

Product Summary

V_{BR} (min)	I_{PP} (max)	C_T (typ)
6V	7.5A	0.8pF

Description

The DUSBULC6-CSP4 is a high-performance device suitable for protecting two high speed I/Os. These devices are assembled in CSP packages and have high ESD surge capability and low capacitance.

Applications

Typically used at high-speed ports such as USB 2.0, IEEE1394 (Firewire®, iLink™), Serial ATA, DVI, HDMI, PCI.

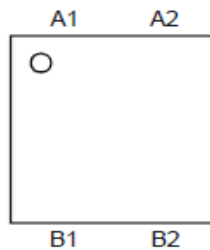
Features

- IEC 61000-4-2 (ESD): Air – ±15kV, Contact – ±15kV
- Low Channel Input Capacitance of 1.2pF Max
- 2 Channel of ESD Protection
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**

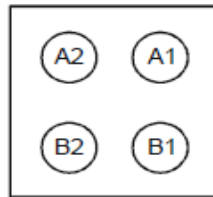
Mechanical Data

- Case: W-WLB0808-4
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Weight: 0.001 grams (Approximate)

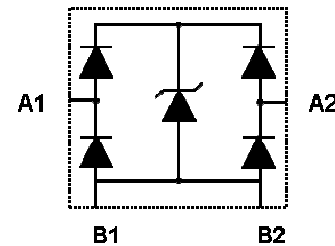
W-WLB0808-4



Top View



Bottom View



Device Schematic

Pin Configuration

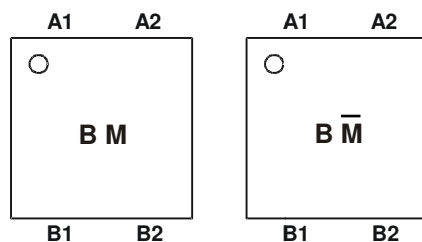
Ordering Information (Note 4)

Product	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity per Reel
DUSBULC6-CSP4-7	Standard	BM	7	8	3,000/Tape & Reel
DUSBULC6-CSP4-7B	Standard	BM	7	8	10,000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information

W-WLB0808-4



B = Product Type Marking Code
M = Month Marking Code (ex: 9 = September)
Note: "—" Represents Internal Code

Month Code Key

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	PPP	70	W	8/20μs (Note 5)
Peak Pulse Current	I _{PP}	7.5	A	8/20μs (Note 5)
ESD Protection – Contact Discharge	V _{ESD_Contact}	±15	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	V _{ESD_Air}	±15	kV	Standard IEC 61000-4-2

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Ambient Typical (Note 5)	R _{θJA}	+206	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage	V _{BR}	6	–	9	V	I _R = 1mA
Reverse Leakage Current (Note 6)	I _R	–	–	70	nA	V _R = 3V
Dynamic Impedance	R _d	–	0.35	–	Ω	I _{PP} = 1 to 5A, 8/20μs
Channel Input Capacitance	C _{IN}	–	0.8	1.2	pF	V _{IN} = 0V, f = 1MHz, V _{OSC} = 30mV

Notes: 5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes, Inc. suggested pad layout AP02001, which can be found on our website at <http://www.diodes.com>.
 6. Short duration pulse test used to minimize self-heating effect.

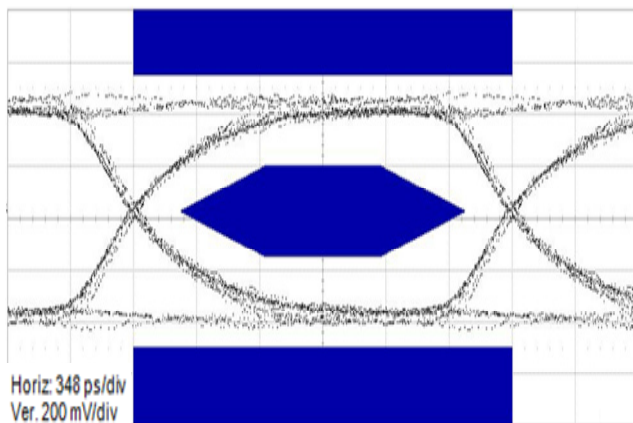


Figure 1. Eye diagram, board only (according to USB2.0 high speed specification)

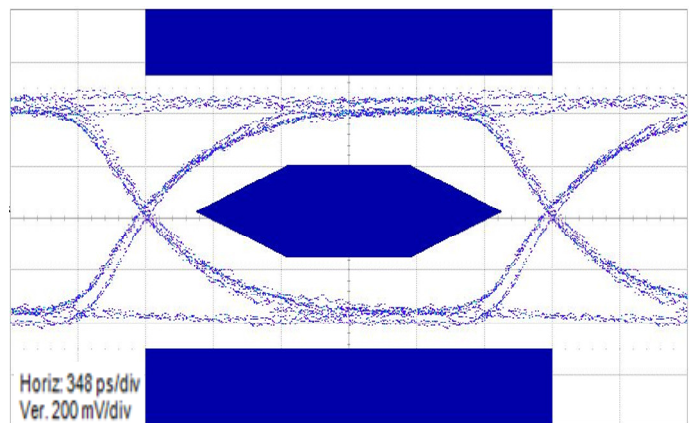


Figure 2. Eye diagram, board with DUSBULC6-CSP4 (according to USB2.0 high speed specification)

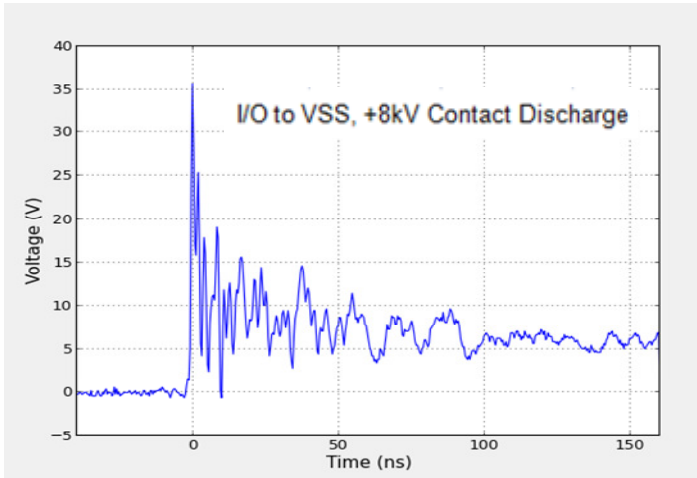


Figure 3. ESD response to IEC 61000-4-2

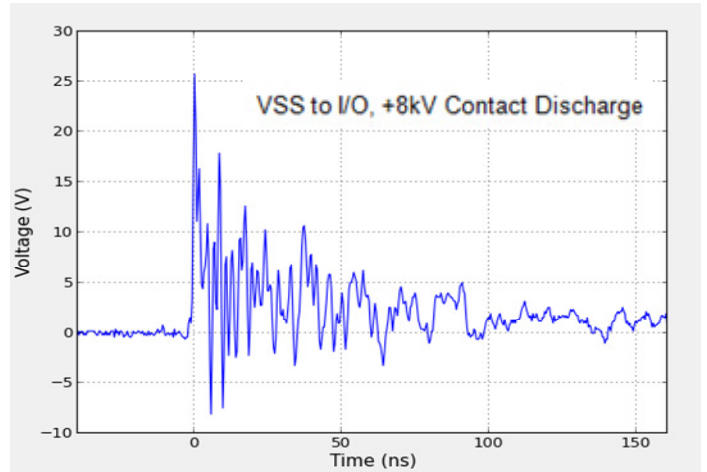


Figure 4. ESD response to IEC 61000-4-2

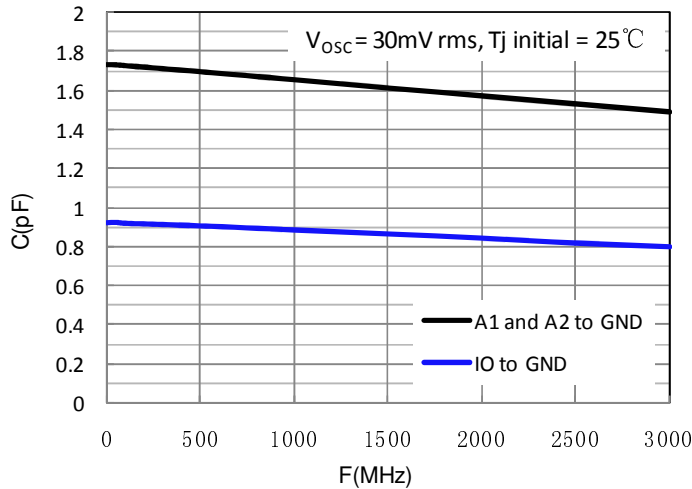


Figure 5. Junction capacitance versus frequency (typical values)

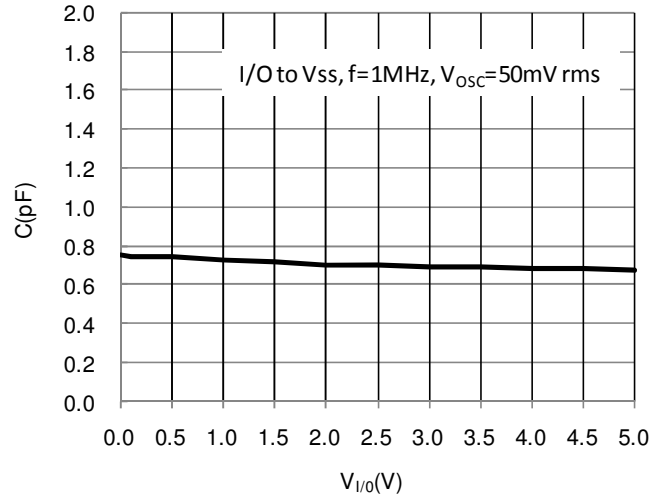


Figure 6. Junction Capacitance versus Input Voltage

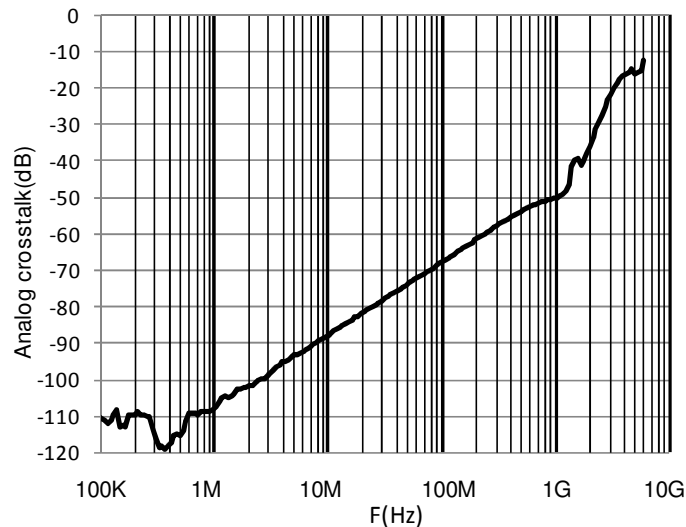


Figure 7. Analog crosstalk measurement

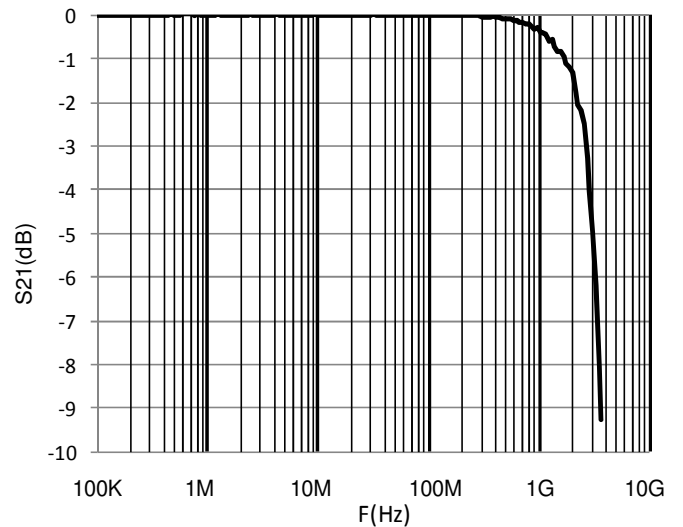


Figure 8. S21(dB) attenuation measurement

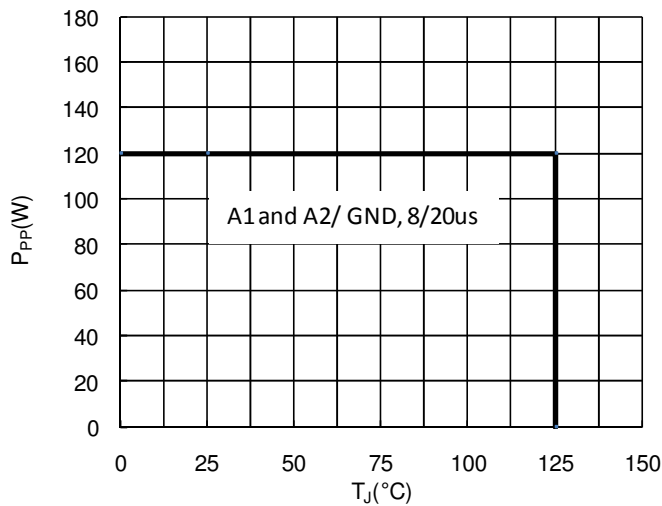


Figure 9. Peak pulse power versus initial junction temperature (maximum values, pulse 8/20us)

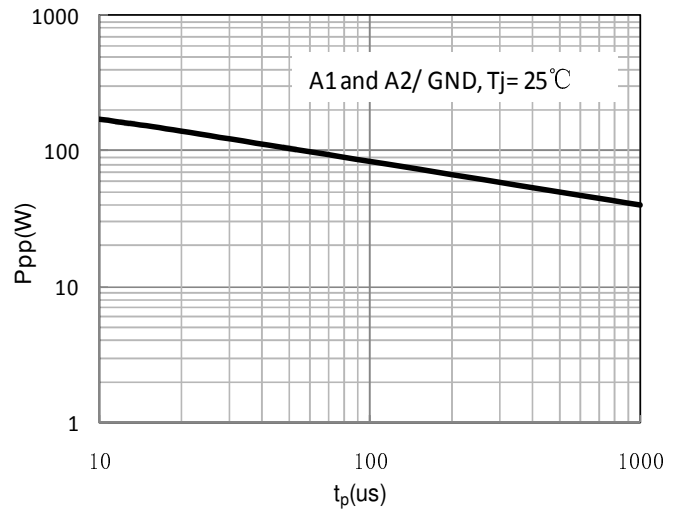


Figure 10. Peak pulse power versus exponential pulse duration (maximum values)

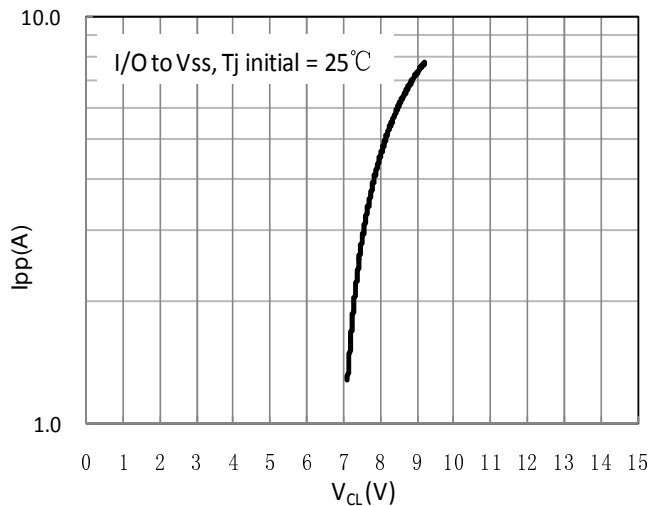


Figure 11. Clamping voltage versus peak pulse current (typical values, pulse 8/20us)

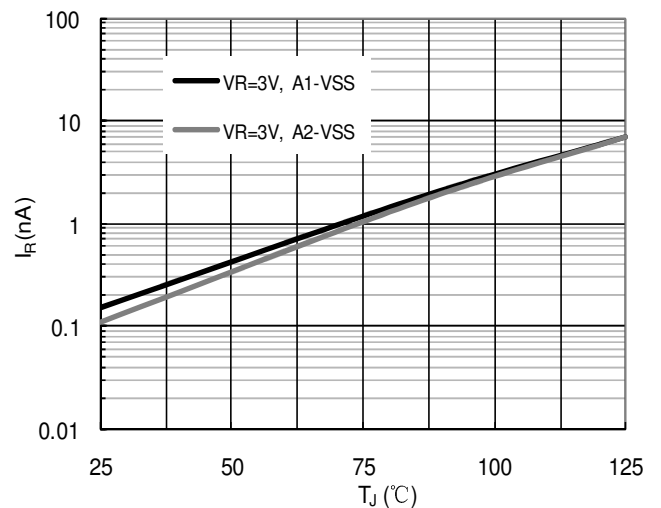


Figure 12. Leakage current versus junction temperature (typical values)

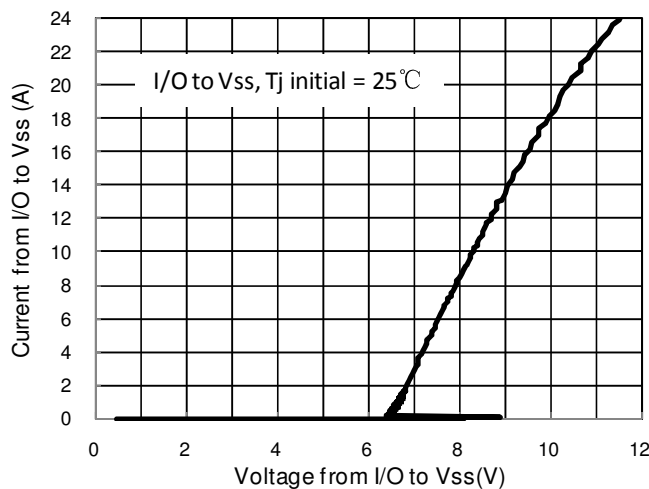


Figure 13. Current vs. Voltage

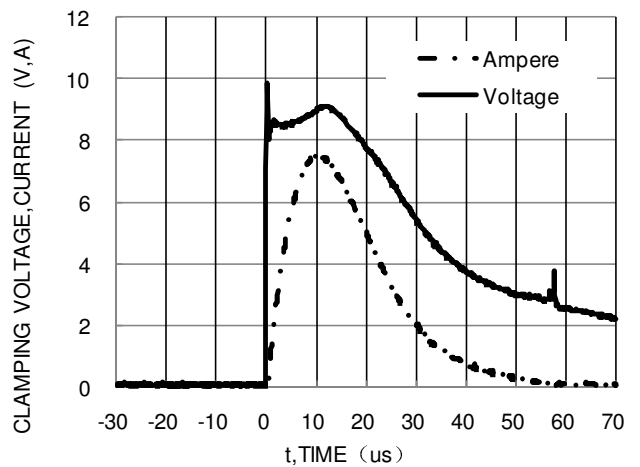
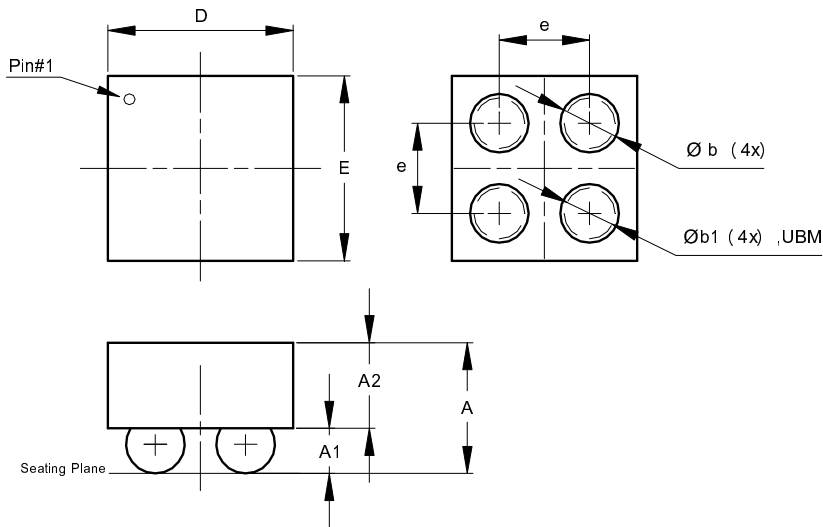


Figure 14. Waveform of Clamping Voltage, Current vs. Time (8/20us, I/O to Vss)

Package Outline Dimensions

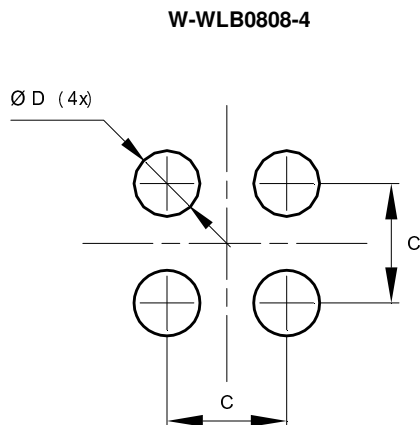
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



W-WLB0808-4			
Dim	Min	Max	Typ
A	0.545	0.665	0.605
A1	0.170	0.230	0.200
A2	0.375	0.435	0.405
b	0.240	0.280	0.260
b1	0.235	0.245	0.240
D	0.790	0.850	0.820
E	0.790	0.850	0.820
e	0.400 BSC		
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
C	0.400
D	0.220

IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes Incorporated.

LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

A. Life support devices or systems are devices or systems which:

1. are intended to implant into the body, or
2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

Copyright © 2015, Diodes Incorporated

www.diodes.com

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:

Click to view products by [Diodes Incorporated](#) manufacturer:

Other Similar products are found below :

[60KS200C](#) [D12V0H1U2WS-7](#) [D18V0L1B2LP-7B](#) [82356050220](#) [D5V0F4U5P5-7](#) [D5V0M5U6V-7](#) [NTE4902](#) [P4KE27CA](#) [P6KE11CA](#)
[P6KE39CA-TP](#) [P6KE8.2A](#) [SA110CA](#) [SA60CA](#) [SA64CA](#) [SMBJ12CATR](#) [SMBJ8.0A](#) [SMLJ30CA-TP](#) [ESD112-B1-02EL E6327](#)
[ESD119B1W01005E6327XTSA1](#) [ESD5V0J4-TP](#) [ESD5V0L1B02VH6327XTSA1](#) [ESD7451N2T5G](#) [19180-510](#) [CPDT-5V0USP-HF](#)
[3.0SMCJ33CA-F](#) [3.0SMCJ36A-F](#) [HSPC16701B02TP](#) [D3V3Q1B2DLP3-7](#) [D55V0M1B2WS-7](#) [DESD5V0U1BL-7B](#) [DRTR5V0U4SL-7](#)
[SCM1293A-04SO](#) [ESD203-B1-02EL E6327](#) [SM12-7](#) [SMF8.0A-TP](#) [SMLJ45CA-TP](#) [CEN955 W/DATA](#) [82350120560](#) [82356240030](#)
[VESD12A1A-HD1-GS08](#) [CPDUR5V0R-HF](#) [CPDUR24V-HF](#) [CPDQC5V0U-HF](#) [CPDQC5V0USP-HF](#) [CPDQC5V0-HF](#) [D1213A-01LP4-7B](#)
[D1213A-02WL-7](#) [ESDLIN1524BJ-HQ](#) [5KP100A](#) [5KP15A](#)