

# PORTNOTE®

# Thunderbolt<sup>™</sup> Port ESD & Overcurrent Protection

#### **Solution Products**







MF-MSMF260-2

# **Design Kit**



PN-DESIGNKIT-33

## **Objective**

Thunderbolt™ is an interface for connecting peripheral devices to a computer via an expansion bus. Thunderbolt™ is a 10 Gbps dual-channel, dual-protocol (PCI Express and DisplayPort), bidirectional port. This solution provides ESD and overcurrent protection to this hot-pluggable interface.

#### Solution

- 1 TVS Diode Array: CDDFN10-0524P
- 1 TVS Diode: CDSOD323-T05SC
- 1 Multifuse\* PPTC Resettable Fuse: MF-MSMF260-2

# **Compliance**

IEC 61000-4-2 Level 4 (8 kV / 15 kV)

### **Alternate Recommendations**

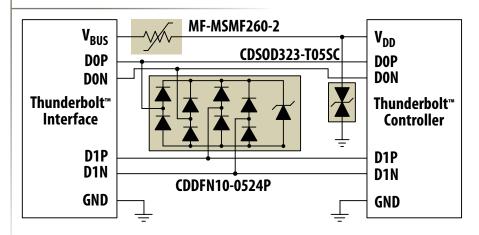
A model CDMSP10-0504M may be used and would replace both the CDDFN10-0524P and the CDSOD323-T05SC devices.

Other PortNote® Solutions:

- HDMI 1.4 ESD & Overcurrent Protection
- DisplayPort 1.2 ESD & Overcurrent Protection
- USB 3.0 ESD & Overcurrent Protection

#### Benefit

This solution provides ESD protection without impairing the Thunderbolt  $^{\text{\tiny TM}}$  signal.



The schematic above illustrates the application protection and does not constitute the complete circuit design. Customers should verify actual device performance in their specific applications.

**BOURNS**®

**Europe:** *Tel* +41-(0)41 768 55 55

Fax + 41 - (0)417685510

**Americas:** *Tel* +1-951 781-5500 *Fax* +1-951 781-5700

**Asia-Pacific:** *Tel* +886-2 256 241 17 *Fax* +886-2 256 241 16

For more information, go to:

www.bourns.com or email: protection@bourns.com

Bourns® PortNote® solutions provide protection recommendations for typical port threats.

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