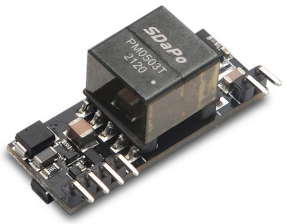
DESCRIPTION

PD (Powered Device) Integrated Module (Isolation Type)

DP1435-XX



DP1435L-XX



FEATURES

- Fully Supports IEEE 802.3af Compliant
- Input Voltage Range 37V to 57V
- Short Circuit, Over-temperature Protection and In-rush Current Limit
- Default Class : 0
- High Efficiency (86% min. 12V@ Full Load)
- Easy Installation and Low Cost
- Included Input Bridge-Diodes
- Low Output Ripple and Noise
- Adjustable Output Voltage
- 1500Vrms Isolation (Input-Output)
- RoHS Compliant

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

SDaPo Communication CO.,LTD.
andy@sdapo.com

1 Product Overview

1.1 DP1435 Product Selector

Part Number	Nominal Output Voltage	Output Power	
		70˚C	85˚C
DP1435-5V	5.15V	12 Watts	12 Watts
DP1435-12V	12.0V	12 Watts	12 Watts
DP1435-24V	24.0V	12 Watts	12 Watts
DP1435L-12V	12.0V	12 Watts	12 Watts

Table 1: Ordering Information

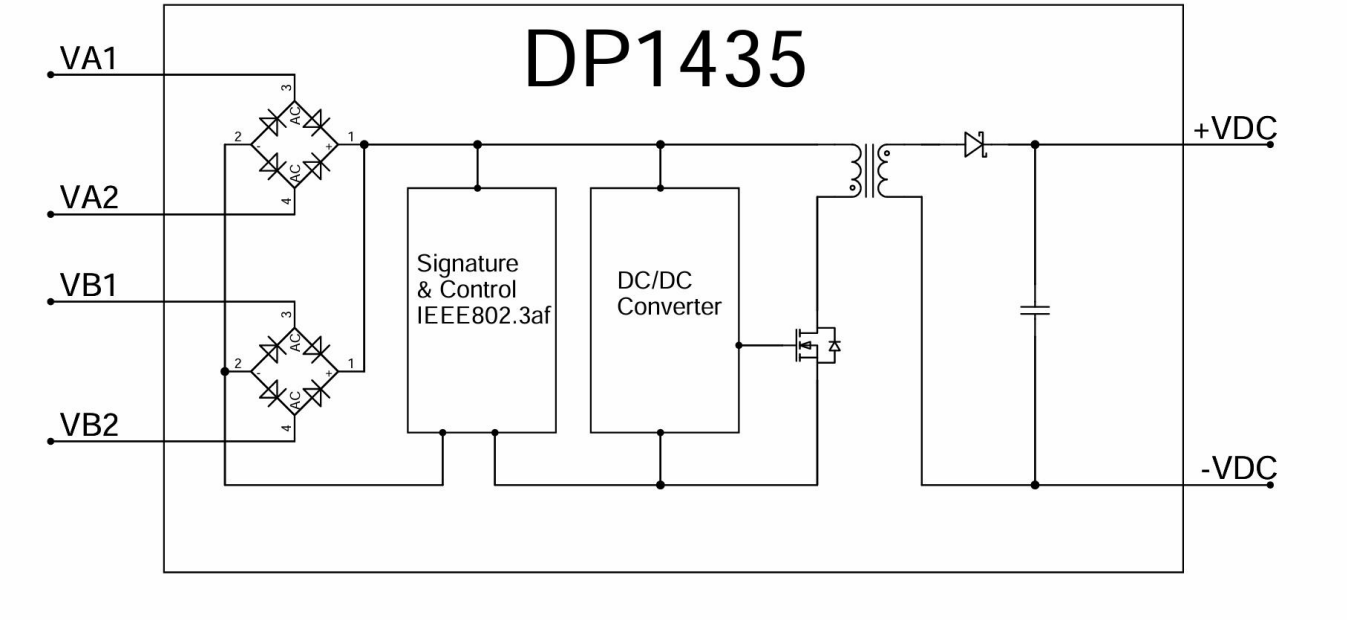


Figure 1: Block Diagram

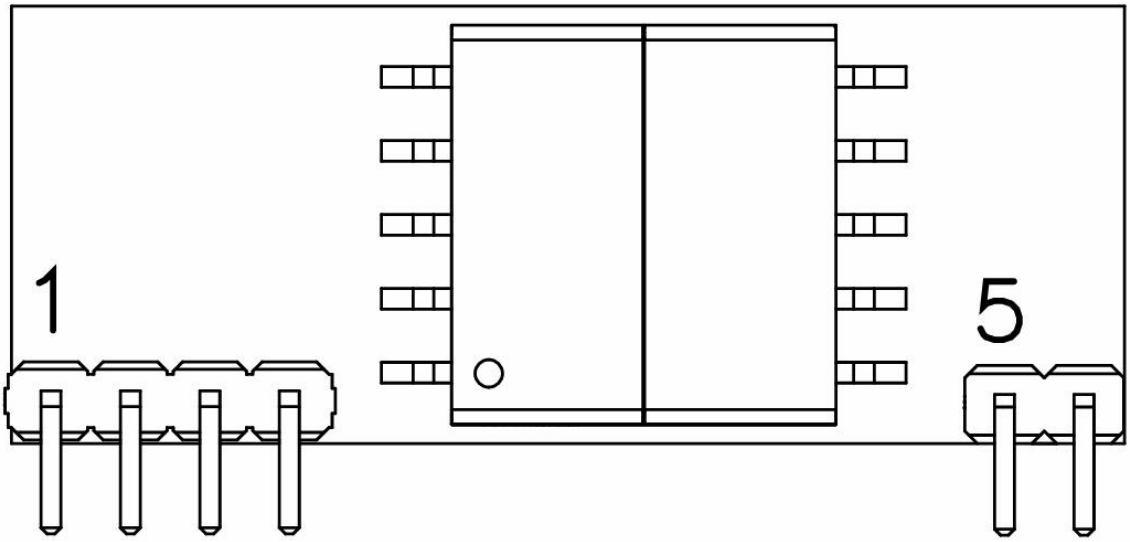


Figure 2: DP1435 Package Format

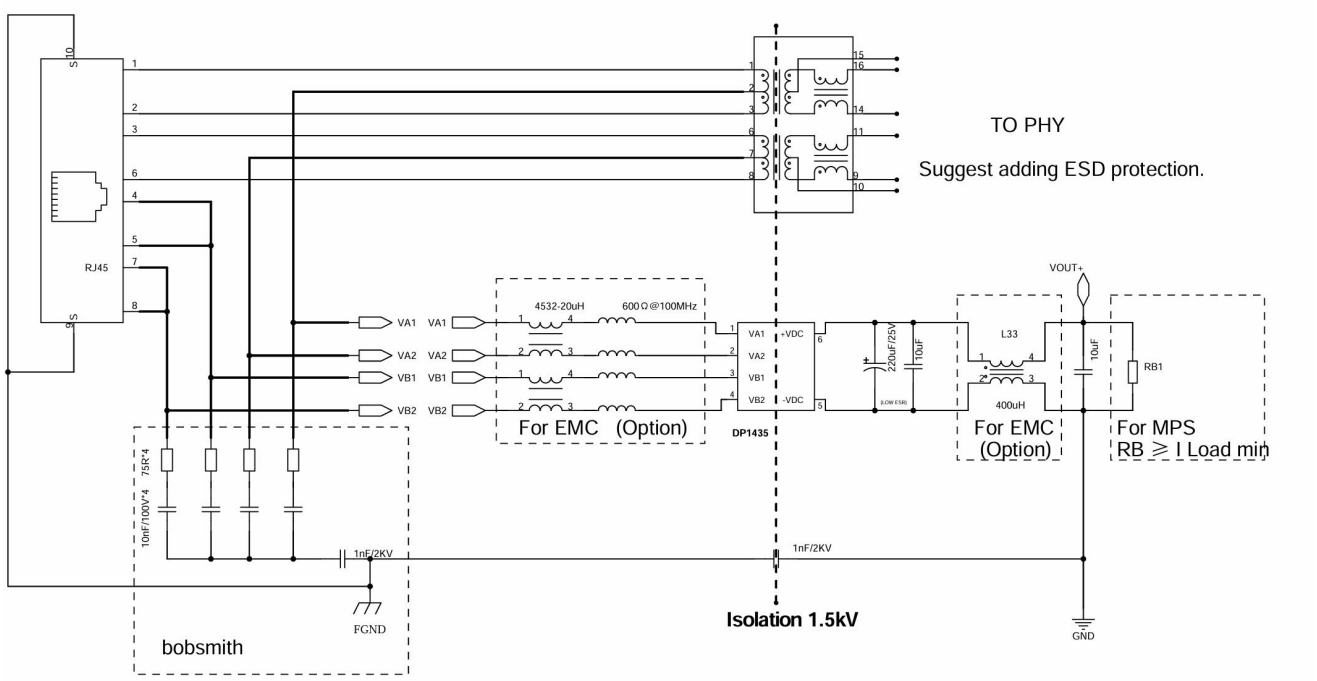
1.2 Pin Description

Pin #	Name	Description
1	VA1	**Input (1) :** This input pin connects to the centre tap of the transformer connected to pins 1&2 of the RJ45 connector. It is not polarity sensitive.
2	VA2	**Input (2) :** This input pin connects to the centre tap of the transformer connected to pins 3&6 of the RJ45 connector. It is not polarity sensitive.
3	VB1	**Input (3) :** This input pin connects to the centre tap of the transformer connected to pins 4&5 of the RJ45 connector. It is not polarity sensitive.
4	VB2	**Input (4) :** This input pin connects to the centre tap of the transformer connected to pins 7&8 of the RJ45 connector. It is not polarity sensitive.
5	-VDC	**Negative DC Output :** This pin provides the -VDC output.
6	+VDC	**Positive DC Output :** This pin provides the +VDC output.

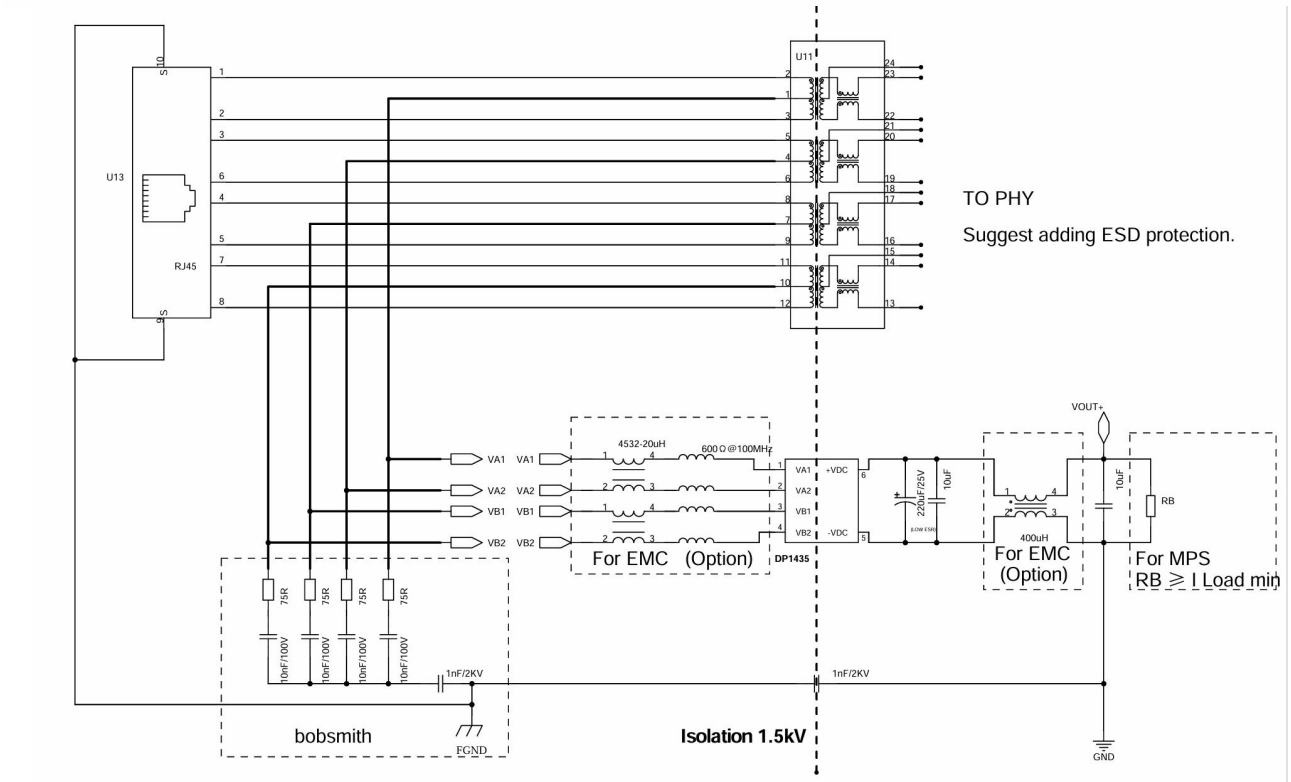
Table 2: Pin Description

2 Functional Description

2.1 Typical Connections



10/100Mbps POE APPLICATION



1G/2.5G/5G10G POE APPLICATION

Figure 3: Typical Connection Diagram

3 Electrical Characteristics

3.1Absolute 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	37	48	57	V
2	Under Voltage Lockout	30		37	V
3	Input Curren		350	400	mA
4	Operating Temperature	-40	25	85	℃
5	IEEE 802.3af	Class 0			

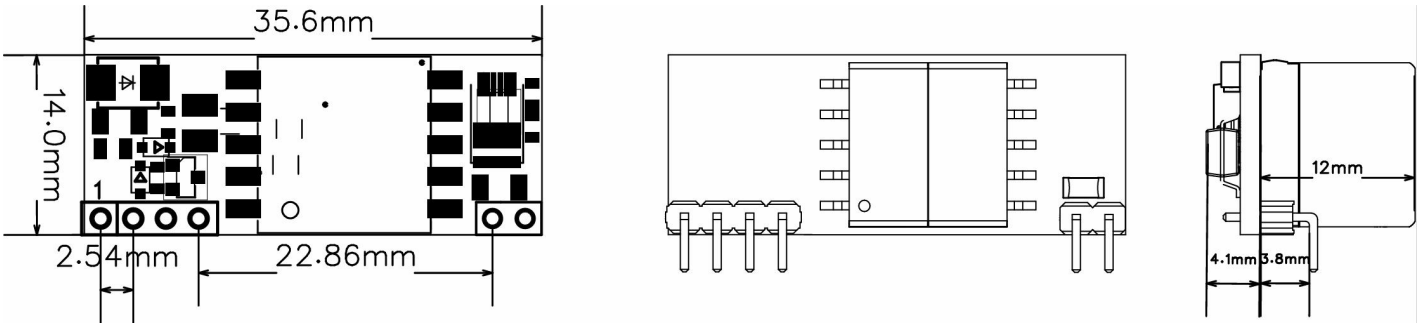
3.3 DC Electrical Characteristics

	DC Characteristic	Variant	Sym	Min	Typ[1]	Max	Units
1	Nominal Output Voltage	DP1435-24V	+VDC	23.5	23.8	24.1	V
		DP1435/L-12V		11.6	12	12.4	
		DP1435-5V		5	5.15	5.3	
2	Minimum Load2	DP1435-24V	I_{LOAD}	20			mA
		DP1435/L-12V		40			
		DP1435-5V		100			
3	Output Current (VIN = 48V)	DP1435-24V	I_{OUT}		0.5		A
		DP1435/L-12V			1.0		
		DP1435-5V			2.35		
4	Line Regulation	DP1435-24V	V_{LINE}		0.15		%
		DP1435/L-12V			0.05		
		DP1435-5V			0.05		
5	Load Regulation – Min to Max (VIN = 48V)	DP1435-24V	V_{LOAD}		0.15		%
		DP1435/L-12V			0.1		
		DP1435-5V			0.1		

6	Output Ripple and Noise[5]@ Max load	DP1435-24V	V_{RN}		180		mV_{p-p}
		DP1435-12V			140		
		DP1435-5V			130		
		DP1435L-12V			160		
7	Peak Efficiency	DP1435-24V	EFF		86		%
		DP1435-12V			86		
		DP1435-5V			84		
		DP1435L-12V			86		
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 Package



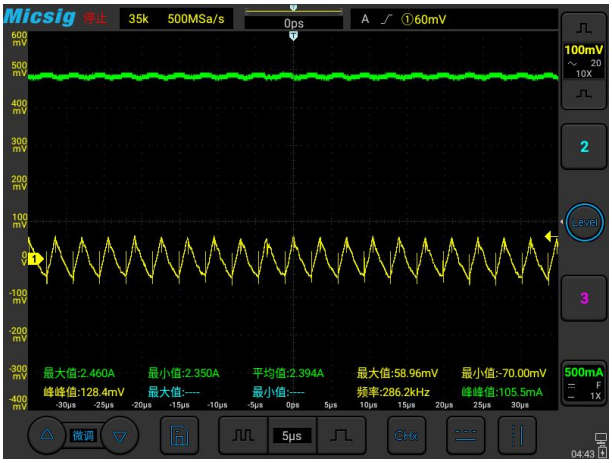
Mechanical Specifications

Typical Characteristics : Vout=5V

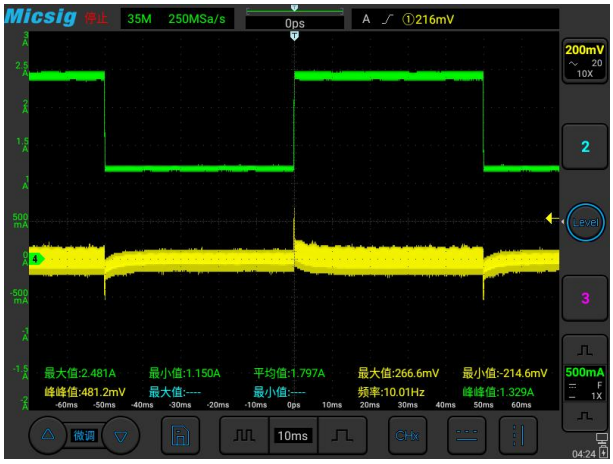
DC 52V PSE, and 100-meter CAT5E network cable to DP1435-5V , and no additional capacitors .



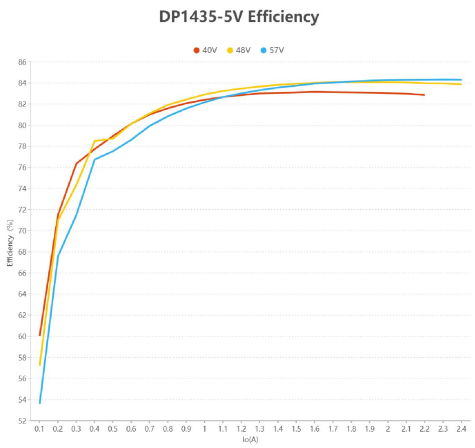
Full load start up from PSE Io=2.4A



Noise VIN=52V,Io=2.4A 20MHz Bandwidth



Transient Response VIN=52V, Io=50%~100%~50%



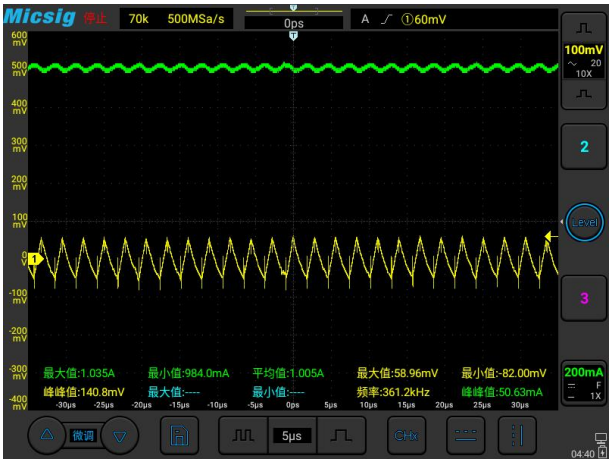
PoE Efficiency (Include rectifier bridges)

Typical Characteristics : Vout=12V

DC 52V PSE, and 100-meter CAT5E network cable to DP1435-12V , and no additional capacitors .



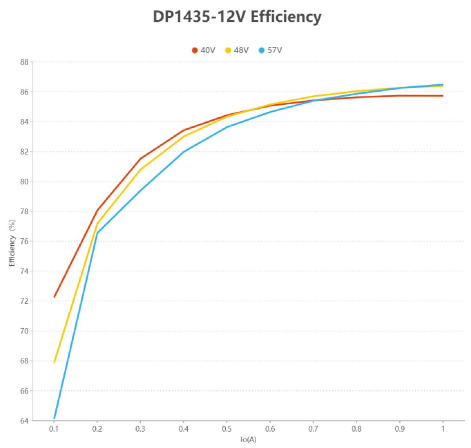
Full load start up from PSE Io=1A



Noise VIN=52V,Io=1A 20MHz Bandwidth



Transient Response VIN=52V, Io=50%~100%~50%



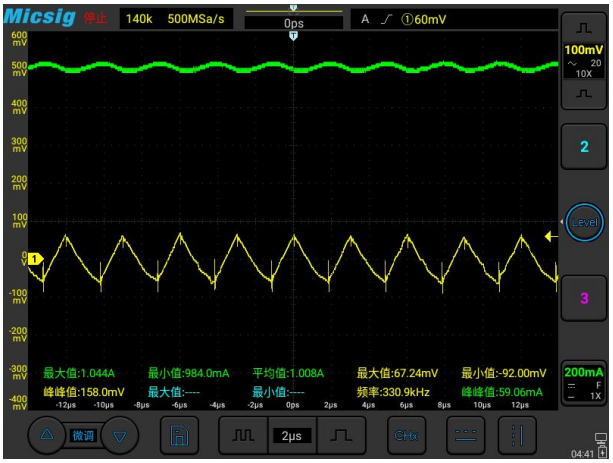
PoE Efficiency (Include rectifier bridges)

Typical Characteristics : Vout=12V

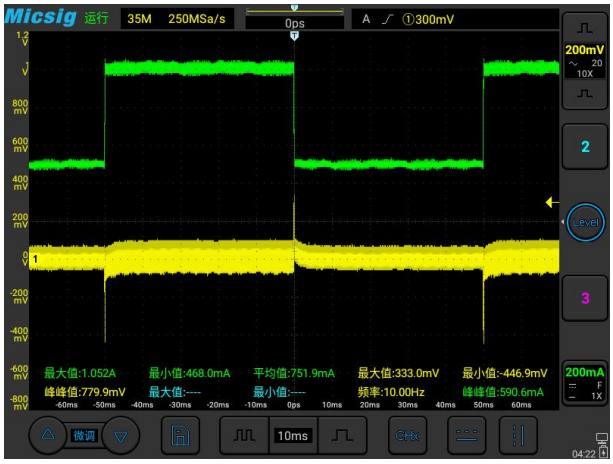
DC 52V PSE, and 100-meter CAT5E network cable to DP1435L-12V , and no additional capacitors .



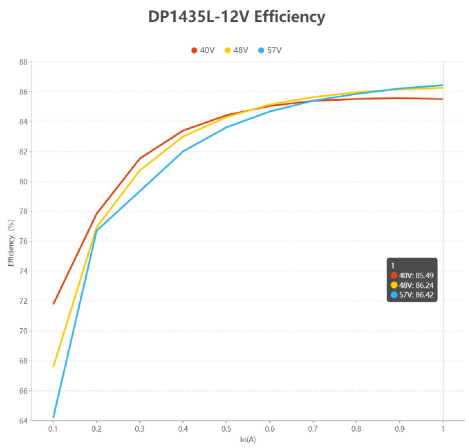
Full load start up from PSE Io=1A



Noise VIN=52V,Io=1A 20MHz Bandwidth



Transient Response VIN=52V, Io=50%~100%~50%



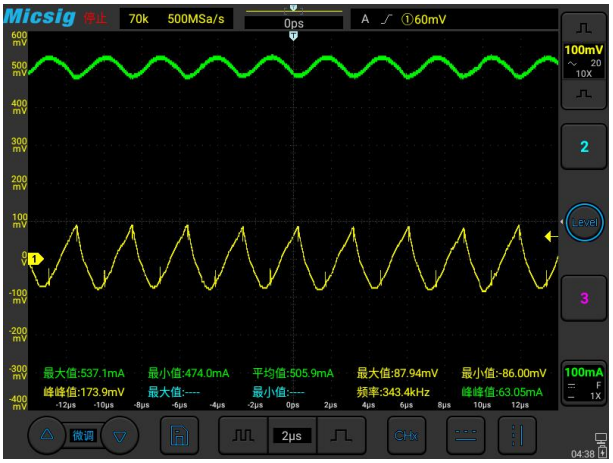
PoE Efficiency (Include rectifier bridges)

Typical Characteristics : Vout=24V

DC 52V PSE, and 100-meter CAT5E network cable to DP1435-5V , and no additional capacitors .



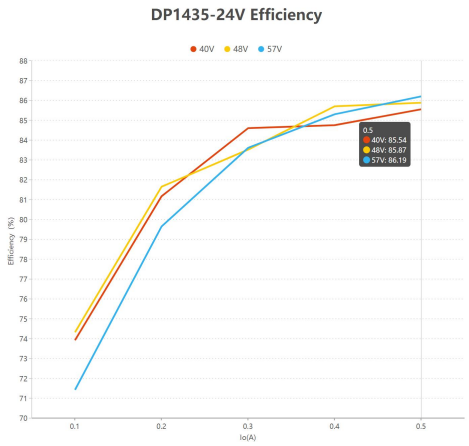
Full load start up from PSE Io=0.5A



Noise VIN=52V,Io=0.5A 20MHz Bandwidth



Transient Response VIN=52V, Io=50%~100%~50%



PoE Efficiency (Include rectifier bridges)