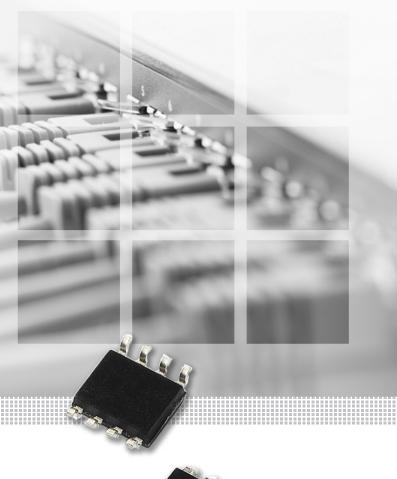


# Protection Protection Module Safeguards Sensitive Ethernet Components



Known-good Solution for Protecting Downstream PHY Chips from Damaging ESD and Lightning-induced Surge Currents

Offers both over current and differential only overvoltage protection for applications such as 10/100/1000 BaseT ports

The low loading capacitance and high surge capability makes the SP4031 ideal for protecting telecommunication ports such as Ethernet and other high speed data interfaces.

## **Target Application:**

- 10/100/1000 BaseT Ethernet
- ITU K.21 Basic level compliance
- ADSL/VDSL/G.fast modem
- Industrial Ethernet



# Hybrid Protection Module for 10/100/1000BaseT Ethernet

### **Features:**

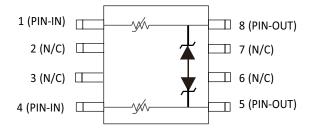
- Known-good design for overvoltage and over current events
- Through package routing, low breakdown voltage and low parasitic capacitance
- Resettable fuses, which senses over current and voltage events, and eliminates the path to the chip under protection

### **Benefits:**

- Proven, turnkey solution against overvoltage and surge
- Tuned to interact well with ethernet speeds up through 1000 Mbits
- Creates a temporary high impedance which interrupts the signal lines during a high current event.

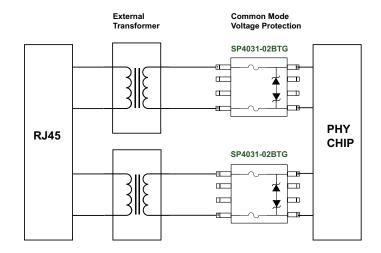
### **Functional Block Diagram**

Flow through package layout allows PCB trace routing directly through the SP4031 without changing pitch dimensions, thus having less impact on normal signal high frequency components.



### **Application Diagram Example**

During a prolonged overvoltage event such as a power fault, this component will present a high impedance. The high impedance state will reset once the power fault event has ended. During a fast transient event, the component will clamp, thus protecting any downstream chip sets.















Ordering Number	lpp (A)	Breakdown Voltage (V)	Clamping Voltage (V)	Dynamic Resistance (Ω)	V <sub>ESD</sub> Contact (kV)	Diode Capacitance (pF)	Package
SP4031-02BTG	35	4.5(Typ)	6.0(Typ)	0.45	±30	2.5(Max)	SOIC-8