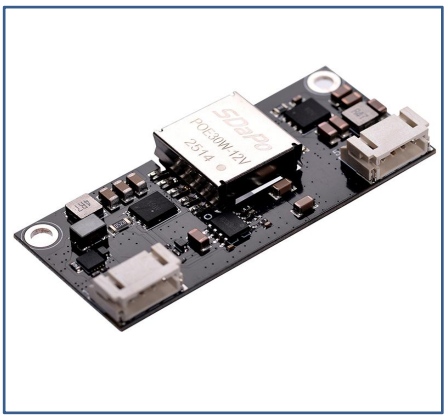
DESCRIPTION

PD (Powered Device) Integrated Module (Isolation Type)



FEATURES

- Fully supports IEEE802.3af/at
- Small Single –60mm (L) x 26mm (W)x 10mm (H)
- Input Voltage Range 44V to 57V
- Support PoE applications in both of Fast / Gigabit Ethernet environments.
- Short Circuit Protection
- Over-temperature Protection
- Programmable Classification (Default:Class 4)
- High Efficiency
- Isolation level 1.5KVrms.
- Easy Installation and Low Cost (Isolation Type, Minimum External Devices required)
- Low Output Ripple and Noise
- Adjustable Output Voltage
- 1500Vrms Isolation (Input-Output)

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 DP2662 Product Selector

Part Number	Nominal Output Voltage	Maximum Output Power *
DP2660-SX	12.0V	28 Watts Peak 24 Watts Continuous

*At 25°C with V_{IN} = 52V

Table 1: Ordering Information

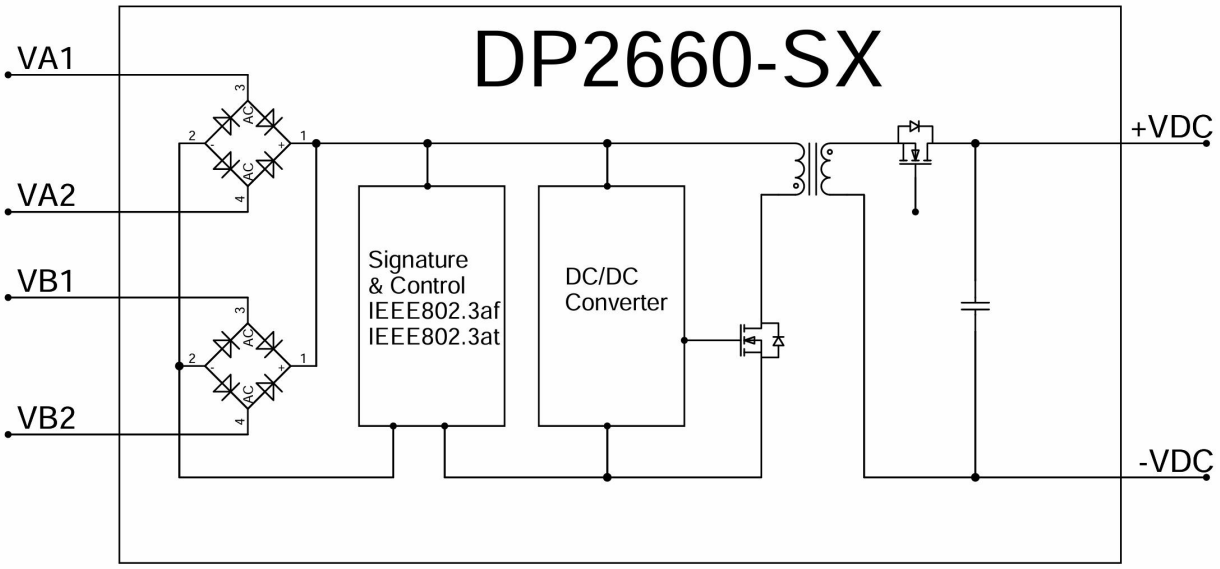


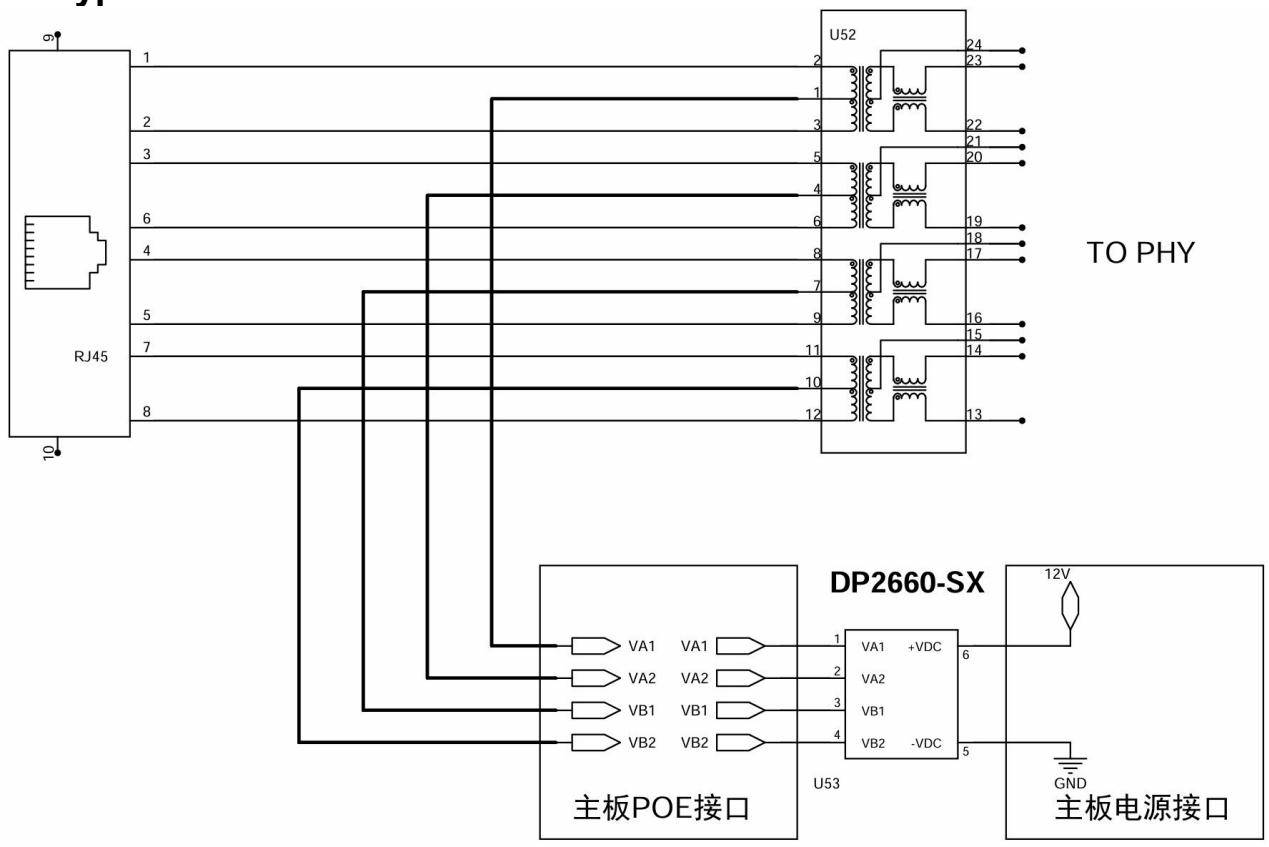
Figure 1: Block Diagram

1.2 Pin Description

1	VA1	**RX Input (1)**. This input pin is used in conjunction with VA2 and connects to the centre tap of the transformer connected to pins 1 & 2 of the RJ45 connector (RX) - it is not polarity sensitive.
2	VA2	**TX Input (2)**. This input pin is used in conjunction with VA1 and connects to the centre tap of the transformer connected to pins 3 & 6 of the RJ45 connector (TX) - it is not polarity sensitive.
3	VB1	**Direct Input (1)**. This input pin is used in conjunction with VB2 and connects to pin 4 & 5 of the RJ45 connector - it is not polarity sensitive.
4	VB2	**Direct Input (2)**. This input pin is used in conjunction with VB1 and connects to pin 7 & 8 of the RJ45 connector - it is not polarity sensitive.
5,6	-VDC	**DC Return.** This pin is the return path for the +VDC output.
7,8	+VDC	**DC Output.** This pin provides the regulated output from the DC/DC converter.

2 Functional Description

2.1 Typical Connections



1G/2.5G/5G10G POE APPLICATION

Figure 2: Typical System 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	36	52	57	V
2	Under Voltage Lockout	30		36	V
3	Operating Temperature	-40	25	85	℃
4	IEEE 802.3bt	Class 4			

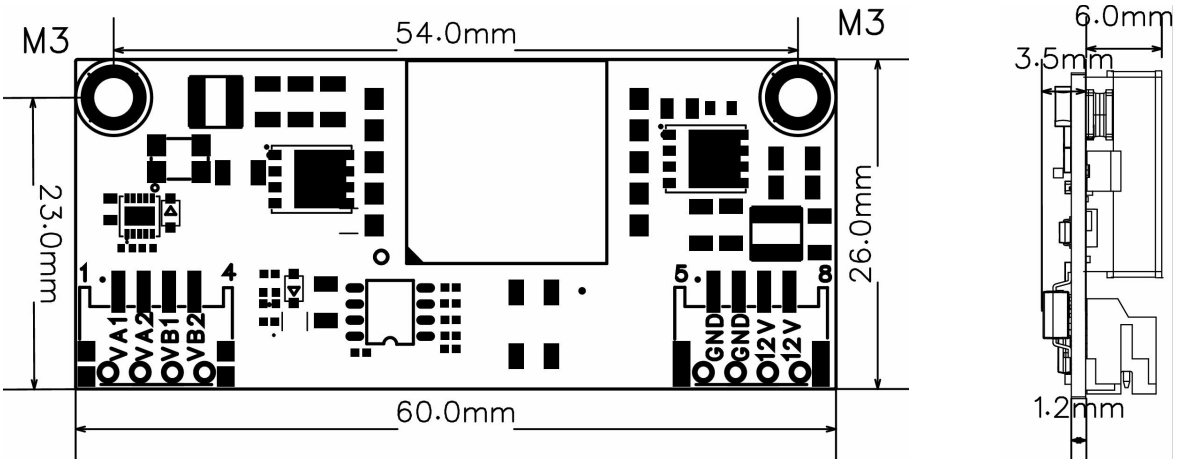
3.3 DC Electrical Characteristics

	DC Characteristic	Variant	Sym	Min	Typ[1]	Max	Units
1	Nominal Output Voltage	DP2660-SX		11.6	12	12.4	V
2	Minimum Load[2]	DP2660-SX		20			mA
3	Output Current (VIN = 52V)	DP2660-SX			2		A
4	Line Regulation	DP2660-SX			0.05		%
5	Load Regulation – Min to Max (VIN = 52V)	DP2660-SX			0.1		%
6	Output Ripple and Noise[5]@ Max load	DP2660-SX			100	@2A	mV_{p-p}
7	Peak Efficiency	DP2660-SX			88	@2A	%
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 52V 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.
Note 4 : The output ripple and noise can be reduced with an external filter

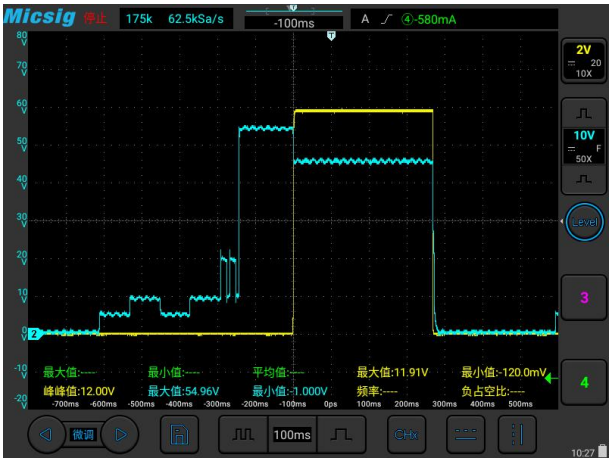
4 Package

DP2660-SX

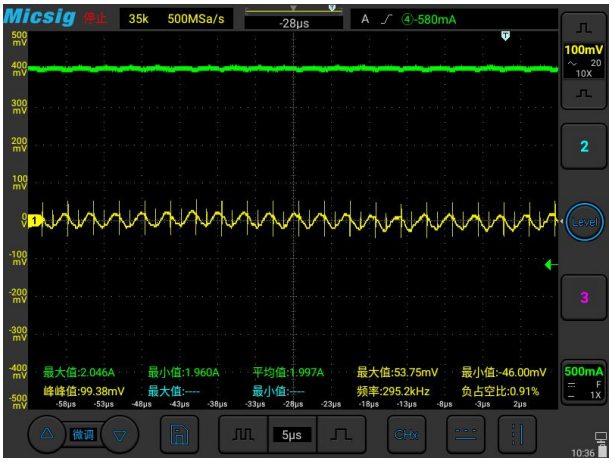


Typical Characteristics : Vout=12V

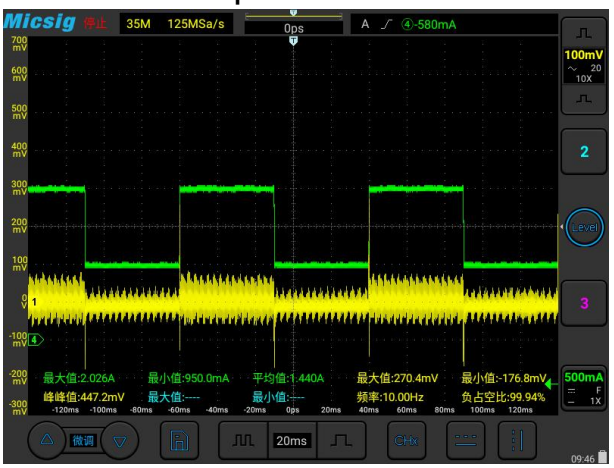
DC 52V PSE, and 100-meter CAT5E network cable to DP266-SX , and no additional capacitors .



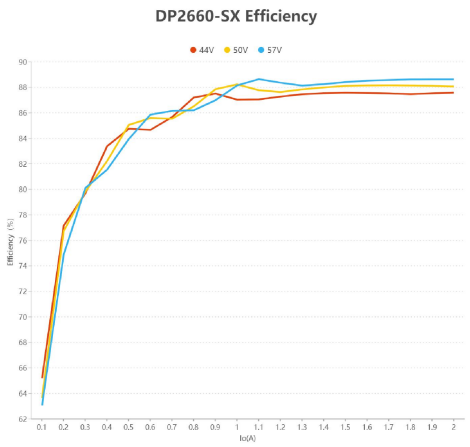
Full load start up from PSE Io=2A



Noise VIN=52V,Io=2A 20MHz Bandwidth

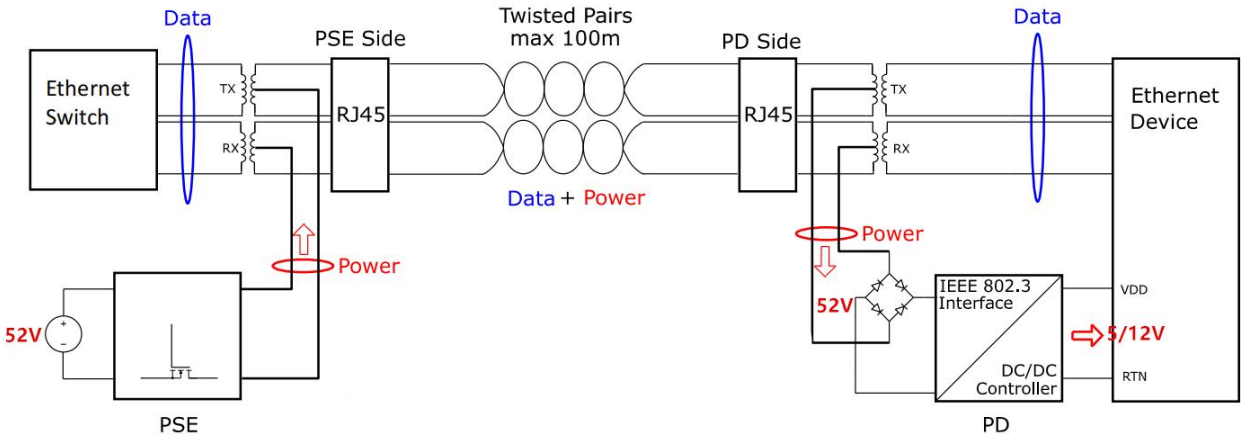


Transient Response VIN=52V, Io=50%~100%~50%



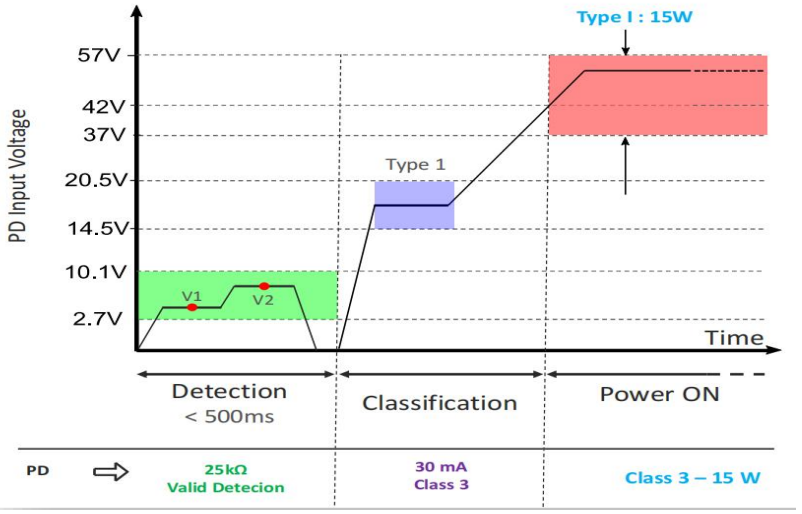
PoE Efficiency (Include rectifier bridges)

1. Power Delivery in PoE Systems

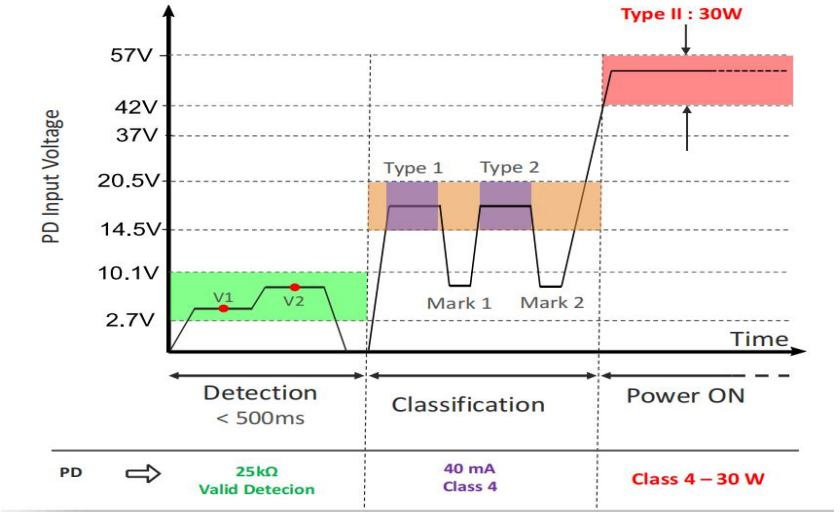


	Type 1 802.3af			Type 2 802.3at	Type 3 802.3bt		Type 4 802.3bt	
Power Class	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8
Power from PSE	4 W	7 W	15.4 W	30 W	45 W	60 W	75 W	90 W
Power delivered to PD	3.84 W	6.49 W	13 W	25.5 W	40 W	51 W	62 W	71.3 W

2. Establishing PoE Connection – Type 1 (IEEE 802.3af/PoE)



3. Establishing PoE Connection – Type 2 (IEEE 802.3at/PoE+)



4. Establishing PoE Connection – Type 3 and 4 (IEEE 802.3bt)