

DESCRIPTION

PD (Powered Device) Integrated Module (Isolation Type)

FEATURES

- Fully IEEE 802.3af compliant
- 12 watt output load
- IEEE Power class programmable (Green)
- 1500 Volt DC isolation (Input to Output)
- 5V, 12V DC output voltage models
- Compact package minimum PCB footprint
- Minimal external components required
- Overload and short circuit protection
- Wide input voltage (36V to 57V DC)
- Adjustable output voltage
- Support PoE applications in both of Fast / Gigabit Ethernet environments.
- Low output ripple and noise
- Low cost



APPLICATION AREAS

- Security and alarm systems
- Voice over IP phones
- Access control systems
- IP Cameras
- Displays, Net Monitors
- Public address systems
- Wireless access points
- Environmental control
- Telemetry
- Remote environmental monitoring

1 Product Overview

1.1 DP9800 Product Selector

Part Number	Nominal Output Voltage	Output Power(70°C)
DP9800M-5V	5.0V	9 Watts
DP9800M-12V	12.0V	12 Watts

Table 1: Ordering Information

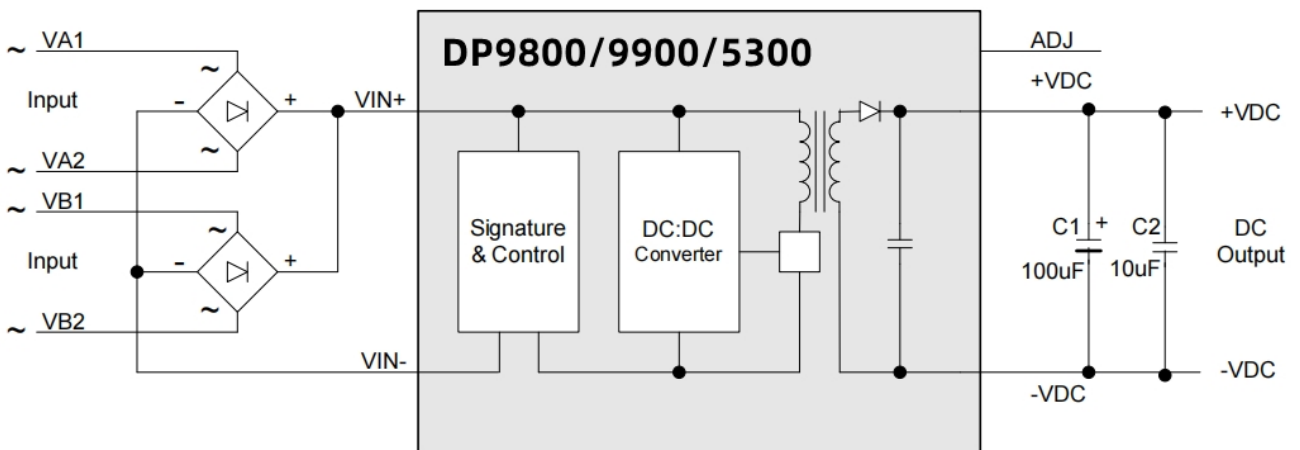


Figure 1: Block Diagram

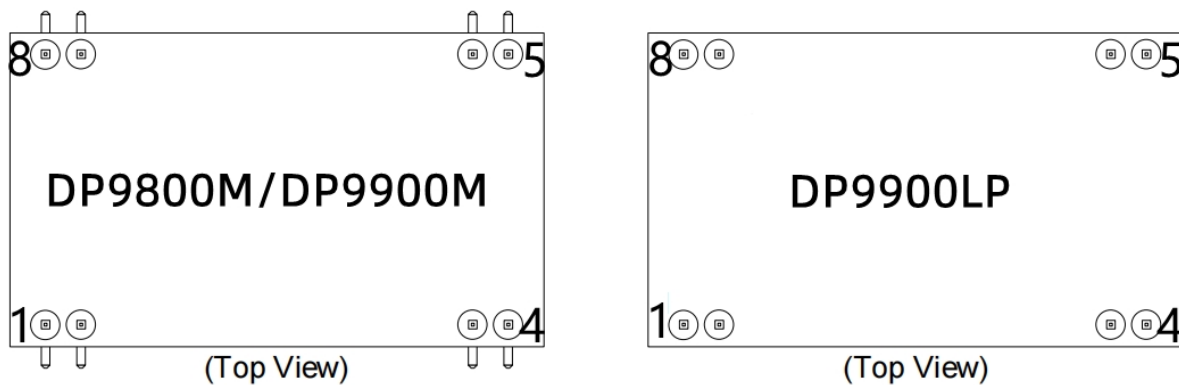


Figure 2: DP9800 Package Format

1.2 Pin Description

Pin #	Name	Description
1	+VDC	DC Output. This pin provides the regulated output from the DC/DC converter.
2		
3	-VDC	DC Return. This pin is the return path for the +VDC output.
4	ADJ	Output Adjust. The output voltage can be adjusted from its nominal value, by connecting an external resistor from this pin to either the +VDC pin or the -VDC pin.
5	VIN+	Direct Input +. This pin connects to the positive (+) output of the input bridge rectifiers.
6		
7	VIN-	Direct Input -. This pin connects to the negative (-) output of the input bridge rectifiers.
8		

Table 2: Pin Description

2 Functional Description

2.1 Typical Connections

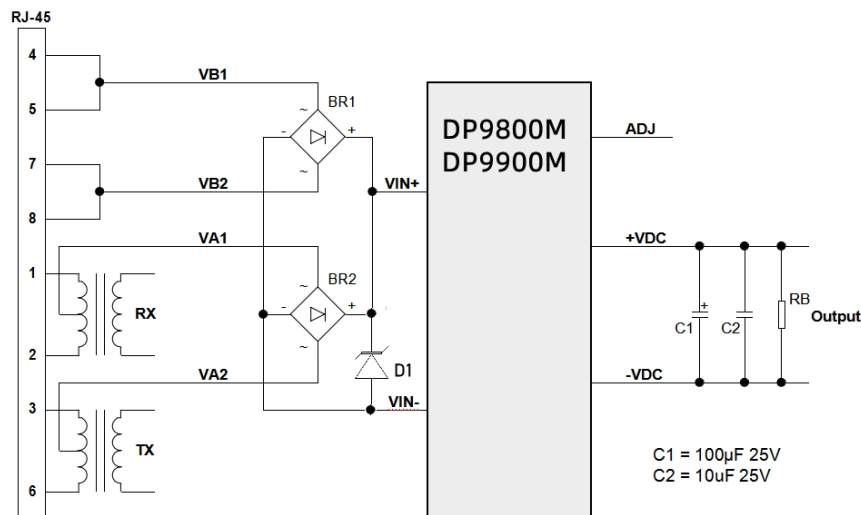


Figure 3: Typical Connection Diagram

BR1, BR2=MB6S; D1=SMAJ58A; RB= \geq I Load min

2.2 Output Voltage Adjustment

The DP9800 series has an OADJ pin, which allows the output voltage to be increased or decreased. Figure 4 shows how the ADJ pin is connected.

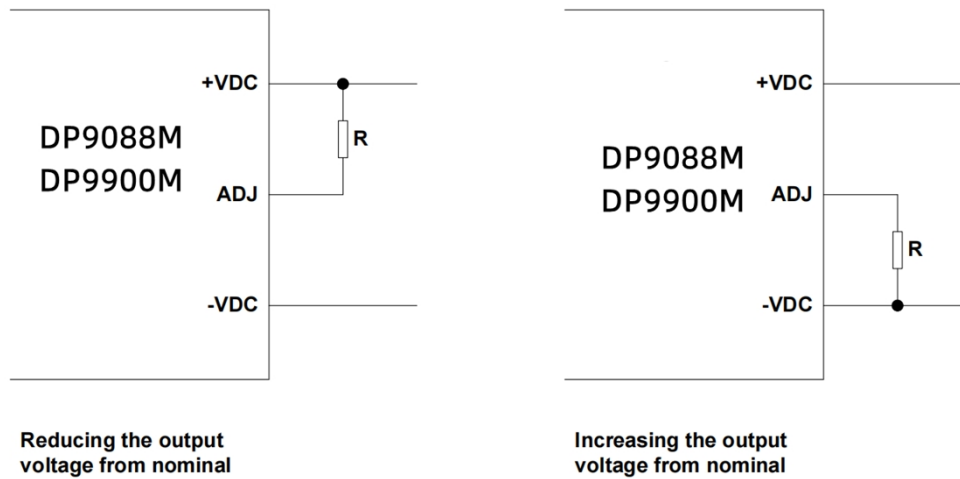


Figure 4: Output Adjustment

Reducing the output voltage, connect R between ADJ and +VDC			
Value of R	DP9805 output	DP9812 Output	
Open Circuit	5.00V	12.07V	
0 Ohms	4.48V	10.0V	
100K	4.76V	11.15V	
470k	4.92V	11.76V	
Increasing the output voltage, connect R between ADJ and -VDC			
Value of R	DP9805 output	DP9812 output	
Open Circuit	5.00V	12.07V	
0 Ohms	5.66V	12.75V	
100K	5.27V	12.34V	
470k	5.08V	12.16V	

Table 3: Output Adjustment Resistor (R) Value

3 Electrical Characteristics

3.1 Absolute Maximum Ratings

	Parameter	Symbol	Min	Max	Units
1	DC Supply Voltage	V _{CC}	-0.3	60	V
2	DC Supply Voltage Surge for 1ms	V _{SURGE}	-0.6	80	V
3	Storage Temperature	T _S	-40	+100	°C

3.2 Recommended Operating Conditions

	Parameter	Min	Typ	Max	Units
1	Input Supply Voltage	36	48	57	V
2	Under Voltage Lockout	30		36	V
3	Input Current		350		mA
4	Operating Temperature	-20	25	70	°C
5	IEEE 802.3af	Class 0			

3.3 DC Electrical Characteristics

	DC Characteristic	Variant	Sym	Min	Typ ¹	Max	Units
1	Nominal Output Voltage	DP9800M-12V	+VDC	11.6	12	12.4	V
		DP9800M-5V		4.75	5	5.25	
2	Minimum Load ²	DP9800M-12V	I _{LOAD}	100			mA
		DP9800M-5V		200			

	DC Characteristic	Variant	Sym	Min	Typ ¹	Max	Units
3	Output Current (VIN = 48V)	DP9800M-12V	I _{out}		1.0		A
		DP9800M-5V			1.8		
4	Line Regulation	DP9800M-12V	V _{LINE}		0.1		%
		DP9800M-5V			0.1		
5	Load Regulation – Min to Max (VIN = 48V)	DP9800M-12V	V _{LOAD}		0.1		%
		DP9800M-5V			0.1		
6	Output Ripple and Noises _{5@} Max load	DP9800M-12V	V _{RN}		150mV		mV _{p-p}
		DP9800M-5V			120mV		
7	Peak Efficiency	DP9800M-12V	EFF		88		%
		DP9800M-5V			85		
8	Short-Circuit Duration ³		T _{SC}			∞	sec
9	Isolation Voltage (I/O) - Impulse Test		V _{ISO}			1500	V _{PK}

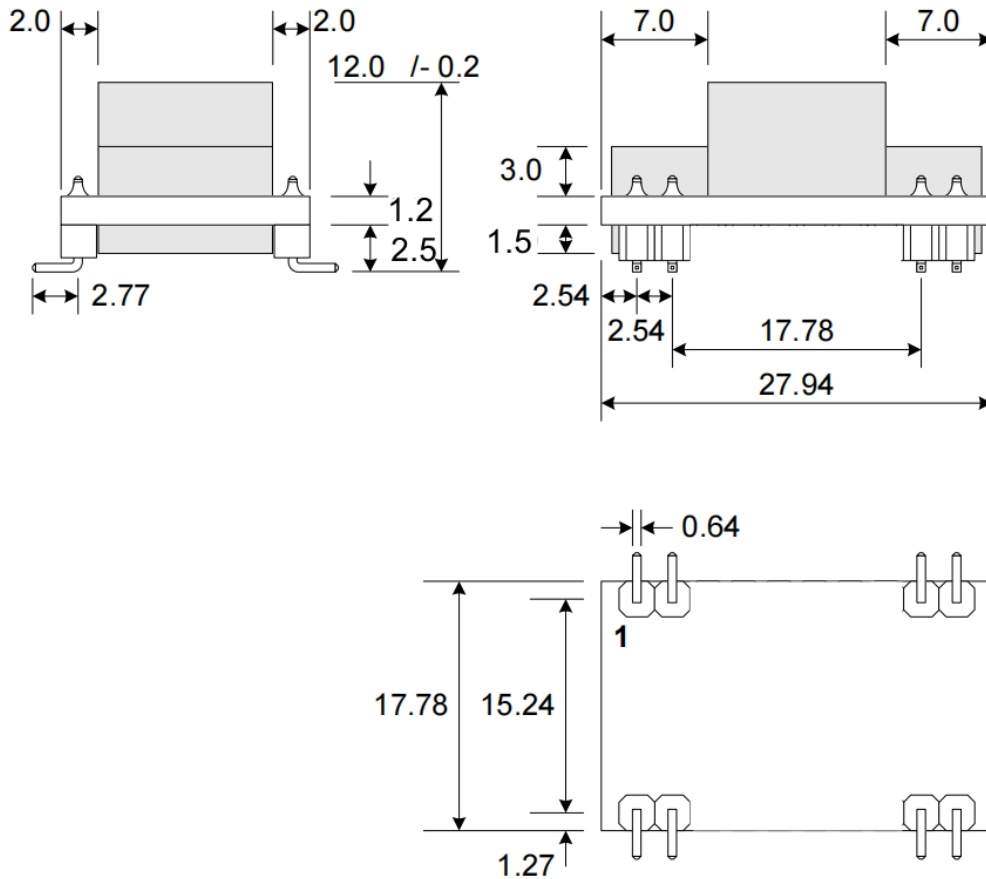
Note 1: Typical figures are at 25°C with a nominal 48V supply and are for design aid only. Not Guaranteed

Note 2: The module can emit an audible noise, if operated at less than the stated minimum I_{LOAD} and cause the PSE to fail its MPS.

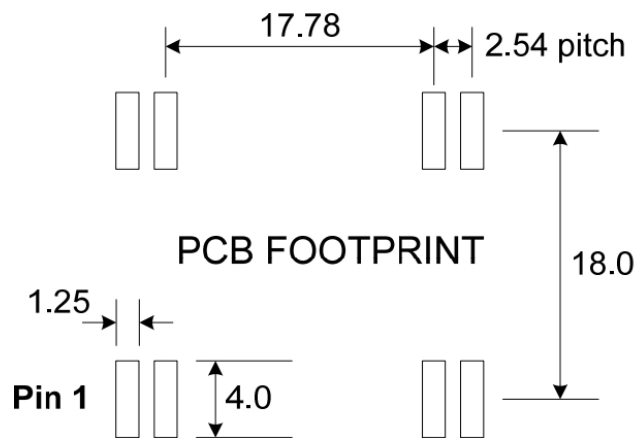
Note 3: >200mohm short due to thermal limitation.

4 PackDPe

4.1 DP9800M



All dimensions are in mm ± 0.15 mm and are nominal values, unless otherwise stated.



DP9812M 测试效率曲线图

