CUI INC
a bel group

SERIES: TJ-100 | DESCRIPTION: AC-DC POWER SUPPLY

FEATURES

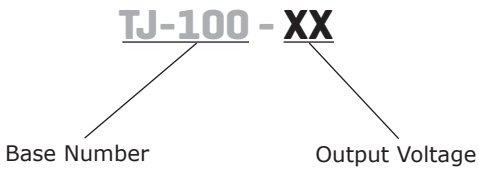
- 100 W continuous output power
- universal input (90~264 Vac, 120~370 Vdc)
- -40 ~ 90 °C operating range with derating
- extended peak power rating
- optional heatsink or baseplate cooling
- output short circuit/over voltage/current protection/temperature
- input under voltage protection
- 17 mm low profile PCB through-hole package
- UL/EN/IEC 62368-1 certified
- CISPR32/EN55032 Class B



MODEL	output voltage (Vdc)	output current max (A)	output power[1] max (W)	ripple and noise[2] max (mVp-p)	efficiency[3] typ (%)
TJ-100-12	12	8.4	100	120	93.5
TJ-100-24	24	4.2	100	150	94.5
TJ-100-28	28	3.6	100	240	94.5
TJ-100-36	36	2.8	100	280	94.5
TJ-100-48	48	2.1	100	300	94.5

Notes: 1. Ripple & noise are measured at 20 MHz BW with 0.1 µF ceramic capacitor and a 10 µF electrolytic capacitors.
2. At 230 Vac, full load, 25°C.

PART NUMBER KEY



INPUT

parameter	conditions/description	min	typ	max	units
voltage		90 120		264 370	Vac Vdc
frequency		47		63	Hz
input current	at 100 Vac, full load			1.5	A
inrush current	at 240 Vac, cold start		8.5		A
leakage current	earth touch			0.25 0.1	mA mA
power factor	at 230 Vac /50 Hz, full load	0.91			
under voltage protection		55	65	75	Vac
no load power consumption				0.5	W

OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	at 115 Vac and 230 Vac input, full load, 25 °C 12 Vdc output model 24 Vdc output model 28 Vdc output model 38 Vdc output model 48 Vdc output model			 8,400 4,200 3,600 2,800 2,100	 µF µF µF µF µF
line regulation	high line to low line			±0.5	%
load regulation	10% load to full load			±0.5	%
initial set point accuracy	at full load		±1		%
initial set point	at 90 Vac ~ 264 Vac input, full load, 25 °C 12 Vdc output model 24 Vdc output model 28 Vdc output model 38 Vdc output model 48 Vdc output model	 11.88 23.76 27.72 35.64 47.52	 12 24 28 36 48	 12.12 24.24 28.28 36.36 48.48	 Vdc Vdc Vdc Vdc Vdc
operating current range	at 90 Vac ~ 264 Vac input, see derating curve 12 Vdc output model 24 Vdc output model 28 Vdc output model 38 Vdc output model 48 Vdc output model			 8.4 4.2 3.6 2.8 2.1	 A A A A A
hold-up time	at 115 Vac, full load 28 Vdc output model all other output models	 20 30	 30 40		 ms ms
start-up delay	at 90 Vac ~ 264 Vac input		1		s
switching frequency			110		kHz
temperature coefficient				±0.02	%/°C
peak power[3]	less than 5 seconds duration, 10% maximum duty cycle		120		%

Notes: 3. If 120% of max power is supplied for 5 seconds, then at least 45 seconds of 75% of max power or less must be supplied.

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	latch off, auto recovery 12 Vdc output model 24 & 28 Vdc output model 38 Vdc output model 48 Vdc output model			 16 35 50 63	 Vdc Vdc Vdc Vdc
over current protection	hiccup, auto recovery	120	135	150	%
short circuit protection	auto recovery				
over temperature protection	auto recovery				

SAFETY & COMPLIANCE

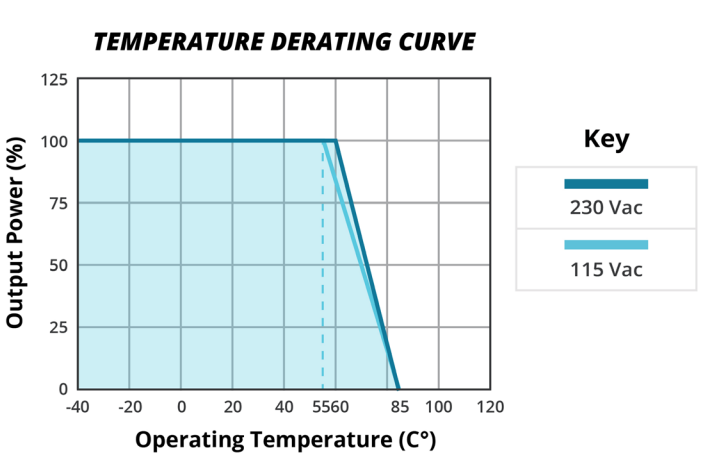
parameter	conditions/description	min	typ	max	units
isolation voltage	input to output for 1 minute input to ground for 1 minute output to ground for 1 minute			4,000 1,800 1,800	Vac Vac Vac
safety approvals[4]	certified to 62368-1: IEC, EN, UL				
EMI/EMC	EN 55032: 2015+A11: 2020, EN 61000-6-3 2007+A1: 2011+AC: 2012, Class B EN 61000-6-4: 2019, 47 CFR FCC Part 15 Subpart B, EN 61204-3: 2018, EN 61000-3-2: 2019, EN 61000-3-3: 2013+A1: 2019				
conducted emissions	EN 55032: 2015+A11: 2020, EN 61000-6-3 2007+A1: 2011+AC: 2012, Class B EN 61000-6-4: 2019, 47 CFR FCC Part 15 Subpart B, EN 61204-3: 2018				
radiated emissions	EN 55032: 2015+A11: 2020, EN 61000-6-3 2007+A1: 2011+AC: 2012, Class B EN 61000-6-4: 2019, 47 CFR FCC Part 15 Subpart B, EN 61204-3: 2018				
ESD	IEC 61000-4-2: 2008, Air Discharge: ±8KV, Contact Discharge: ±4KV, perf. Criteria A				
radiated immunity	IEC 61000-4-3: 2020, perf. Criteria A				
EFT/Burst	IEC 61000-4-4: 2012, ±1kV, ±2kV, perf. Criteria A				
surge	IEC 61000-4-5: 2014+A1: 2017, L-N: ±0.5kV, ±1kV, L-E(ground): ±0.5kV, ±1kv, ±2kV, perf. Criteria A				
conducted immunity	IEC 61000-4-6: 2013+COR1: 2015, perf. Criteria A				
class	class I				
MTBF	as per MIL-HDBK-217F at 25 °C, full load		600,000		hours

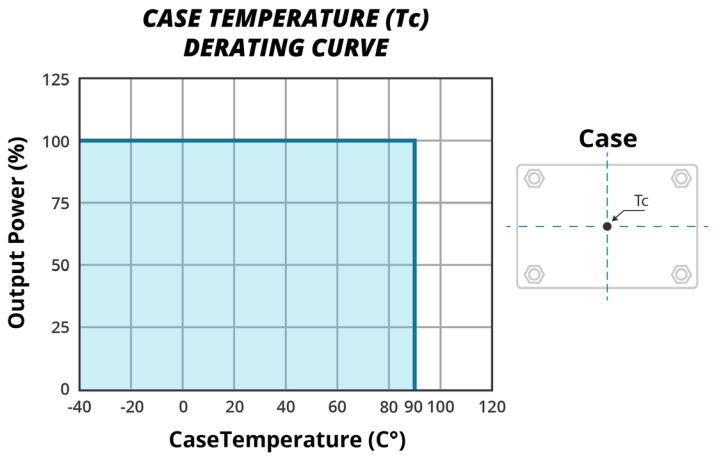
Notes: 4. 62368 certification applies only when ac input is applied.

ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature	see derating curves	-40		85	°C
operating case temperature	at the centre of base plate	-40		90	°C
storage temperature		-40		100	°C
operating humidity	non-condensing	-		93	%
operating altitude				5,000	m
shock	10 ms along each of the X, Y, and Z axes 3 times		75		g
vibration	15 ~ 2,000Hz for 1 hour along each of the X, Y, and Z axes		4		g

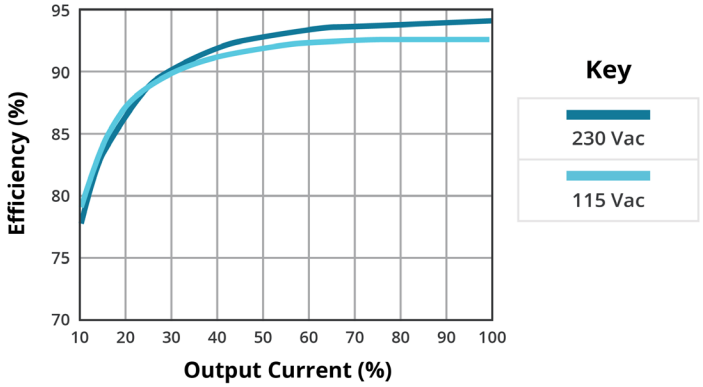
DERATING CURVES



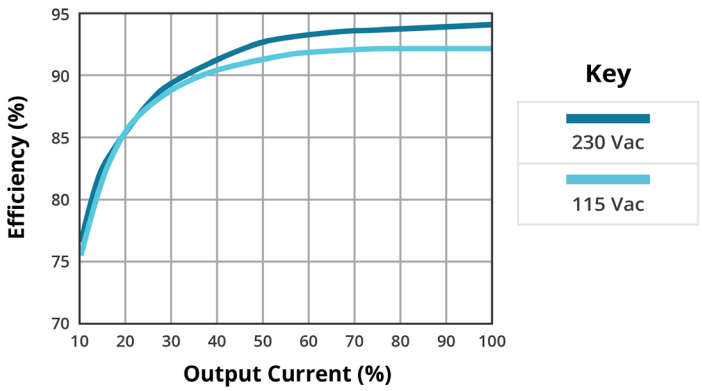


EFFICIENCY CURVES

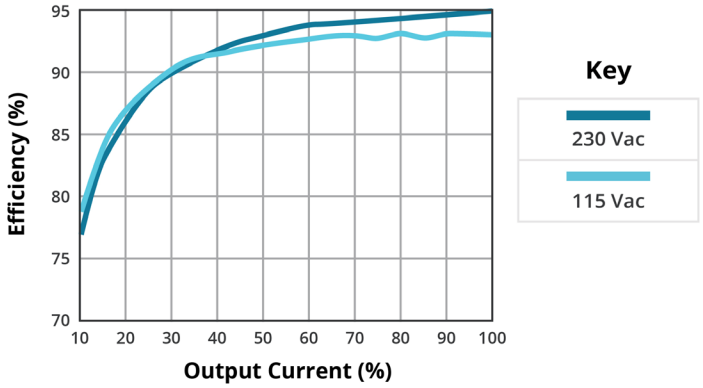
EFFICIENCY VS OUTPUT LOAD
TJ-100-12



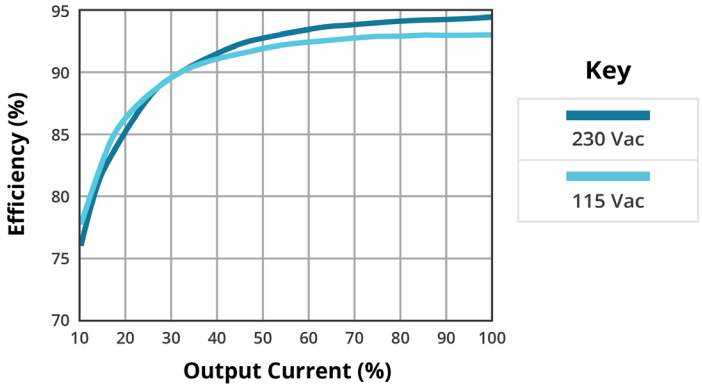
EFFICIENCY VS OUTPUT LOAD
TJ-100-24



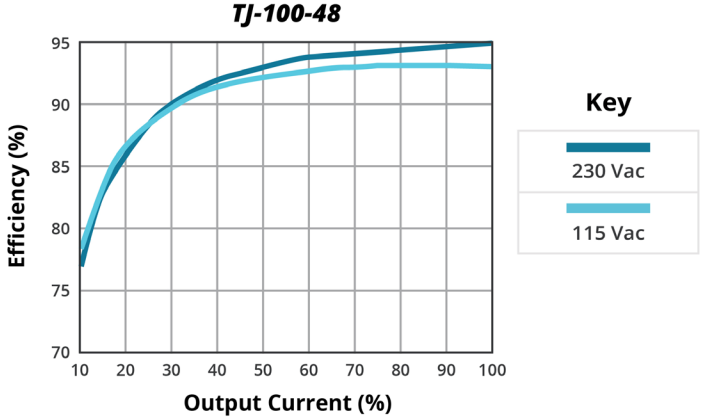
EFFICIENCY VS OUTPUT LOAD
TJ-100-28



EFFICIENCY VS OUTPUT LOAD
TJ-100-36



EFFICIENCY VS OUTPUT LOAD
TJ-100-48



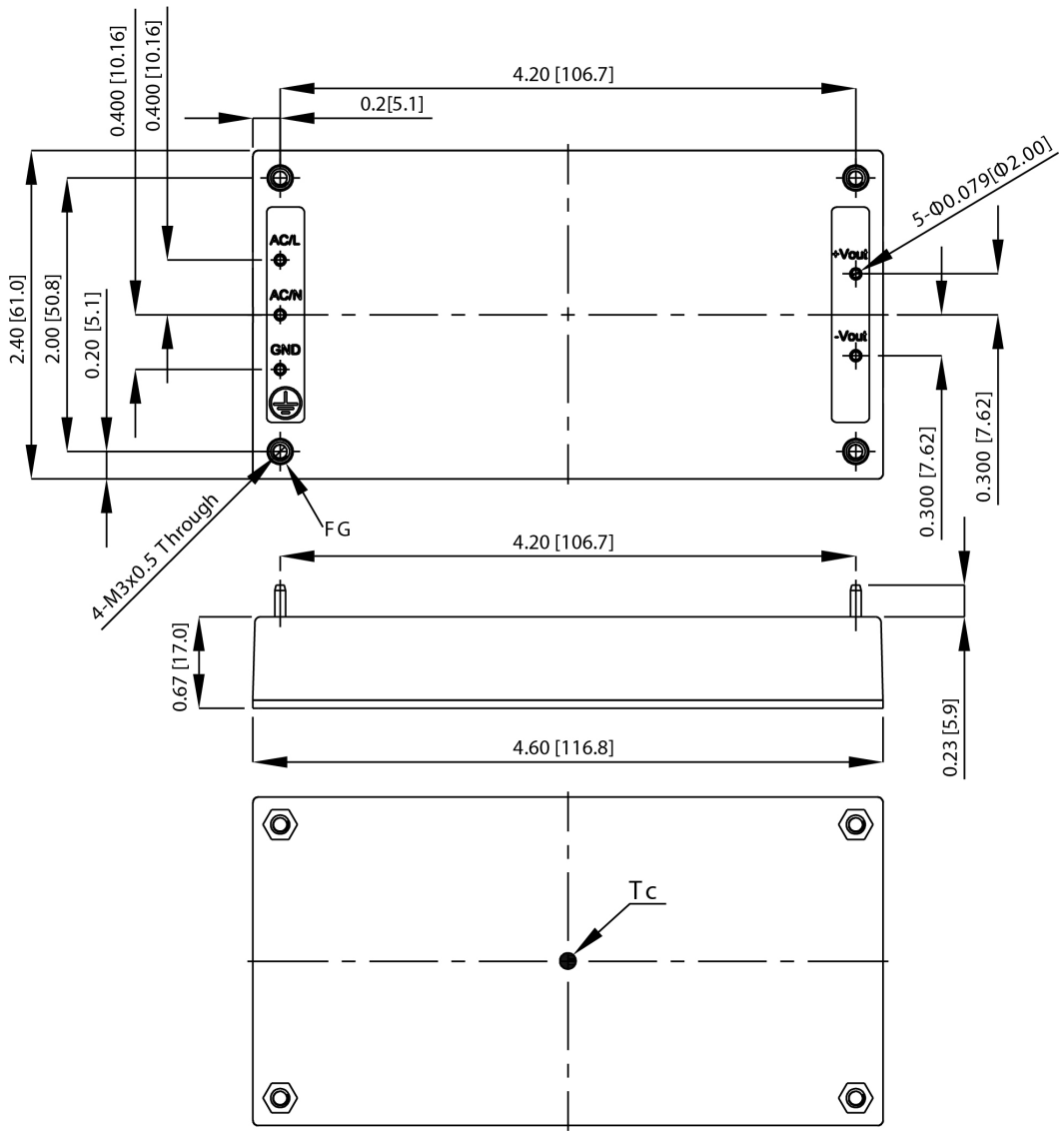
MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	4.60 x 2.40 x 0.67 [116.8 x 61.0 x 17.0 mm]				inch
weight			240		g

MECHANICAL DRAWING

units: inch [mm]
tolerance: inches: x.xx = ±0.03, x.xxx = ±0.020
mm: x.x = ±0.7, x.xx = ±0.50

PIN CONNECTIONS	
1	AC(L)
2	AC(N)
3	GND
4	+Vout
5	-Vout



REVISION HISTORY

rev.	description	date
1.0	initial release	04/04/2024

The revision history provided is for informational purposes only and is believed to be accurate.

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CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

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