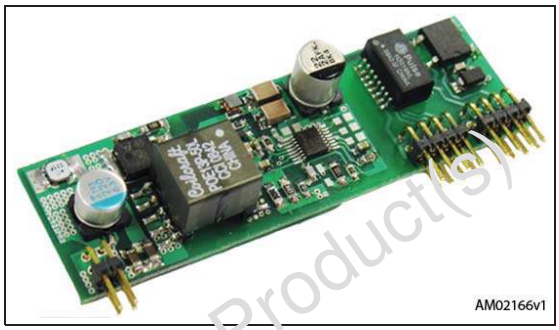
SPDCPOE05

Power over ethernet 10 W module

Preliminary data

Features

- Input voltage range: 38.5 V to 60 V
- 10 W output
- Based on ST devices integrating standard PoE interface and current mode PVM controller
- IEEE 802.3af compliant (PoE standard)
- Class 0 (zero), 0-12.96 W input
- Output voltage 5 V
- Output current 2 A
- Output voltage ± 5 %
- Ripple 1 % rms
- Transient response ±5 %, ½ load to full load
- Operating temperature range -40 °C to 70 °C
- Input transient suppressor
- Under voltage lockout
- Soft-start
- Short circuit protection
- 1500 VDC input/output insulation
- Input and output will be normally maintained within SELV limit
- Very compact size, about 86x24.2x17 mm
- Vertical THT package
- RoHS compliant
- UL 94V-0 flammability



Applications

- The target applications are small low power remote IP appliances.
- Security system, doors access, cameras, alarms
- Displays
- Public address systems
- Wireless access point
- Environmental control
- Telemetry
- Remote environmental monitoring

Table 1. Device summary

Order code	Nominal input voltage	Nominal output voltage	Max efficiency	Nominal power
SPDCPOE05	48 V	5 V	80 %	10 W

1 Description

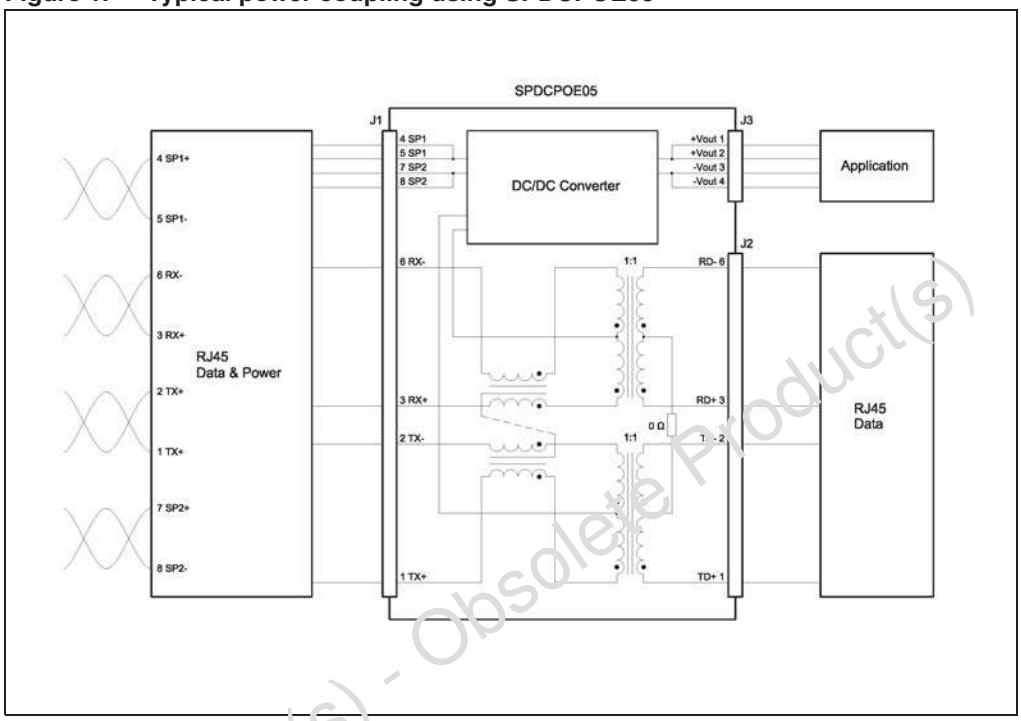
SPDCPOE05 is a power module specifically designed to provide an isolated, low-voltage power source to a remote powered device (PD) in power over ethernet (PoE) applications. SPDCPOE05 has full functional compliance with IEEE802.3af. It is designed to extract power from Ethernet cable when sourced by power sourcing equipment (PSE) also conforming to IEEE802.3af. SPDCPOE05 is rated 10 W and incorporate PD detection and PD classification current signatures required for the PSE. The module is compatible with PD classifications class 0. In addition to a fully integrated DC-DC converter, each SPDCPOE05 power module incorporates internal input diode bridges to support both data line and spare line pair standard ethernet connections, a transient suppressor for input over-voltage protection, and an EMI filter to ensure noise compatibility with Ethernet data signals. Other features include: input under voltage lockout (UVLO), soft-start, over-current and short-circuit protection.

Table 2. Pin description

No	Pin name	I/O	Description
J1-1	TX +	I	Ethernet in data line
J1-2	TX -	I	Ethernet in data line
J1-3	RX +	I	Ethernet in data line
J1-4	SP1	I	Ethernet in spare line
J1-5	SP1	I	Ethernet in spare line
J1-6	RX -	I	Ethernet in data line
J1-7	SP2	I	Ethernet in spare line
J1-8	SP2	I	Ethernet in spare line
J2-1	TD +	O	Ethernet out data line
J2-2	TD -	O	Ethernet out data line
J2-3	RD +	O	Ethernet out data line
J2-4		n.c.	
J2-5		n.c.	
J2-6	RD-	O	Ethernet out data line
J2-7		n.c.	
J2-8		n.c.	
J3-1	Vout +	O	Power output +5 Volt
J3-2	Vout +	O	Power output +5 Volt
J3-3	Vout -	O	Power output 0 Volt
J3-4	Vout -	O	Power output 0 Volt

2 Typical configuration

Figure 1. Typical power coupling using SPDCPOE05



3 Mechanical data

In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK® packages, depending on their level of environmental compliance. ECOPACK® specifications, grade definitions and product status are available at: www.st.com. ECOPACK is an ST trademark.

Figure 2. Mechanical dimensions

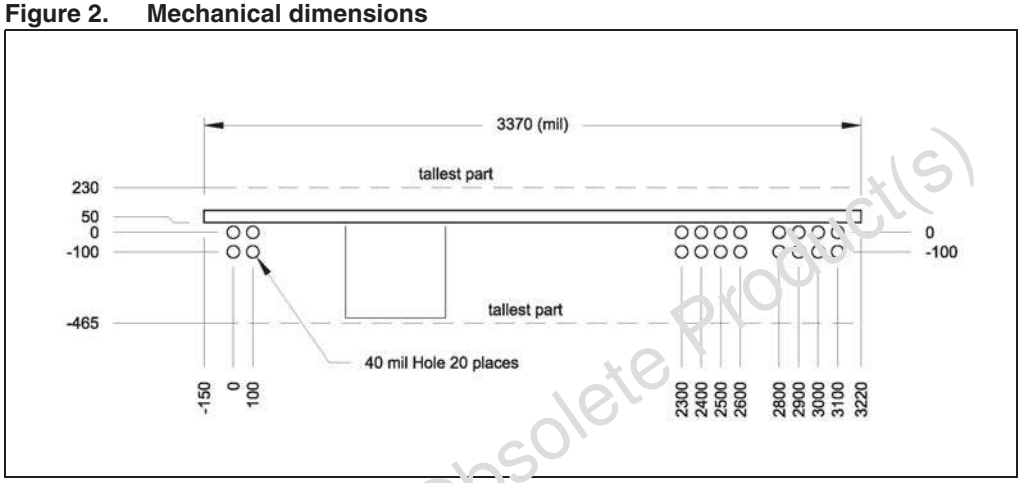
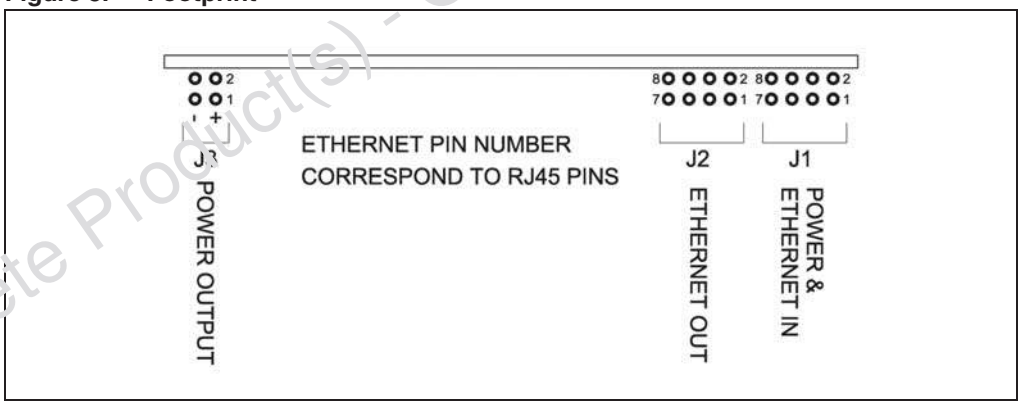


Figure 3. Footprint



4 Revision history

Table 3. Document revision history

Date	Revision	Changes
03-Mar-2009	1	Initial release