

## ECP20 Series



- Low Profile, 0.73"
- Class II Construction
- PCB Mounting
- Single Outputs from 3.3 to 48 V
- Dual Outputs from 12 to 24 V
- <0.3 W No Load Input Power
- Peak Load Capability

## Specification

---

### Input

Input Voltage	• 85-264 VAC
Input Frequency	• 47-63 Hz
Input Current	• 0.5 A max at 115 VAC
Inrush Current	• 40 A max at 230 VAC
Power Factor	• Conforms to EN61000-3-2, Class A
No Load Input Power	• <0.3 W

### Output

Output Voltage	• See table
Initial Set Accuracy	• $\pm 1\%$ at 60% load
Minimum Load	• No minimum load required
Start Up Delay	• 1.3 s max
Start Up Rise Time	• 15 ms typical
Hold Up Time	• 10 ms min at full load & 115 VAC
Line Regulation	• $\pm 0.5\%$ max
Load Regulation	• $\pm 1.0\%$ max
Transient Response	• 4% max deviation, recovering to less than 1% within 500 $\mu$ s for 50% step load change at 1 A/ $\mu$ s
Ripple & Noise	• 3.3 & 5 V versions: 50 mV, 1% for others measured with 20 MHz BW
Overvoltage Protection	• 110-140% of nominal output voltage
Overload Protection	• 150-180% of full load current
Short Circuit Protection	• Trip and restart (Hiccup mode)
Temperature Coefficient	• 0.02%/ $^{\circ}$ C max

### General

Efficiency	• See tables
Isolation	• 3000 VAC Input to Output
Switching Frequency	• 65 kHz typical

### Environmental

Operating Temperature	• 0 $^{\circ}$ C to +70 $^{\circ}$ C, derate from 100% load at 50 $^{\circ}$ C to 50% load at 70 $^{\circ}$ C
Cooling	• Natural convection
Operating Humidity	• 5% to 95% RH, non condensing
Storage Temperature	• -40 $^{\circ}$ C to +85 $^{\circ}$ C
Shock	• 30g, half sine, 6 axis
Vibration	• 5-50 Hz, 2g 15 mins/sweep, 30 mins for each of 3 axes

### EMC & Safety

Emissions	• EN55022, level B conducted & radiated
Harmonic Currents	• EN61000-3-2, class A
Voltage Flicker	• EN61000-3-3
ESD Immunity	• EN61000-4-2, $\pm 4$ kV indirect contact, Perf Criteria A
Radiated Immunity	• EN61000-4-3, 3 V/m, Perf Criteria A
EFT / Burst	• EN61000-4-4, level 2 Perf Criteria A
Surge	• EN61000-4-5, level 2 Perf Criteria A
Conducted Immunity	• EN61000-4-6, 3 V Perf Criteria A
Dips & Interruptions	• EN61000-4-11, 70% $U_T$ 10ms, 40% $U_T$ 100ms, <5% $U_T$ 5000ms, Perf Criteria A, B, B
Safety Approvals	• EN60950, cUL60950, IEC60950-1

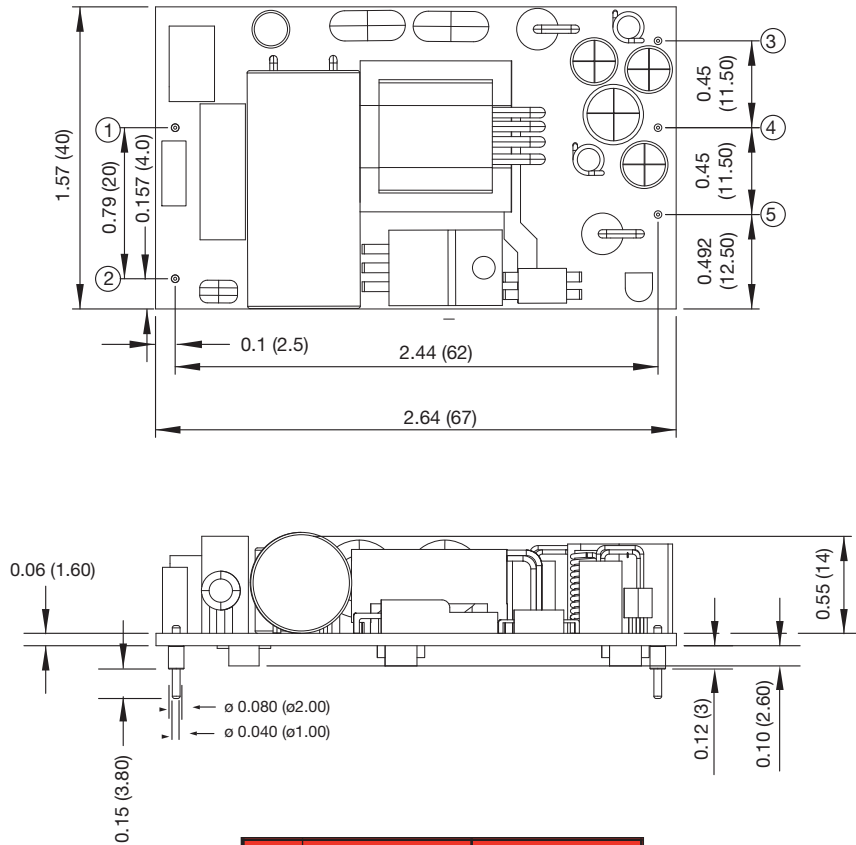
**Models and Ratings**

Output Power	Output 1			Output 2			Efficiency	Model Number <sup>(2)</sup>
	Voltage	Current	Peak <sup>(1)</sup>	Voltage	Current	Peak <sup>(1)</sup>		
13.2 W	3.3 VDC	4.0 A	5.20 A				75%	ECP20US03
20 W	5.0 VDC	4.0 A	5.20 A				80%	ECP20US05
20 W	9.0 VDC	2.23 A	2.90 A				82%	ECP20US09
20 W	12.0 VDC	1.67 A	2.17 A				84%	ECP20US12
20 W	15.0 VDC	1.34 A	1.74 A				84%	ECP20US15
20 W	24.0 VDC	0.84 A	1.09 A				85%	ECP20US24
20 W	30.0 VDC	0.67 A	0.87 A				86%	ECP20US30
20 W	48.0 VDC	0.42 A	0.55 A				87%	ECP20US48
20 W	+12.0 VDC	0.84 A	1.09 A	-12.0 VDC	0.84 A	1.09 A	83%	ECP20UD12
20 W	+15.0 VDC	0.67 A	0.87 A	-15.0 VDC	0.67 A	0.97 A	84%	ECP20UD15
20 W	+24.0 VDC	0.42 A	0.55 A	-24.0 VDC	0.42 A	0.55 A	84%	ECP20UD24

**Notes**

1. Peak load lasting <30 s with a maximum duty cycle of 10%, average output power not to exceed nominal.

**Mechanical Details**



Pin	ECP20US	ECP20UD
1	Line	Line
2	Neutral	Neutral
3	Output -VE	Output -VE
4	Not Connected	Common
5	Output +VE	Output +VE

**Notes**

1. All measurements are in inches (mm).  
 2. Weight: 40g approx.