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DRTR5V0U2SO

2 CHANNEL LOW CAPACITANCE TVS DIODE ARRAY

Product Summary

V_{BR} (Min)	I_{PP} (Max)	C_T (Typ)
6V	6A	1.0pF

Description

This new generation TVS is designed to protect sensitive electronics from the damage due to ESD. The combination of small size and high ESD surge capability makes it ideal for use in portable applications such as cellular phones, digital cameras, and MP3 players.

Applications

- Cellular Handsets
- Portable Electronics
- Computers and Peripheral

Features

- Provides ESD Protection per IEC 61000-4-2 Standard: Air ±30kV, Contact ±25kV
- 2 Channels of ESD Protection
- Low Channel Input Capacitance
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**

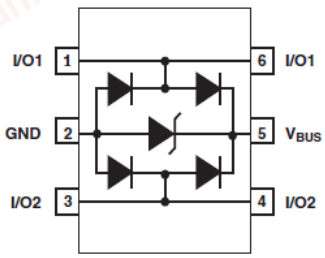
Mechanical Data

- 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 e3
- Weight: 0.016 grams (Approximate)

SOT26



Top View



Device Schematic

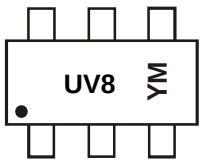
Ordering Information (Note 4)

Part Number	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Packaging
DRTR5V0U2SO-7	Standard	UV8	7	8	3,000/Tape & Reel

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See https://www.diodes.com/quality/lead-free/ 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 https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information

SOT26



UV8 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: H = 2020)
M = Month (ex: 9 = September)

Date Code Key

Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Code	H	I	J	K	L	M	N	O	P	R	S	T

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

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

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Current	I_{PP}	6	A	8/20µs (Note 7)
ESD Protection – Contact Discharge	$V_{ESD_Contact}$	±25	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	V_{ESD_Air}	±30	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 T_A = +25°C	$R_{\theta JA}$	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	Typ	Max	Unit	Test Conditions
Reverse Standoff Voltage	V_{RWM}	—	—	5.5	V	—
Channel Leakage Current (Note 6)	I_R	—	1	100	nA	V_R = 5V, Any I/O to GND
Reverse Breakdown Voltage	V_{BR}	6.0	—	9.0	V	IR = 1mA, from pin 5 to pin 2
Clamping Voltage, Positive Transients (Note 7)	V_C	—	10	12	V	I_{PP} = 1A, t_P = 8/20µs
			16.5	19		I_{PP} = 6A, t_P = 8/20µs
Channel Input Capacitance (Note 8)	C_T	—	1.0	1.5	pF	V_R = 0V, f = 1MHz, Any I/O to GND
Dynamic Resistance	R_{DYN}	—	0.9	—	Ω	I_{PP} = 1A, t_P = 8/20µs

Notes:
5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes Incorporated suggested pad layout, which can be found on our website at http://www.diodes.com.
6. Short duration pulse test used to minimize self-heating effect.
7. Clamping voltage value is based on an 8x20µs peak pulse current (I_{PP}) waveform.
8. Measured from any I/O to GND.
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.

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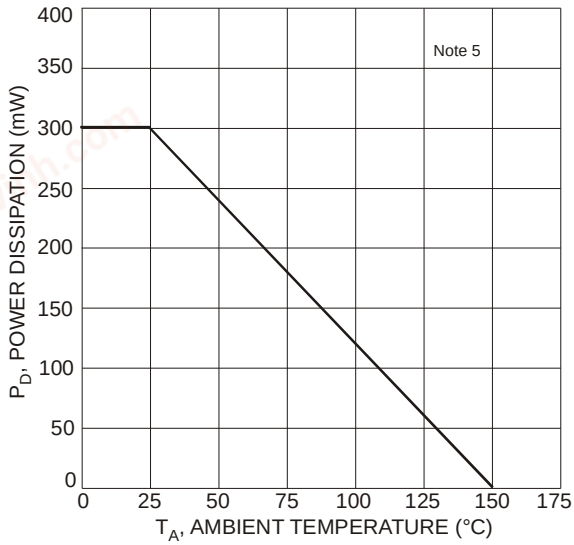


Figure 1 Power Derating Curve

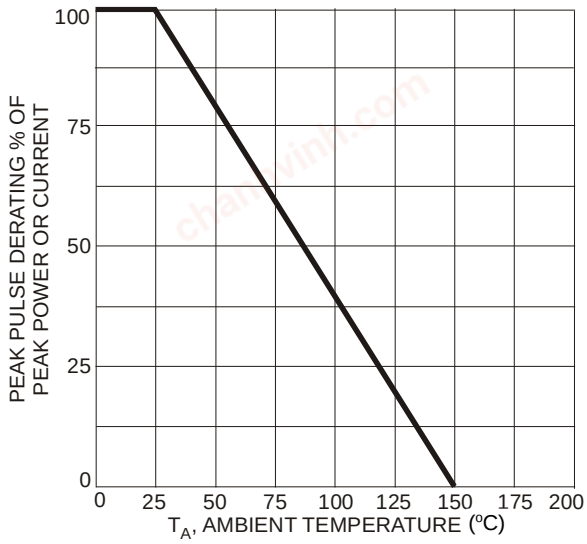


Figure 2 Pulse Derating Curve

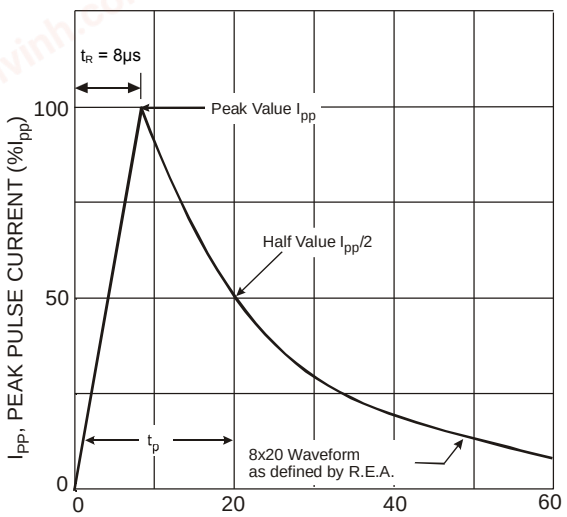


Figure 3 Pulse Waveform

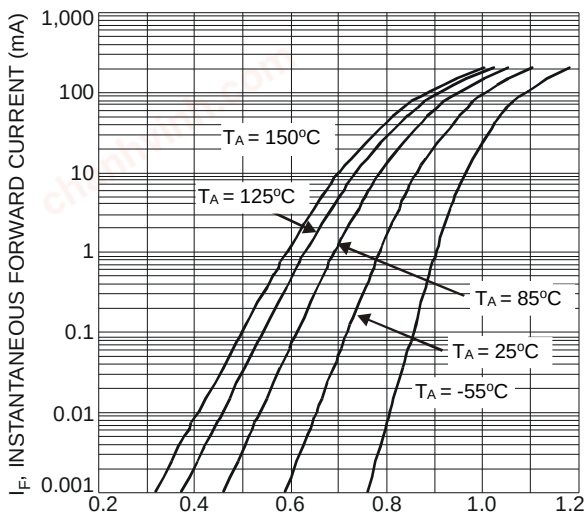


Figure 4 Typical Forward Characteristics

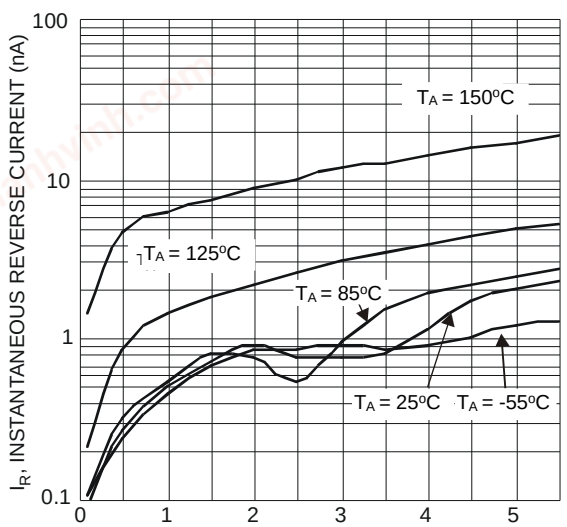


Figure 5 Typical Reverse Characteristics

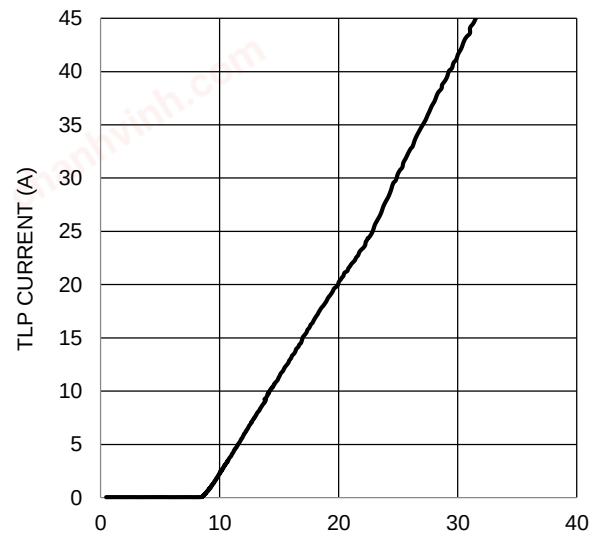


Figure 6 TLP Curve, Pin5 to Pin2 (t_P = 100ns)

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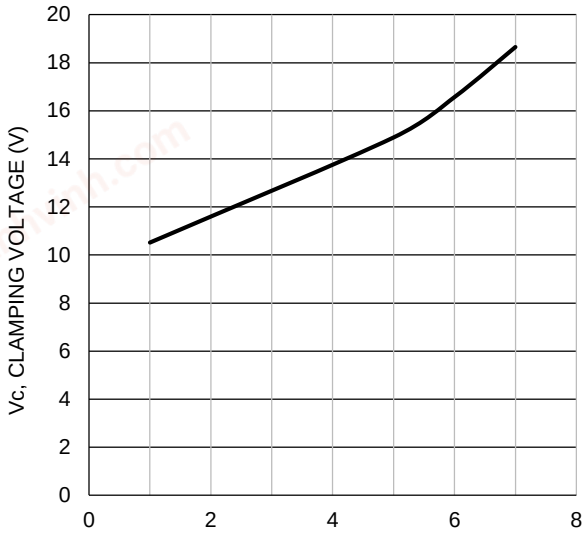


Figure 7 Clamping Voltage Characteristic (t_P = 8/20µs)

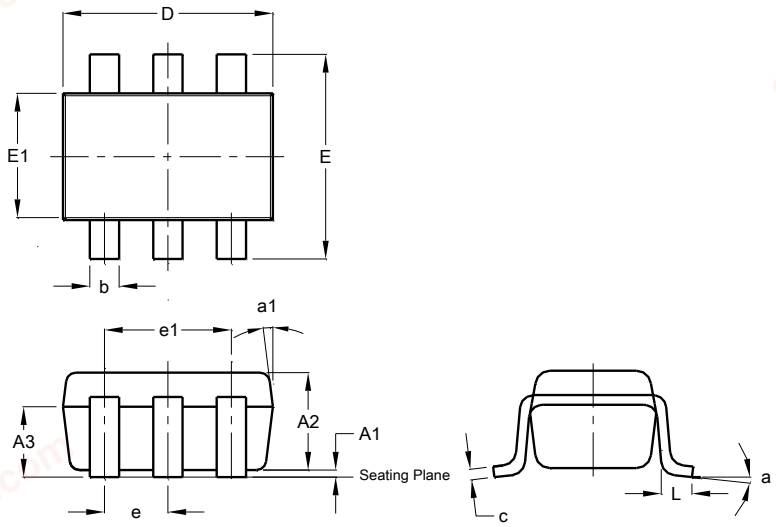
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Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT26

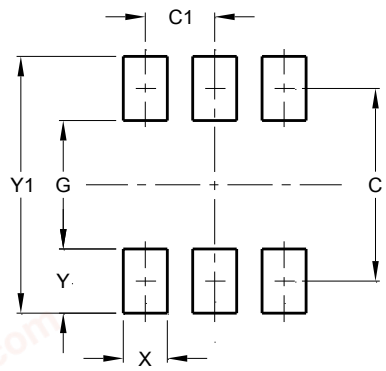


SOT26 (SC74R)			
Dim	**Min**	**Max**	**Typ**
A1	0.013	0.10	0.05
A2	1.00	1.30	1.10
A3	0.70	0.80	0.75
b	0.35	0.50	0.38
c	0.10	0.20	0.15
D	2.90	3.10	3.00
e	-	-	0.95
e1	-	-	1.90
E	2.70	3.00	2.80
E1	1.50	1.70	1.60
L	0.35	0.55	0.40
a	-	-	8°
a1	-	-	7°
All Dimensions in mm			

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOT26



Dimensions	Value (in mm)
C	2.40
C1	0.95
G	1.60
X	0.55
Y	0.80
Y1	3.20

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