



2 CHANNEL LOW CAPACITANCE TVS DIODE ARRAY

Features

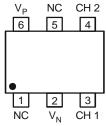
- IEC 61000-4-2 (ESD): Air ±15kV, Contact ±8kV
- 2 Channels of ESD Protection
- Low Channel Input Capacitance of 0.85pF Typical
- Typically Used at High Speed Ports such as USB 2.0, IEEE1394, Serial ATA, DVI, HDMI, PCI
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

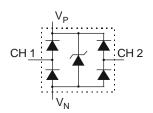
- Case: SOT26
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Copper leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 @3
- Weight: 0.016 grams (approximate)







Pin Configuration



Device Schematic

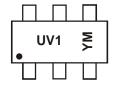
Ordering Information (Note 4)

Part Number	Case	Packaging
D1213A-02SO-7	SOT26	3000/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 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.

Marking Information



UV1 = Product Type Marking Code YM = Date Code Marking Y = Year (ex: Z = 2012) M = Month (ex: 9 = September)

Date Code Key

- Date Code Hoj												
Year	201	2	2013		2014	20)15	2016		2017		2018
Code	Z		Α		В		С	D		Е		F
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D



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

Characteristic	Symbol	Value	Unit	Conditions
Operating Supply Voltage	V _P - V _N	6.0	V	_
DC Voltage at any Channel Input	-	$(V_N - 0.5)$ to $(V_P + 0.5)$	V	_
Peak Pulse Current	I _{PP}	5	Α	8/20µs, Per Figure 3
ESD Protection – Contact Discharge	V _{ESD_Contact}	±8	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
Power Dissipation (Note 5)	P _D	400	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{ hetaJA}$	310	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

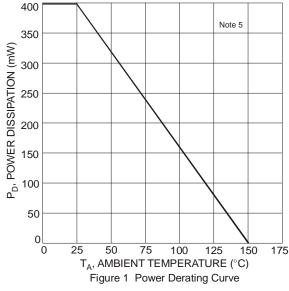
Electrical Characteristics (@T_A = +25°C, unless otherwise specified)

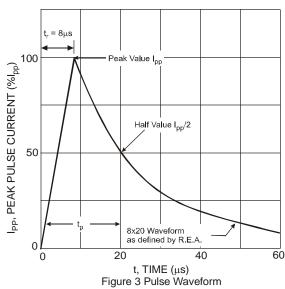
Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Operating Supply Voltage	V_{P}	_	3.3	5.5	V	_
Operating Supply Current (Note 6)	IР	_	_	8.0	μA	$(V_P - V_N) = 3.3V$
Channel Leakage Current (Note 6)	I _R	_	±0.1	±1.0	μΑ	$V_P = 5V$, $V_N = 0V$
Reverse breakdown voltage	V_{BR}	6.0	_	_	V	$I_R = 1mA$
Clamping Voltage, Positive Transients	V _{CL1}	_	10.0	_	V	$I_{PP} = 1A, t_p = 8/20 \mu s$
Clamping Voltage, Negative Transients	V _{CL2}	_	-1.7	_	V	$I_{PP} = -1A$, $t_p = 8/20 \mu s$
Forward Voltage for Top Diode	V _{FD1}	0.60	0.80	0.95	V	$I_F = 8mA$, CH1 to V_P or CH2 to V_P
Forward Voltage for Bottom Diode	V_{FD2}	0.60	0.80	0.95	V	$I_F = 8mA$, V_N to CH1 or V_N to CH2
Dynamic Resistance	R _{DYN}	_	0.9	_	Ω	$I_{PP} = 1A, t_p = 8/20 \mu s$
Channel Input Capacitance	C _T	_	0.85	1.2	pF	$V_{IN} = 1.65V, V_P = 3.3V, V_N = 0V, f = 1MHz$

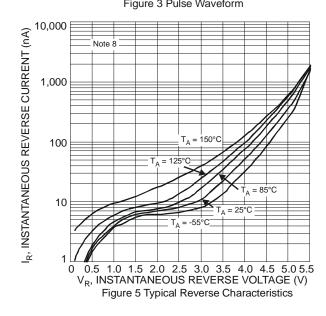
Notes:

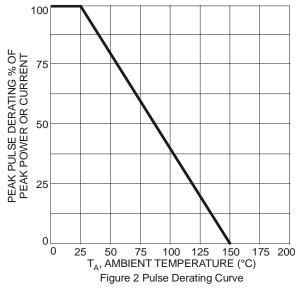
- 5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes, Inc. suggested pad layout AP02001, which can be found on our website at http://www.diodes.com.
- 6. Short duration pulse test used to minimize self-heating effect.
- 7. Measured from CH1 to Vn or CH2 to Vn.
- 8. Measured from $\ensuremath{V_P}$ to $\ensuremath{V_N}.$
- 9. For information on the impact of Diodes' USB 2.0 compatible ESD protectors on signal integrity including eye diagram plots, please refer to AN77 at the following URL: http://www.diodes.com/destools/appnote_dnote.html.

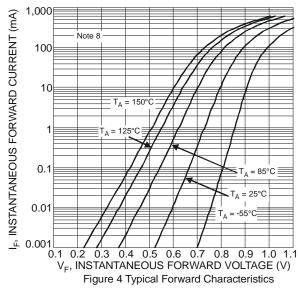












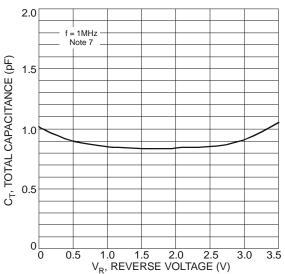
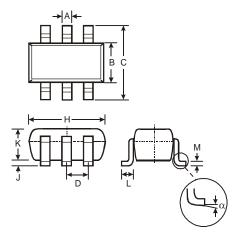


Figure 6 Typical Total Capacitance vs. Reverse Voltage



Package Outline Dimensions

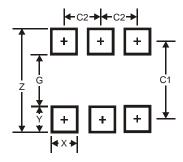
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



	SOT26							
Dim	Min	Max	Тур					
Α	0.35	0.50	0.38					
В	1.50	1.70	1.60					
С	2.70	3.00	2.80					
D	_	_	0.95					
Н	2.90	3.10	3.00					
J	0.013	0.10	0.05					
K	1.00	1.30	1.10					
L	0.35	0.55	0.40					
М	0.10	0.20	0.15					
α	0°	8°	_					
All D	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)
Z	3.20
G	1.60
X	0.55
Y	0.80
C1	2.40
C2	0.95



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