

13POE_48-10A Series

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



DC-DC Converter

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_48-10A 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_48-10A 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_48-10A 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

Example:

13POE_4803-10A
 13 = 13 Watt; POE = Power Over Ethernet; 48 = 48Vin; 03 = 3.3Vout;
 10A = 10 Ampere

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.

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%Inom 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		35.1		VDC
	• Turn-off point		31.1		VDC
Output over voltage lockout	• Mode: NO				V
	• Static				V
	• Dynamic				V
Output over current protection	• Mode: Hiccup		3.5		A
	• Protection 48Vin				A
Over temperature protection	• Mode: NO				°C
	• Hysteresis temp.				°C
	• Protection				°C

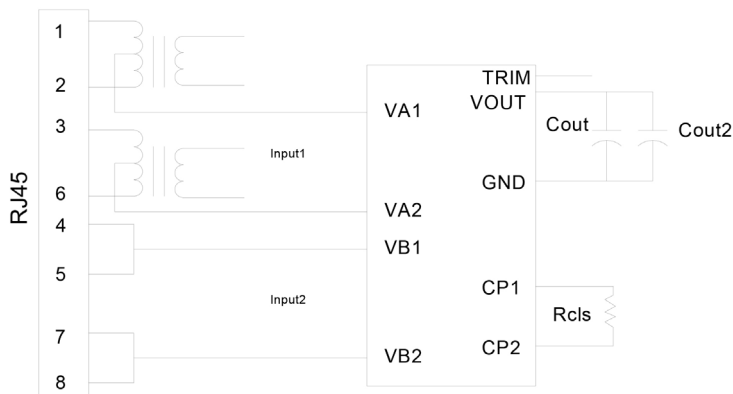
* Ta = 25°C; Io =1A

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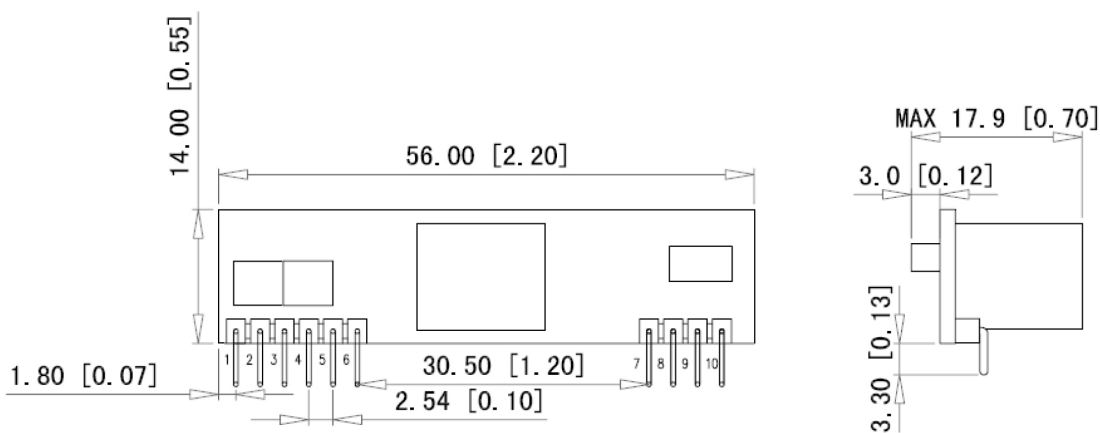
Part Number	Input Voltage [VDC]		Output Voltage [VDC]	Output Current [A, min/max]	Input Current [A, max]	Efficiency [%, Typ.]
	Nominal	Range				
13POE_4803-10A	48	36-57	3.3	0.06/3	0.45	82
13POE_4805-10A	48	36-57	5	0.06/2	0.45	83
13POE_4812-10A	48	36-57	12	0.06/1.1	0.45	84

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: $\pm 0.25\text{mm}$ [$\pm 0.010\text{inch}$]