

**SERIES:** PSK-50E | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

**FEATURES**

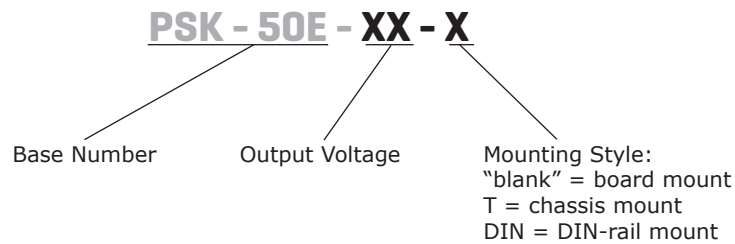
- universal input range (85 ~ 264 Vac)
- Class B emissions (EN 55032/CISPR)
- certified to IEC/EN/UL 62368-1
- designed to meet IEC/EN 60335
- short circuit, over voltage protection
- <0.15 W no-load power consumption
- Class I or Class II
- up to 5,000 m operating altitude
- OVC III



MODEL	output voltage	output current	output power	ripple and noise <sup>1</sup>	efficiency <sup>2</sup>
	typ (Vdc)	max (A)	max (W)	max (mVp-p)	typ (%)
PSK-50E-5	5	8.0	40	150	85
PSK-50E-12	12	4.17	50	120	87
PSK-50E-15	15	3.33	50	150	88
PSK-50E-24	24	2.08	50	240	89
PSK-50E-36	36	1.39	50	360	89
PSK-50E-48	48	1.04	50	480	89

Notes: 1. At full load, nominal input, 20 MHz bandwidth oscilloscope with 0.1µF ceramic capacitor and 10 µF electrolytic capacitor.  
 2. At 230 Vac input.  
 3. All specifications are measured at Ta=25°C, humidity <75%, nominal input voltage, and rated output load unless otherwise specified.

**PART NUMBER KEY**



## INPUT

parameter	conditions/description	min	typ	max	units
voltage <sup>4</sup>	ac input (safety approved)	85	100~240	264	Vac
	dc input	120		370	Vdc
frequency		47	50~60	63	Hz
current	at 100 Vac, full load			1.2	A
inrush current	at 240 Vac, full load		110		A
leakage current	touch			0.25	mA
no load power consumption				0.15	W

Notes: 4. See the derating curve for more details.

## OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	5 Vdc output model			8,000	μF
	12 Vdc output model			4,200	μF
	15 Vdc output model			3,400	μF
	24 Vdc output model			2,087	μF
	36 Vdc output model			1,440	μF
	48 Vdc output model			600	μF
output voltage set point	5 Vdc output model	4.90		5.10	Vdc
	12 Vdc output model	11.76		12.24	Vdc
	15 Vdc output model	14.85		15.15	Vdc
	24 Vdc output model	23.76		24.24	Vdc
	36 Vdc output model	35.64		36.36	Vdc
	48 Vdc output model	47.52		48.48	Vdc
voltage accuracy	5, 12 Vdc output model		±2		%
	all other output models		±1		%
line regulation	high line to low line			±0.5	%
load regulation	10 % to 100 % load			±1.0	%
hold-up time	at 115 Vac	8			ms
switching frequency			65		kHz

## PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	auto recovery, hiccup				
	5 Vdc output model			6.3	Vdc
	12 Vdc output model			15.6	Vdc
	15 Vdc output model			18.0	Vdc
	24 Vdc output model			29.1	Vdc
	36 Vdc output model			43.3	Vdc
over current protection	auto recovery, hiccup	110		140	%
	auto recovery, hiccup				
short circuit protection	auto recovery, hiccup				

## SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output, for 1 minunte			6,000	Vdc
safety approvals	certified to 62368-1: IEC, EN, UL designed to meet 60335: IEC, EN				
safety class	Class I or Class II				
EMC	EN 55032:2015+A11:2020 Class B, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A2:2021				
EMC immunity	EN 55035: 2017+A11:2020				
conducted emissions	EN 55032				
radiated emissions	EN 55032				

## SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
ESD	IEC 61000-4-2:2008, Air Discharge: ±8 kV, Contact Discharge: ±4 kV, perf. Criteria A				
radiated immunity	IEC 61000-4-3:2020, perf. Criteria A				
EFT/burst	IEC 61000-4-4:2012, ±0.5 kV, ±1 kV, perf. Criteria A				
surge	IEC 61000-4-5:2014, L-N: ±2 kV, L-E (Ground): ±4 kV, perf. Criteria A				
conducted immunity	IEC 61000-4-6:2013, perf. Criteria A				
PFMF	IEC 61000-4-8:2009, perf. Criteria A				
voltage dips	IEC 61000-4-11:2004, Dip: 30% Reduction, Dip > 95% Reduction, perf. Criteria A				
voltage interruption	IEC 61000-4-11:2004, > 95% Reduction, perf. Criteria B				
MTBF	MIL-HDBK-217F at 25°C	1,200,000			hours
RoHS	yes				

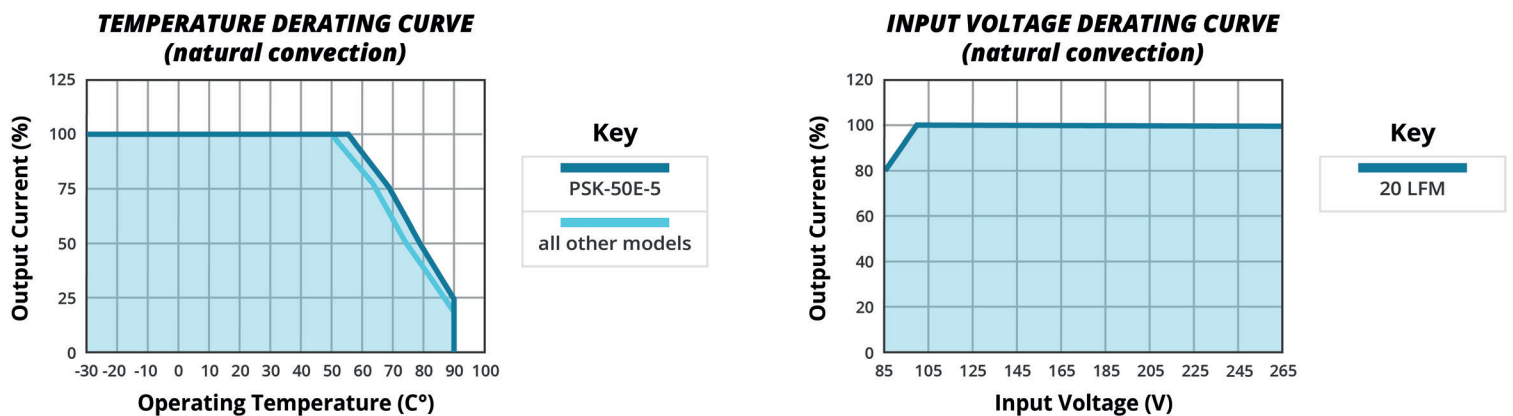
## ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature	see derating curves (safety approved at maximum 50°C or refer to report)	-30		80	°C
storage temperature		-30		85	°C
storage humidity		0		93	%
altitude	IEC/EN/UL 62368-1 OVC II			5,000	m
	IEC/EN 62368-1 OVC III			2,000	m
	designed to meet IEC/EN 60335-1 OVC II			3,000	m

## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	board mount: 2.170 x 3.140 x 1.201 [55.20 x 79.80 x 30.50 mm]				inch
	chassis mount: 2.170 x 4.200 x 1.201 [55.20 x 106.60 x 30.50 mm]				inch
	DIN-rail: 2.170 x 4.200 x 1.784 [55.20 x 106.60 x 45.31 mm]				inch
weight	board mount		222		g
	chassis mount		233		g
	DIN-rail		330		g

## DERATING CURVES



## MECHANICAL DRAWING

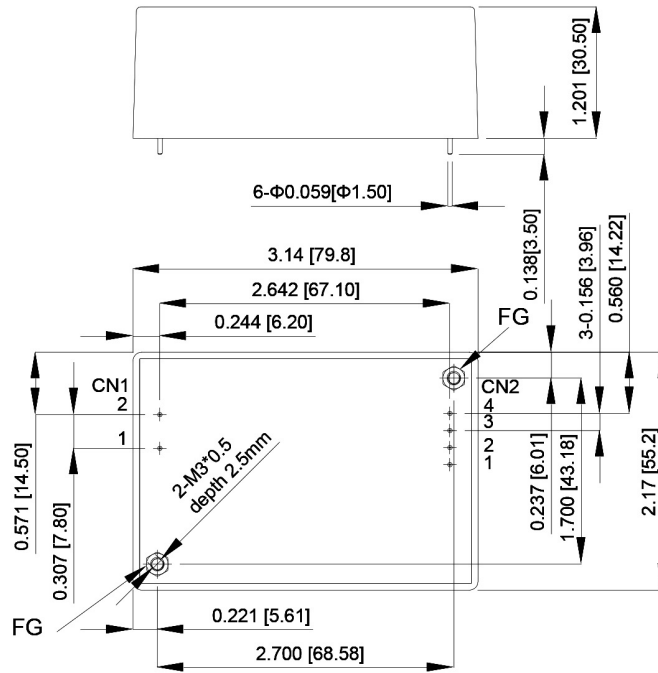
### Board mount

units: inch [mm]

tolerance: inches: x.xx = ±0.03, x.xxx = ±0.02

mm: x.x - ±0.7, x.xx = ±0.5

PIN CONNECTIONS		
PIN	Function	Wafer
1	AC(L)	CN1
2	AC(N)	
1	+Vout	CN2
2	+Vout	
3	-Vout	
4	-Vout	



### Chassis mount

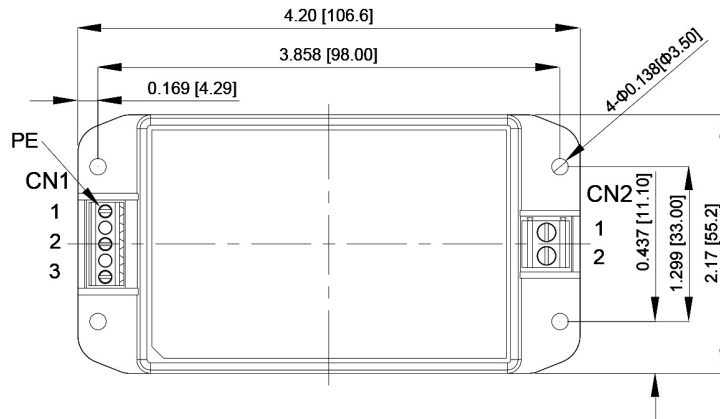
units: inch [mm]

tolerance: inches: x.xx = ±0.03, x.xxx = ±0.02

mm: x.x - ±0.7, x.xx = ±0.5

AC Input Connector (CN1): DINKLE EK350V-03P5 or equivalent		
PIN	Function	Mating Wire Range
1	PE	16 ~ 30 AWG
2	AC(L)	
3	AC(N)	

DC Output Connector (CN2): DINKLE EK500V-02P or equivalent		
PIN	Function	Mating Wire Range
1	+Vout	12 ~ 16 AWG
2	-Vout	



## MECHANICAL DRAWING (CONTINUED)

### DIN-rail mount

units: inch [mm]

tolerance: inches: x.xx = ±0.03, x.xxx = ±0.02

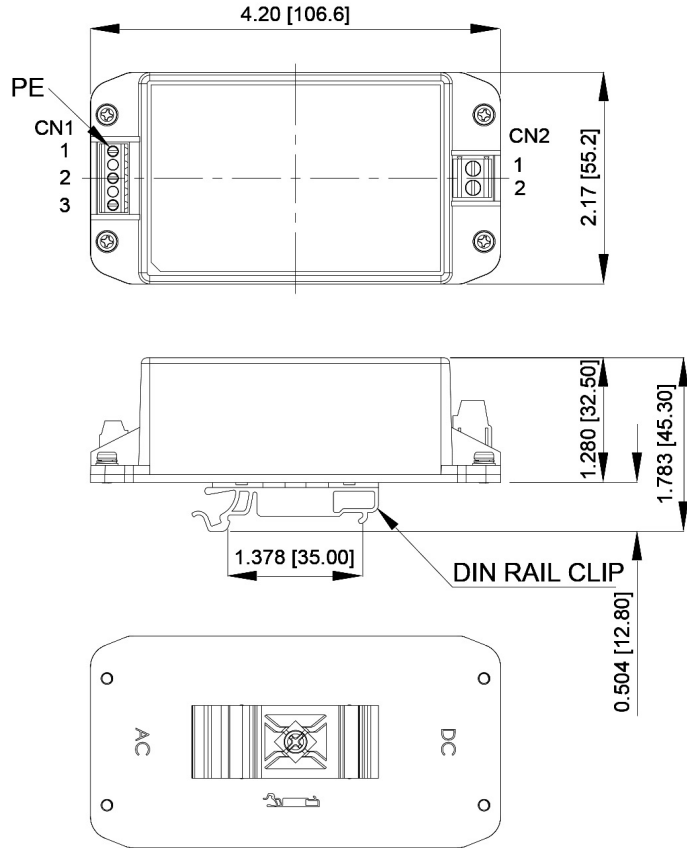
mm: x.x - ±0.7, x.xx = ±0.5

AC Input Connector (CN1): DINKLE EK350V-03P5 or equivalent

PIN	Function	Mating Wire Range
1	PE	16 ~ 30 AWG
2	AC(L)	
3	AC(N)	

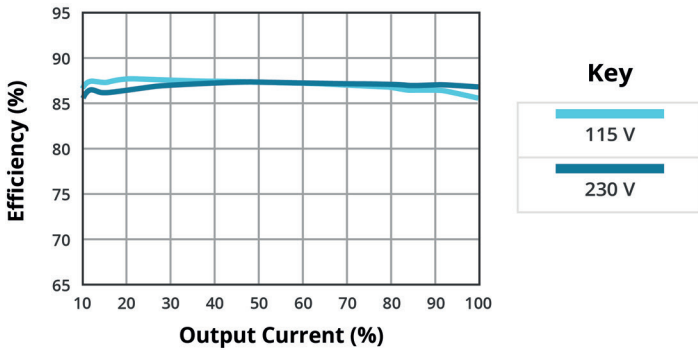
DC Output Connector (CN2): DINKLE EK500V-02P or equivalent

PIN	Function	Mating Wire Range
1	+Vout	12 ~ 16 AWG
2	-Vout	

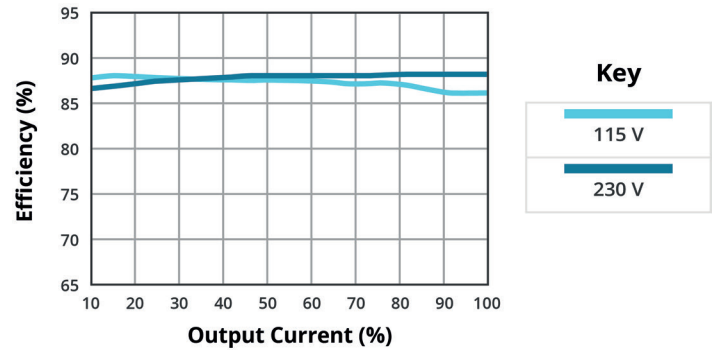


## EFFICIENCY CURVES

**EFFICIENCY VS OUTPUT LOAD (PSK-50E-5)**

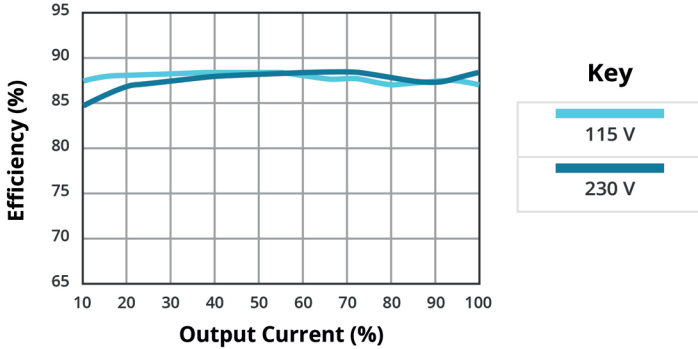


**EFFICIENCY VS OUTPUT LOAD (PSK-50E-12)**

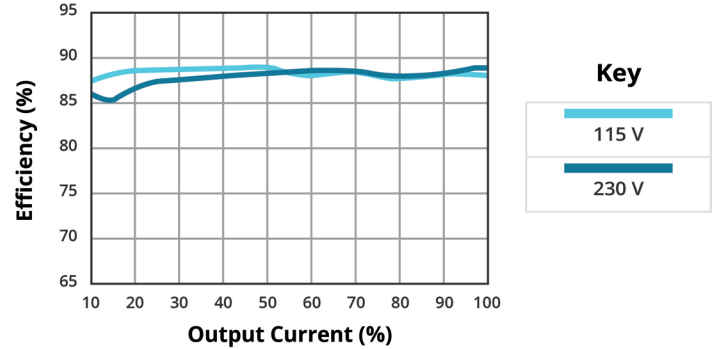


## EFFICIENCY CURVES (CONTINUED)

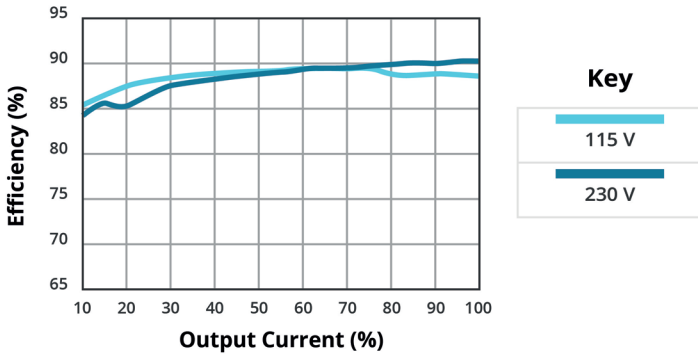
**EFFICIENCY VS OUTPUT LOAD  
(PSK-50E-15)**



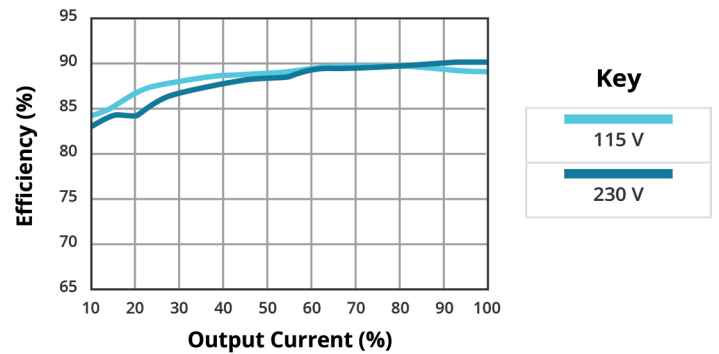
**EFFICIENCY VS OUTPUT LOAD  
(PSK-50E-24)**



**EFFICIENCY VS OUTPUT LOAD  
(PSK-50E-36)**

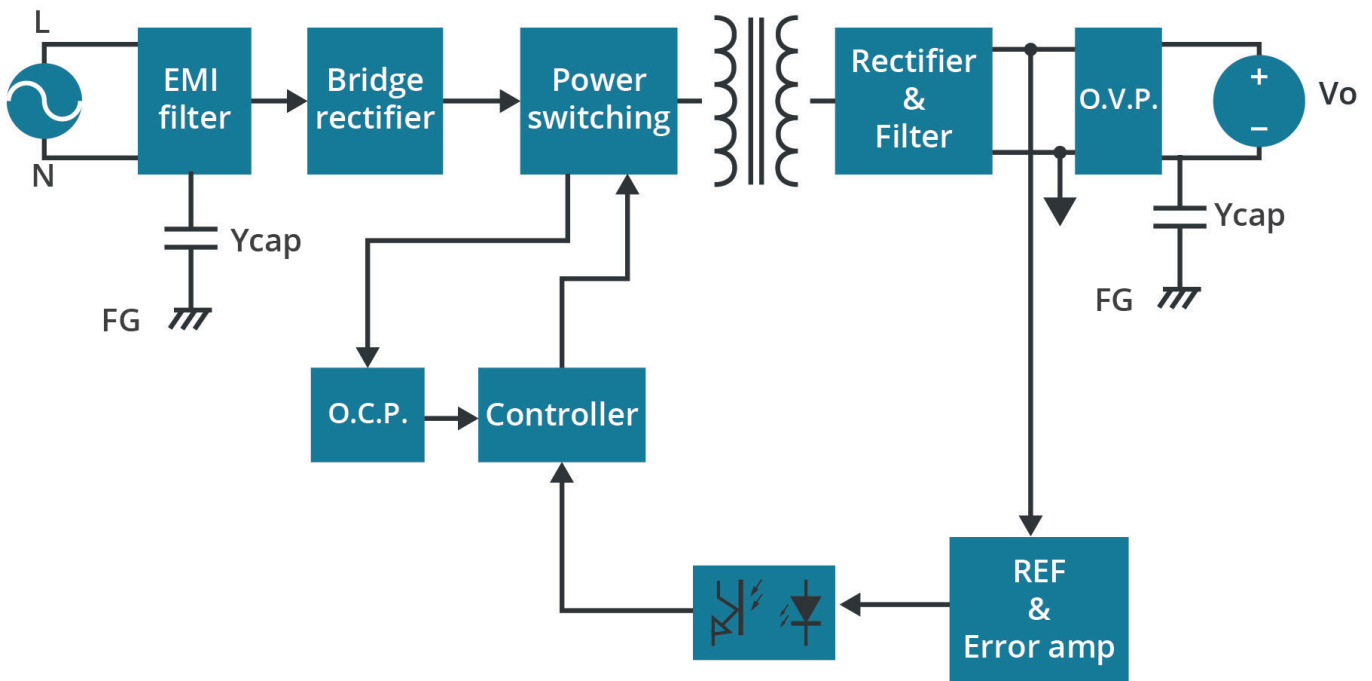


**EFFICIENCY VS OUTPUT LOAD  
(PSK-50E-48)**



## ELECTRICAL BLOCK DIAGRAM

Figure 1



## REVISION HISTORY

rev.	description	date
1.0	initial release	12/17/2024

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



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