



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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ECE Series



GREEN XP POWER

- Ultra Compact Size
- Single Outputs from 3.3 to 48 V
- Encapsulated
- PCB & Chassis Mount Versions
- <0.3 W No Load Input Power
- Peak Load Capability
- 3 Year Warranty

Specification

Input

Input Voltage	• 85-264 VAC (120-370 VDC) derate load from 100% at 90 VAC to 90% at 85 VAC
Input Frequency	• 47-63 Hz
Input Current	• ECE20: 0.3 A rms at 230 VAC ECE40: 0.5 A rms at 230 VAC
Inrush Current	• 20 A at 115 VAC, 40 A at 230 VAC, cold start at 25 °C
Power Factor	• EN61000-3-2 Class A
Earth Leakage Current	• Class II construction no earth
No Load Input Power	• <0.3 W
Input Protection	• ECE20: Internal T1 A/250 VAC fuse ECE40: Internal T2 A/250 VAC fuse

Output

Output Voltage	• See tables
Initial Set Accuracy	• $\pm 1\%$
Minimum Load	• No minimum load required
Start Up Delay	• 2 s max
Start Up Rise Time	• 16 ms max
Hold Up Time	• 8 ms minimum at full load & 115 VAC
Line Regulation	• $\pm 0.5\%$ max
Load Regulation	• $\pm 1\%$ max, $\pm 2\%$ max for ECE40US03/05-S
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: 60 mV pk-pk, 3.3-5 V 'ECE40-S' versions: 75 mV pk-pk (see note 5), all other models 1% pk-pk max 20 MHz bandwidth
Overvoltage Protection	• 115-140% Vnom, 195-216% Vnom ECE20US03 / ECE40US03
Overload Protection	• 110-180%
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	• ECE20: 9.97 W/In ³ ECE40: 7.82 W/In ³
MTBF	• >450 kHrs to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	• -25 °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 Hz, 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, installation Class 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, 30% for 10 ms, 60% for 100 ms, 100% for 5000 ms Perf Criteria A, B, B
Safety Approvals	• EN60950-1, UL60950-1, CSA22.2 No. 234 per cUL

Models and Ratings

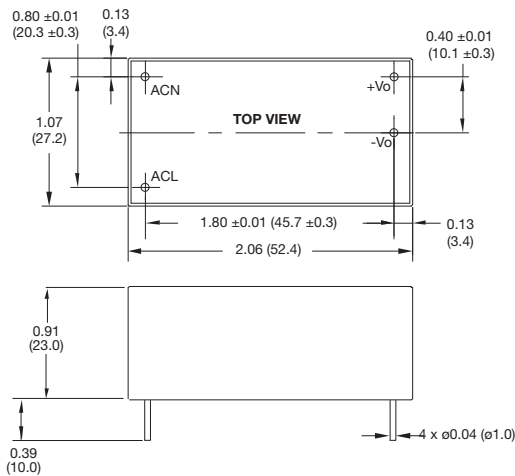
Output Power	Output Voltage	Output Current		Efficiency ⁽⁴⁾	Model Number
		Nominal	Peak ⁽¹⁾		
15.0 W	3.3 VDC	4.55 A	5.85 A	73%	ECE20US03
20.0 W	5.0 VDC	4.00 A	5.20 A	77%	ECE20US05
20.0 W	9.0 VDC	2.22 A	2.89 A	83%	ECE20US09
20.0 W	12.0 VDC	1.67 A	2.17 A	82%	ECE20US12
20.0 W	15.0 VDC	1.33 A	1.73 A	83%	ECE20US15
20.0 W	24.0 VDC	0.83 A	1.08 A	82%	ECE20US24
20.0 W	48.0 VDC	0.42 A	0.55 A	86%	ECE20US48
33.0 W	3.3 VDC	10.00 A	13.00 A	73%	ECE40US03 ⁽²⁾⁽³⁾
40.0 W	5.0 VDC	8.00 A	10.40 A	77%	ECE40US05 ⁽²⁾⁽³⁾
40.0 W	9.0 VDC	4.44 A	5.77 A	80%	ECE40US09 ⁽²⁾⁽³⁾
40.0 W	12.0 VDC	3.33 A	4.33 A	84%	ECE40US12 ⁽²⁾⁽³⁾
40.0 W	15.0 VDC	2.67 A	3.47 A	84%	ECE40US15 ⁽²⁾⁽³⁾
40.0 W	24.0 VDC	1.67 A	2.17 A	85%	ECE40US24 ⁽²⁾⁽³⁾
40.0 W	48.0 VDC	0.83 A	1.08 A	86%	ECE40US48 ⁽²⁾⁽³⁾

Notes

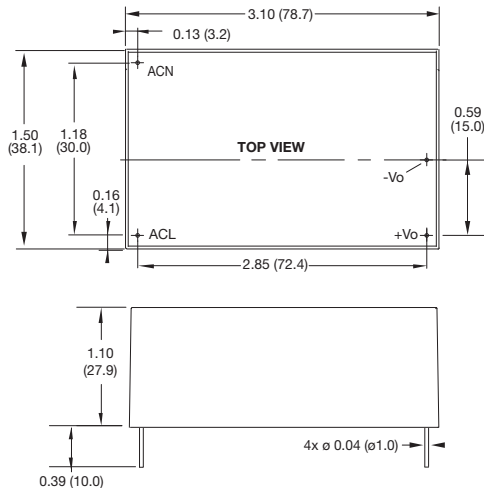
1. Peak load lasting <30 s with a maximum duty cycle of 10%, average output power not to exceed nominal power.
2. Add suffix -S to model number to denote chassis mount with screw terminal type, e.g. ECE40US12-S. Only available with ECE40 models.
3. A screw terminal versions (-S) is available with DIN Clip attached. Add suffix 'D', e.g. ECE40US24-SD. DIN Rail mounting clip is available as a separate item, order code ECL25/30 DIN CLIP.
4. Average of efficiencies measured at 25%, 50%, 75% & 100% load with 230 VAC input.
5. 3.3 & 5 V ECE40-S versions meet 75 mV pk-pk with 20 MHz bandwidth and 0.1 μF capacitor across output terminals.

Mechanical Details

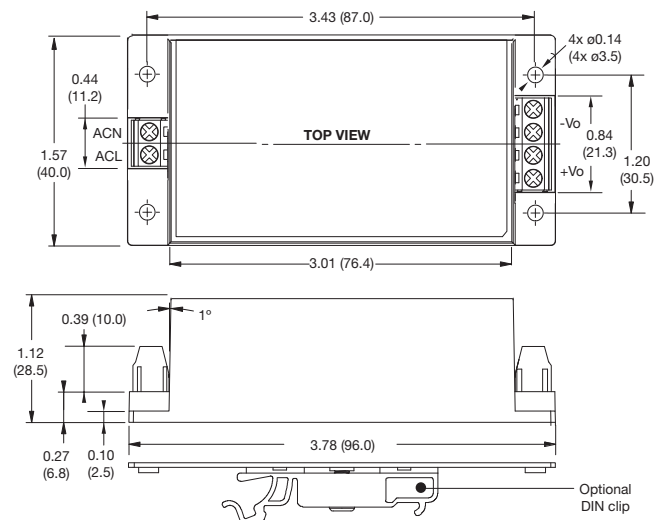
ECE20



ECE40



ECE40 Screw Terminal (-S)



Notes

1. All dimensions in inches (mm).
2. Weight: ECE20: 0.13 lbs (60 g)
 ECE40: 0.33 lbs (150 g)
 ECE40 Optional Screw Terminal: 0.37 lbs (170 g)
3. Tolerances: x.xx = ± 0.02 (x.x = ± 0.5), x.xxx = ± 0.01 (x.xx = ± 0.25)