



## 13POE\_48-10-A Series

10W and 13W - Single Output - Wide Input - Isolated & Regulated DC-DC Converter

## DC-DC Converter 10 and 13 Watt

-  Efficiency up to 84%
-  Over load protection
-  Short circuit protection (SCP)
-  Operating temperature range: -40°C ~ +85°C
-  Meet CISPR22/EN55022 CLASS A
-  Six-sided metal shield
-  Industry standard pinout

The 13POE\_48-10-A module is designed to extract power from a conventional twisted pair Category 5 Ethernet cable, conforming to the IEEE 802.3af Power-over-Ethernet (PoE) standard.

The 13POE\_48-10-A signature and control circuit provides the PoE compatibility signature and power classification required by the Power Sourcing Equipment (PSE) before applying up to 15W power to the port. The 13POE\_48-10-A is compatible with Class 0 to Class 3 equipment.

The high efficiency DC/DC converter operates over a wide input voltage range and provides a regulated low ripple and low noise output. The DC/DC converter also has built-in overload and short-circuit output protection.



Common specifications	
Short circuit protection:	Continuous, automatic recovery
Cooling:	Free air convection
Operation temperature range:	-40°C~+85°C
Storage temperature range:	-55°C~+125°C
Case/board temperature:	-40~100°C MAX
Lead temperature:	300°C MAX, 1.5mm from case for 10 sec
Storage humidity range:	5% MIN, 95% MAX
Temperature coefficient:	0.02%/°C
Switching frequency:	260kHz TYP
Case material:	Plastic (UL94-V0)
Weight:	13g

Input specifications					
Item	Test condition	Min	Typ	Max	Units
Operating input voltage		36	48	57	V
Maximum input current	TA= 25°C	0.45			A
Maximum input voltage	Continuous	60			VDC
	Transient (100ms)	70			VDC

Isolation specifications					
Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Input-output 1mA-1min			500	VDC
Maximum input voltage				60	VDC

**Example:**  
**13POE\_4803-10-A**  
 13POE = Power Over Ethernet series; 48 = 48V<sub>in</sub>; 03 = 3.3V<sub>out</sub>;  
 10 = Watt; A = Pinning

Output specifications					
Item	Test condition	Min	Typ	Max	Units
Voltage set point		-2		2	%Vo
Line regulation	Vi =Vi,min to Vi,max		0.5		%Vo
Load regulation	Io = Io,min to Io,max		0.5		%Vo
Rated output current	13POE_4803	0.06		3	A
	13POE_4805	0.06		2	A
	13POE_4812	0.06		1.1	A
External load capacitance	Min ESR>10mΩ	330		1000	μF
Output Ripple & Noise	Peak-to-peak: 5 Hz to 20 MHz TA= -40°C~85°C		60	150	mV
Start delay time	Io = Io, max		30		ms
Turn-on time	Io = Io, max		20		ms
Voltage overshoot	Io = Io, max; TA= 25°C		2	5	%Vo
Dynamic response	0.1A/μS 50%~75%~50%I <sub>nom</sub> Vin=48V		135/ 500		mV/ μS

Protection specifications					
Item	Test condition	Min	Typ	Max	Units
Input over voltage lockout*	NO				V
Input under voltage lockout*	• Turn-on point • Turn-off point		35.1 31.1		VDC
Output over voltage lockout	• Mode: NO • Static • Dynamic				V V
Output over current protection	• Mode: Hiccup • Protection 48V <sub>in</sub>		3.5		A
Over temperature protection	• Mode: NO • Hysteresis temp. • Protection				°C °C

\* Ta = 25°C; Io =1A

### Note:

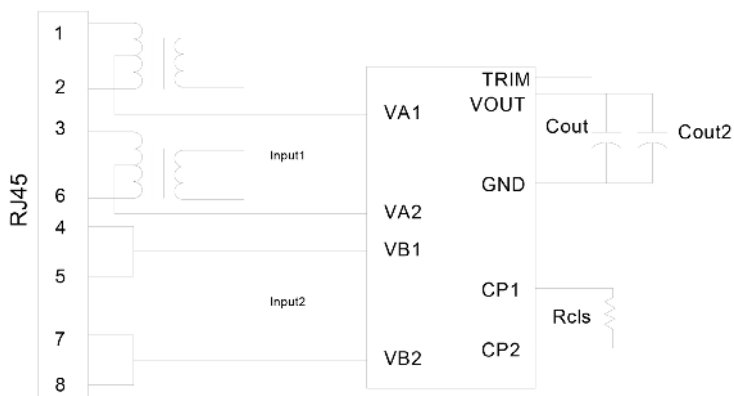
- All specifications measured at Ta = 25°C, humidity <75%, nominal input voltage and rated output load unless otherwise specified.
- In this datasheet, all the test methods of indications are based on corporate standards.
- Only typical models listed, other models may be different, please contact our technical person for more details.
- Our company offer custom products.
- Specifications subject to change without notice.

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DC-DC Converter

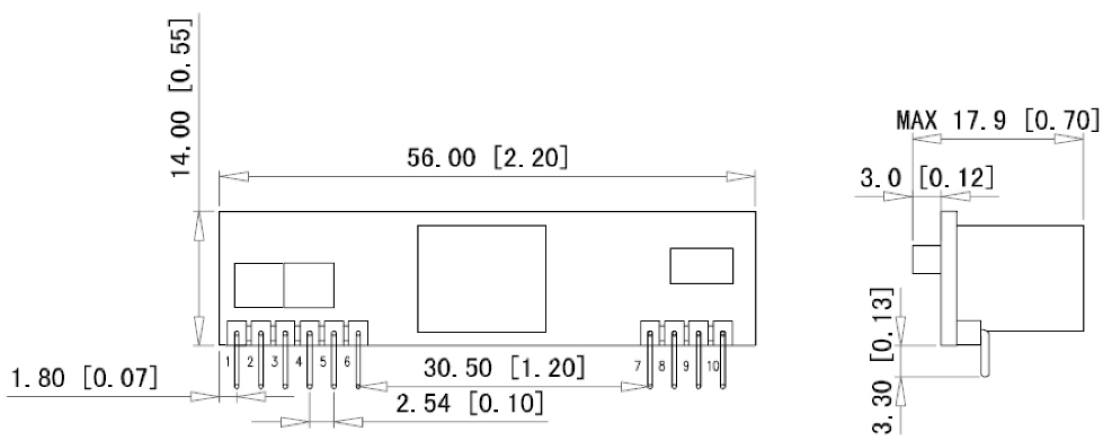
Part Number	Input Voltage [VDC]		Output Voltage [VDC]	Output Current [A, min/max]	Input Current [A, max]	Efficiency [%, Typ.]
	Nominal	Range				
13POE_4803-10-A	48	36-57	3.3	0.06/3	0.45	82
13POE_4805-10-A	48	36-57	5	0.06/2	0.45	83
13POE_4812-13-A	48	36-57	12	0.06/1.1	0.45	84

## Typical application circuit



Cout: 330uf 25V AL-CAP  
Cout2:1uf CEREMIC.

## Mechanical dimensions



Pin	Funktion
1	VA1
2	VA2
3	VB1
4	VB2
5	CP1
6	CP2
7	GND
8	Vout
9	TRIM
10	NC

### Note:

Unit: mm[inch]

General tolerances X.Xmm:  $\pm 0.50\text{mm}$  [ $\pm 0.020\text{inch}$ ]

General tolerances X.XXmm:  $\pm 0.25\text{mm}$  [ $\pm 0.010\text{inch}$ ]