

Power-Over-Ethernet Schottky Bridge Rectifiers and TVS

Power-Over-Ethernet (POE) application has gained tremendous popularity and acceptance since IEEE ratified the 802.3AF standard on 6/12/03. The standard calls for 15.4 watts of power to connect and drive VoIP, Security Cameras, Kiosk devices by using CAT-6 for data and power supply, greatly reducing cost, complexity, and reliability of such implementation.

COMCHIP's Schottky Bridge series are designed to exceed the energy efficiency required in POE application while saving PCB space. The low forward voltage drop Schottky bridges improve rectification efficiency by 25%, and compact footprint of the Mini-DIP/TO-269AA package saves 50% of PCB space compared to 4 individual Schottky in SMA package.

Full wave bridge rectifiers are available in 1 amp low forward voltage drop (low Vf) and 2 amp versions. Voltage offering are 40V, 60V, and 100V.

In addition to using the Schottky bridge rectifier, the powered device is coupled with a TVS diodes (TV04A580J-HF or SMAJ58A) for surge protection across the rectified output so any impulse are clamped before reaching the sensitive DC/DC converter

Comchip P/N	Description
CDBHD140L-G	1A, 40V, Low Vf, MDS
CDBHD160L-G	1A, 60V, Low Vf, MDS
CDBHD1100L-G	1A, 100V, Low Vf, MDS
CDBHD240-G	2A, 40V, MDS
CDBHD260-G	2A, 60V, MDS
CDBHD2100-G	2A, 100V, MDS
CDBHM140L-HF	1A, 40V, Low Vf, MBS
CDBHM160L-HF	1A, 60V, Low Vf, MBS
CDBHM1100L-HF	1A, 100V, Low Vf, MBS
CDBHM240L-HF	2A, 40V, Low Vf, MBS
CDBHM260L-HF	2A, 60V, Low Vf, MBS
CDBHM2100L-HF	2A, 100V, Low Vf, MBS
TV04A580J-HF	TVS 400W 58V SMA

Common POE applications are:

- VoIP
- Video Cameras
- Retail Kiosk
- Point-of-Sales devices
- Card scanners
- Security Systems
- Remote devices
- Industrial automation tools & sensors

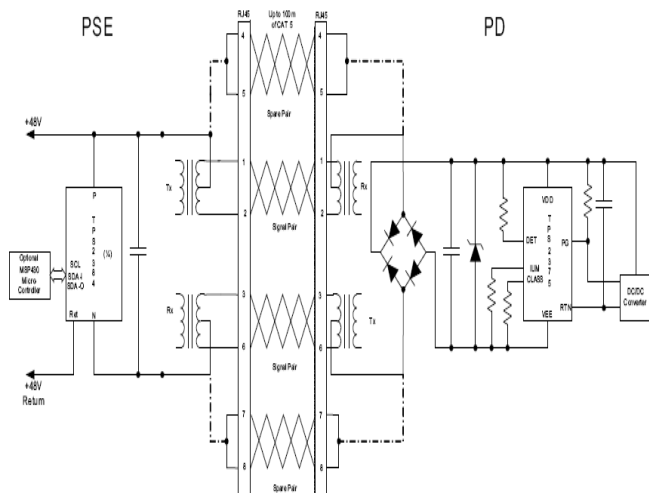


Figure 1. Typical PoE Application Diagram

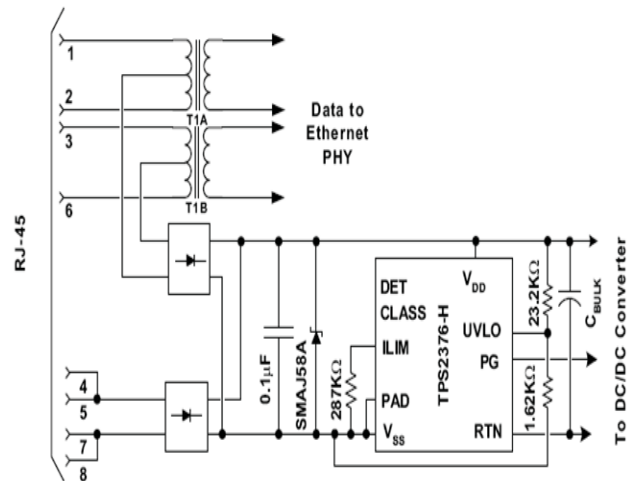


Figure 1. Typical Application Circuit