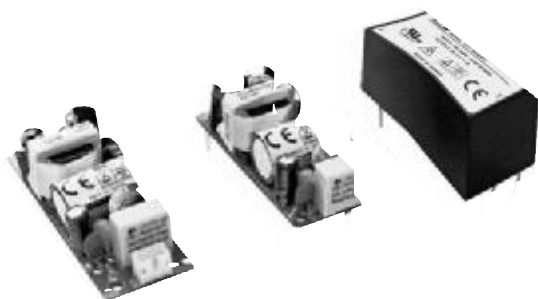


10 Watts

ECL10 Series



- Ultra Compact Size
- Low Cost
- Single Outputs from 3.3 to 48 V
- PCB Mount & Open Frame
- Encapsulated PCB Mount
- Class II
- Peak Load Capability

Specification

Input

| | |
|-----------------------|-------------------------------------|
| Input Voltage | • 85-264 VAC (120-370 VDC) |
| Input Frequency | • 47-63 Hz |
| Input Current | • 0.20 A rms at 230 VAC |
| Inrush Current | • 20 A at 115 VAC, 40 A at 230 VAC, |
| Earth Leakage Current | • Class II construction no earth |
| Input Protection | • Internal 1 A fuse |

Output

| | |
|--------------------------|---|
| Output Voltage | • See tables |
| Output Voltage Trim | • $\pm 5\%$ (not encapsulated units) |
| Initial Set Accuracy | • $\pm 1\%$ |
| Minimum Load | • No minimum load required |
| Start Up Delay | • 2 s max |
| Start Up Rise Time | • 14 ms max |
| Hold Up Time | • 16 ms typical at full load & 115 VAC |
| Line Regulation | • $\pm 0.5\%$ max |
| Load Regulation | • $\pm 1\%$ max |
| Transient Response | • 4% max deviation, recovery to within 1% in 500 μ s for a 25% load change |
| Ripple & Noise | • 3.3-5 V versions: 50 mV pk-pk, 12-15 V versions: 120 mV pk-pk, 24-48 V versions: 200 mV pk-pk, 20 MHz BW |
| Overvoltage Protection | • 115-135% Vnom, recycle input to reset |
| Overload Protection | • 120-150% |
| Short Circuit Protection | • Trip and restart (Hiccup mode) |
| Temperature Coefficient | • 0.05%/°C |

General

| | |
|---------------------|---|
| Efficiency | • See tables |
| Isolation | • 3000 VAC Input to Output |
| Switching Frequency | • 70 kHz typical |
| Power Density | • 5.5 W/In ³ (PCB mount version) |
| MTBF | • >450 kHrs per MIL-HDBK-217F |

Environmental

| | |
|-----------------------|--|
| Operating Temperature | • -20 °C to +70 °C, derate linearly from 100% at +50 °C to 50% at +70 °C |
| Cooling | • Convection-cooled |
| Operating Humidity | • 95% RH, non-condensing |
| Storage Temperature | • -40 °C to +85 °C |
| Operating Altitude | • 3000 m |
| Vibration | • 2 g, 10 Hz to 500 kHz, 10 mins/cycle, 60 mins each cycle |

EMC & Safety

| | |
|----------------------|---|
| Emissions | • EN55022, level B conducted & radiated |
| Harmonic Currents | • EN61000-3-2, EN61000-3-3 |
| ESD Immunity | • EN61000-4-2, level 3 Perf Criteria A |
| Radiated Immunity | • EN61000-4-3, 10 V/m 80% mod Perf Criteria A |
| EFT/Burst | • EN61000-4-4, level 3 Perf Criteria A |
| Surge | • EN61000-4-5, level 3 Perf Criteria A |
| Conducted Immunity | • EN61000-4-6, 10 Vrms Perf Criteria A |
| Magnetic Fields | • EN61000-4-8, 10 A/m Perf Criteria A |
| Dips & Interruptions | • EN61000-4-11, 70% U _r for 10 ms, 40% U _r for 100 ms, <5% U _r for 5000 ms Perf Criteria A, B, B |
| Safety Approvals | • EN60950, UL60950, CSA22.2 No. 234 per cUL |

Models and Ratings

| Output Power | Output Voltage | Output Current | | Efficiency | Model Number ⁽²⁾ |
|--------------|----------------|----------------|---------------------|------------|-----------------------------|
| | | Nominal | Peak ⁽¹⁾ | | |
| 8.6 W | 3.3 VDC | 2.60 A | 3.38 A | 72% | ECL10US03 [†] |
| 10 W | 5.0 VDC | 2.00 A | 2.60 A | 75% | ECL10US05 [†] |
| 10 W | 9.0 VDC | 1.10 A | 1.43 A | 78% | ECL10US09 [†] |
| 10 W | 12.0 VDC | 0.83 A | 1.08 A | 78% | ECL10US12 [†] |
| 10 W | 15.0 VDC | 0.67 A | 0.87 A | 80% | ECL10US15 [†] |
| 10 W | 24.0 VDC | 0.42 A | 0.55 A | 82% | ECL10US24 [†] |
| 10 W | 48.0 VDC | 0.21 A | 0.27 A | 82% | ECL10US48 [†] |

Notes

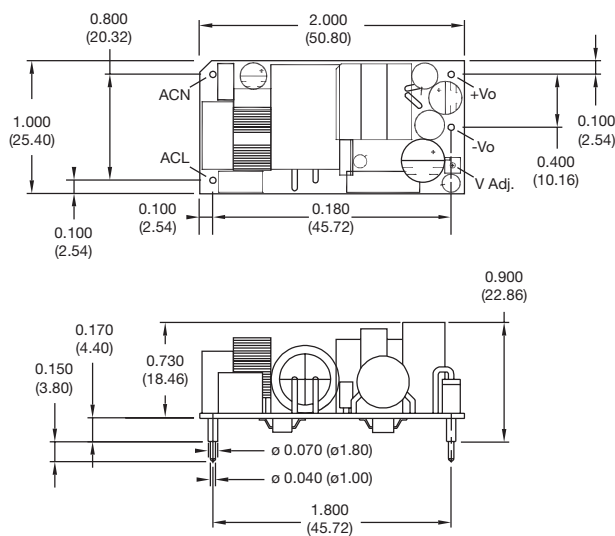
1. Peak load lasting <30 s with a maximum duty cycle of 10%, average output power not to exceed nominal.
2. Add suffix to model number to define type: add '-P' for PCB mount, add '-T' for chassis mount, add '-E' for encapsulated.

[†] Available from Farnell. See pages 204-206.

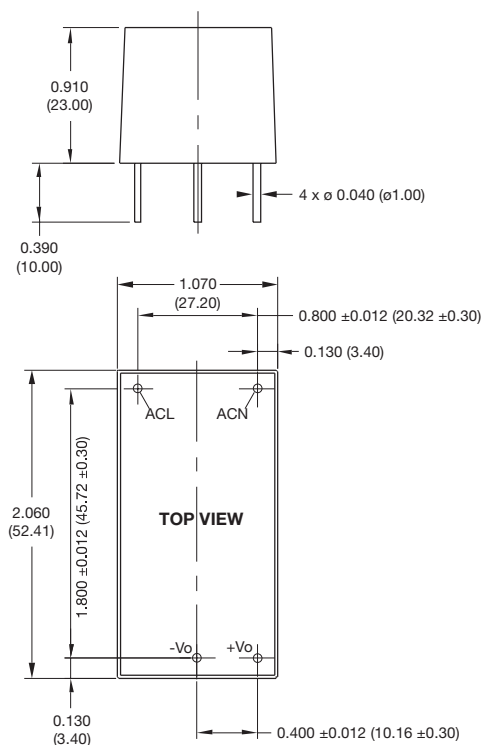
[^] Available from Newark. See pages 207-208.

Mechanical Details

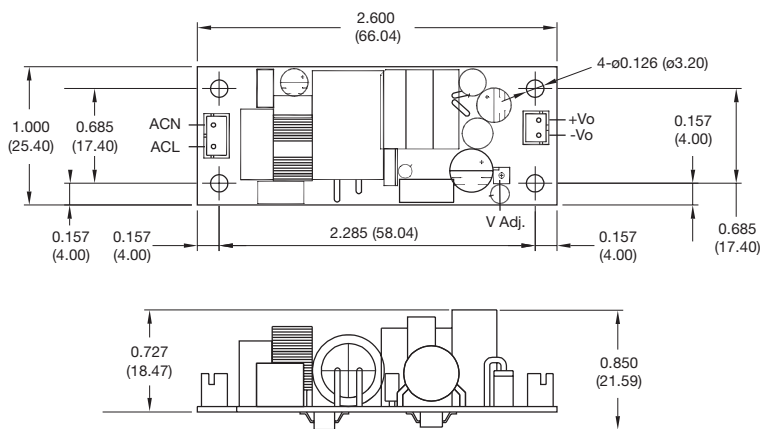
Open Frame - PCB Mount (-P)



Encapsulated (-E)



Open Frame - Chassis Mount (-T)



Notes

1. Dimensions in inches (mm).
2. Tolerances: .xxx ±0.2 (.xx ±0.5).

Mating Connectors (Chassis mount only)

Input Connector: JST PHR-3
 Output Connector: JST PHR-2
 Crimps: SPH-002T-P0.5S
 Cable harness with 300 mm wire available, order part no. ECL10 LOOM KIT