



1 CHANNEL LOW CAPACITANCE TVS DIODE ARRAY

Features

- IEC 61000-4-2 (ESD): Air 15kV, Contact 8kV
- 1 Channel of ESD protection
- Low Channel Input Capacitance of 1.0pF 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)

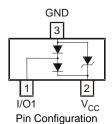
Mechanical Data

- Case: SOT23
- 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 Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Weight: 0.0089 grams (approximate)





Top View



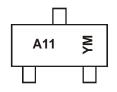
Ordering Information (Note 4)

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	Product	Compliance	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
	DRTR5V0U1SO-7	AEC-Q101	A11	7	8	3,000/Tape & Reel

Notes:

- 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- 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



A11 = Product Type Marking Code YM = Date Code Marking Y = Year (ex: A = 2013) M = Month (ex: 9 = September)

Date Code Key

Year	2013	3	2014		2015	20	16	2017		2018		2019
Code	Α		В		С			Е		F		G
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
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

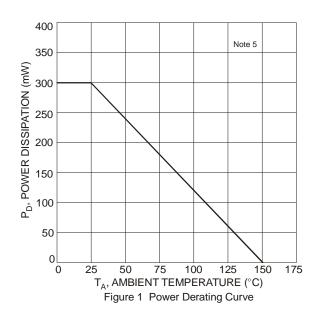
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	300	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	417	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

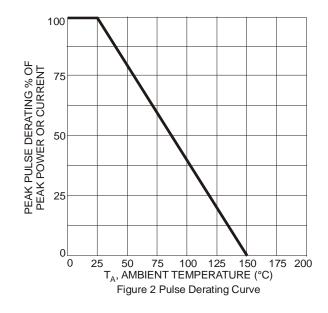
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Reverse Standoff Voltage	V_{RWM}	_	_	5.5	V	_
Channel Leakage Current (Note 6, 7)	I _R	_	1	100	nA	$V_R = 3V$
Reverse breakdown voltage	V_{BR}	6.0	_	9.0	V	I _R = 1mA, from pin 2 to pin 3
Forward Voltage	V _F	_	0.8	_	V	I _F = 8mA
Dynamic Resistance	R _{DYN}	_	0.9	_	Ω	$I_{PP} = 1A, t_p = 8/20\mu s$
I/O to GND Capacitance	C _(I/O-GND)	_	1.0	1.5	pF	$V_{(I/O-GND)} = 0V, f = 1MHz$

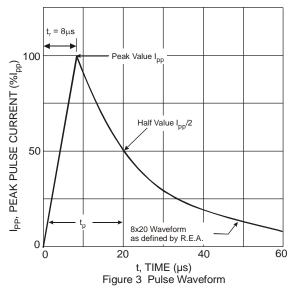
Notes:

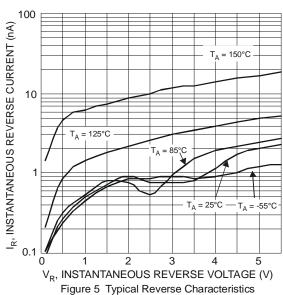
- 5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes, Inc. suggested pad layout AP02001, which can be found on our website at http://www.diodes.com.
- 6. Short duration pulse test used to minimize self-heating effect.
- 7. Measured from pin 1 and pin 2 to GND.
- 8. For information 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.

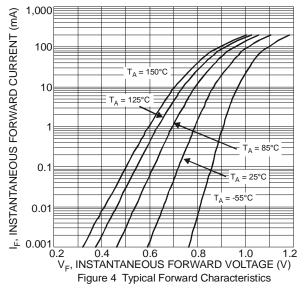












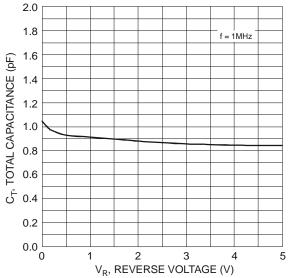
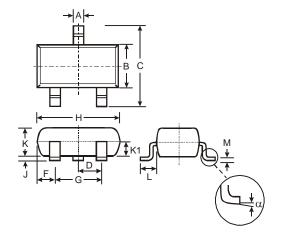


Figure 6 Typical Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

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

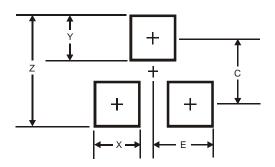


SOT23							
Dim	Min	Max	Тур				
Α	0.37	0.51	0.40				
В	1.20	1.40	1.30				
C	2.30	2.50	2.40				
D	0.89	1.03	0.915				
F	0.45	0.60	0.535				
G	1.78	2.05	1.83				
Η	2.80	3.00	2.90				
7	0.013	0.10	0.05				
K	0.903	1.10	1.00				
K1	-	-	0.400				
٦	0.45	0.61	0.55				
M	0.085	0.18	0.11				
α	0°	8°	-				
All 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	2.9
Х	0.8
Υ	0.9
С	2.0
E	1.35

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