                         |
| Signal Connector (J3)               | Molex: 22-23-2021 or equivalent<br>Mating: 22-01-2021                                                                                                                          |
| Dimensions                          | 5.0 x 3.04 x 1.07 inches<br>(127.0 x 77.22 x 27.18 mm)                                                                                                                         |
| Weight                              | 250 g                                                                                                                                                                          |
| EMC                                 |                                                                                                                                                                                |
| CE Mark                             | Complies with LVD Directive                                                                                                                                                    |
| Conducted Emissions                 | EN55022-B, CISPR22-B, FCC PART15-B                                                                                                                                             |
| Static Discharge                    | EN61000-4-2, Level-3                                                                                                                                                           |
| RF Field Susceptibility             | EN61000-4-3, Level-3                                                                                                                                                           |
| Fast Transients/Bursts              | EN61000-4-4, Level-3                                                                                                                                                           |
| Radiated Emissions                  | EN55022-B, CISPR22-B, FCC PART15-B<br>To be controlled in end system                                                                                                           |
| Surge Susceptibility                | EN61000-4-5, Level-3                                                                                                                                                           |
| Harmonic Current                    | EN61000-3-2, Class A                                                                                                                                                           |
| Safety                              |                                                                                                                                                                                |
| Safety Standard(s)                  | IEC60950-1 (ed.2), EN60950-1, UL60950-1 (2nd Edition),<br>CSA C22.2 No. 60950-1 (2nd Edition), Class 1 SELV                                                                    |
| Approval Agency                     | Nemko, UL, C-UL                                                                                                                                                                |
| Safety File Number(s)               | Nemko: P09210934<br>UL: E150565                                                                                                                                                |
| Signal                              |                                                                                                                                                                                |
| Power Fail/Good Signal <sup>3</sup> | Signal goes high after a delay of 100 ms once main output is within regulation band.<br>Signal goes low 1 ms advance before output goes out of regulation due to mains failure |

