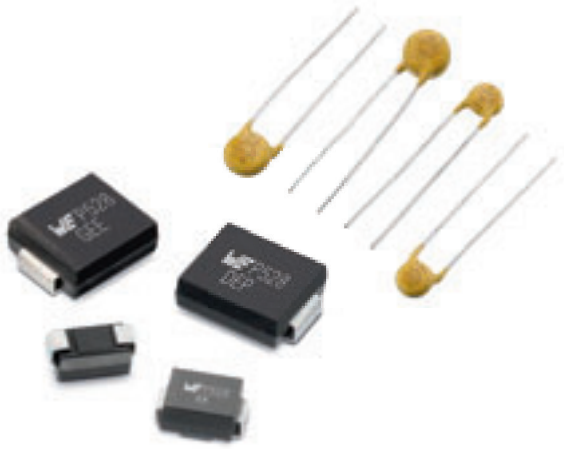
ESD and Surge Protection

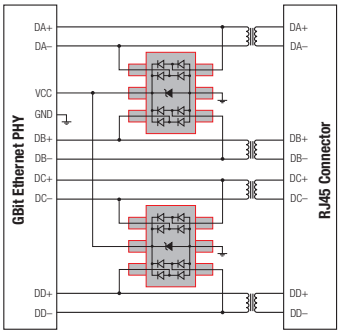
How to Determine the right Overvoltage Protection Device for your Application



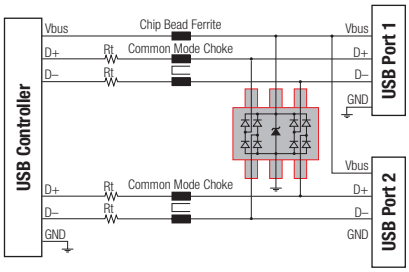
1. Determine max. operating voltage of the application (inclusive tolerances)
2. Component $V_{rms}/V_{dc} \geq$ application max V_{rms}/V_{dc}
3. Determine operating temperature (Varistor parameter has to be derated)
4. Max. allowable clamping voltage
5. Capacitance (fast datalines need low capacitance due to signal integrity)
6. Max. energy/power
7. Max. possible surge/burst/ESD-level
8. Take standards into account (e.g. Audio/Video, IEC 62368-1)

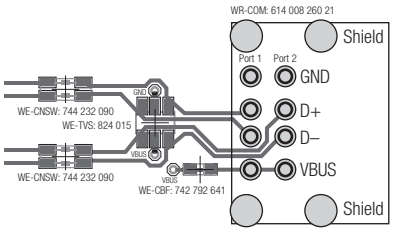
Application of High Speed TVS Diodes for ESD Protection

Ethernet 1 GBit



USB 2.0 Double Port Protection





The easy to use Flow-Thru Design – with double port connection of I/O pins