Product Summary

V_{BR} Min	I_{PP} Max	C_T Typ
24V	130A	900pF

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

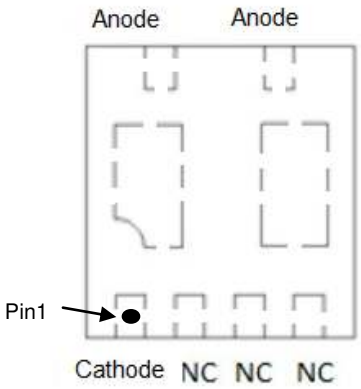
- Cellular Handsets
- Portable Electronics
- Computers and Peripheral

Features

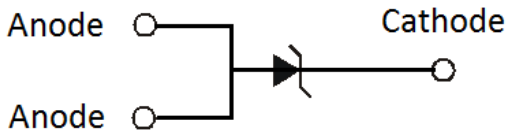
- Provides ESD Protection Per IEC 61000-4-2 Standard: Air ±30kV, Contact ±30kV
- One Channel of ESD Protection
- Low Channel Input Capacitance
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: U-DFN1820-6
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: NiPdAu over Copper Leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 e4
- Weight: 0.004 grams (Approximate)



Top View



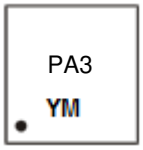
Device Schematic
The two anode pins should be electrically connected at the PCB.

Ordering Information (Note 4)

Part Number	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity Per Reel
D22V0S1U6LP2018-7	Standard	PA3	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



PA3 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: F = 2018)
M = Month (ex: 9 = September)

Date Code Key

Year	2018	2019	2020	2021	2022	2023
Code	F	G	H	I	J	K

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	P_{PP}	5460	W	8/20µs, Per Figure 2
Peak Pulse Current	I_{PP}	130	A	8/20µs, Per Figure 2
ESD Protection – Contact Discharge	$V_{ESD\_CONTACT}$	±30	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
Package Power Dissipation (Note 5)	P_D	900	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	150	°C/W
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-65 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Working Voltage	V_{RWM}	—	—	22	V	—
Reverse Current (Note 6)	I_R	—	—	1	µA	$V_R = V_{RWM}$
Reverse Breakdown Voltage	V_{BR}	24	—	27	V	I_R = 1mA
Reverse Clamping Voltage	V_{CL}	—	—	30	V	I_{PP} = 10A, t_P = 8/20µs
		—	—	32		I_{PP} = 50A, t_P = 8/20µs
		—	—	35		I_{PP} = 100A, t_P = 8/20µs
		—	—	42		I_{PP} = 130A, t_P = 8/20µs
Capacitance	C_T	—	900	—	pF	V_R = 0V, f = 1MHz

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

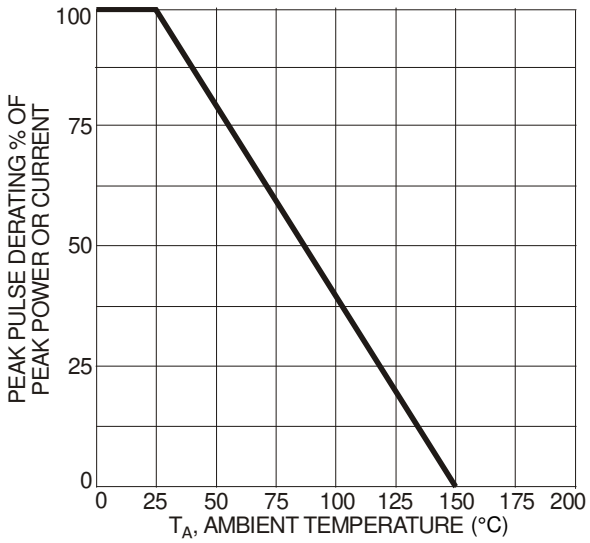


Figure 1 Pulse Derating Curve

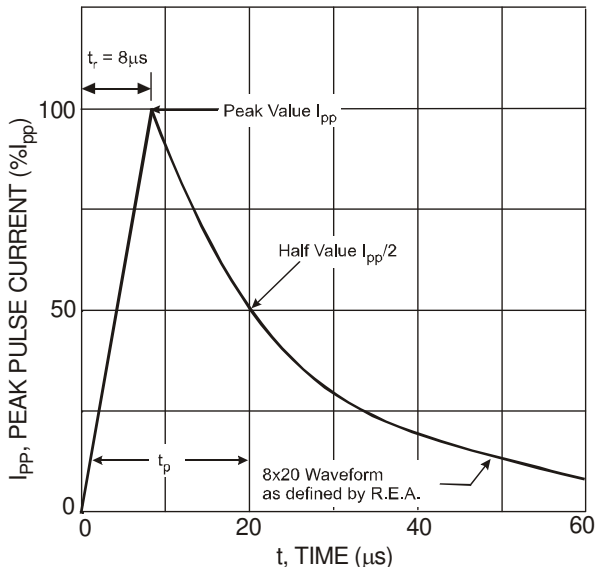


Figure 2 Typical 8 × 20μs Pulse Waveform

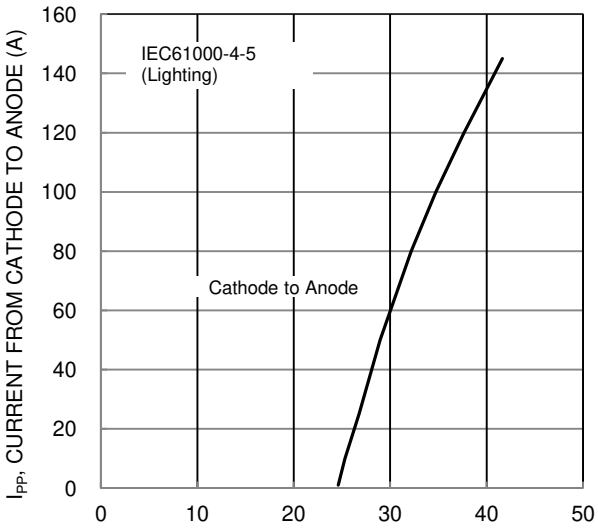


Figure 3 Clamping Voltage Characteristic

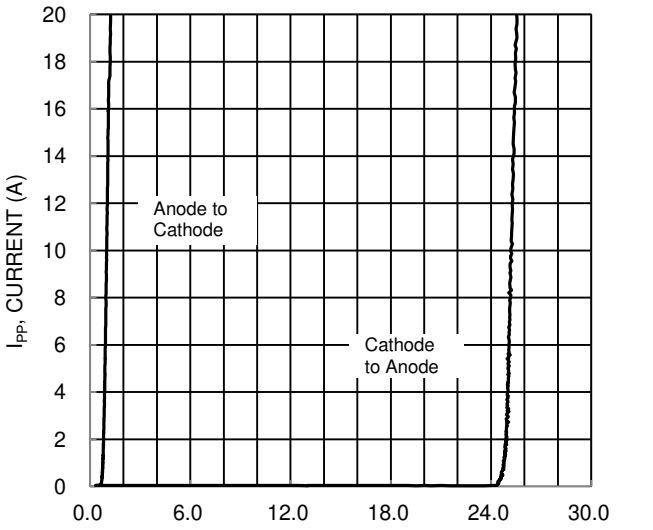
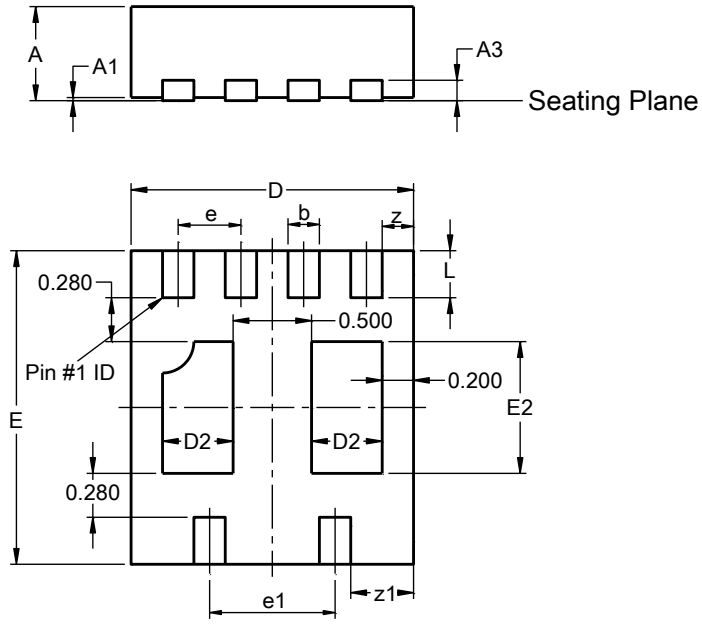


Figure 4 Current vs. Voltage TLP

Package Outline Dimensions

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

U-DFN1820-6 (Type A)

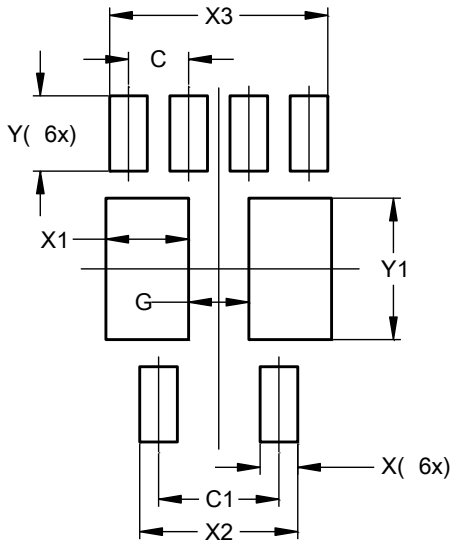


U-DFN1820-6 (Type A)			
Dim	**Min**	**Max**	**Typ**
A	0.525	0.625	0.575
A1	0.00	0.05	0.02
A3	--	--	0.13
b	0.15	0.25	0.20
D	1.75	1.85	1.80
D2	0.35	0.55	0.45
E	1.95	2.05	2.00
E2	0.74	0.94	0.84
e	--	--	0.40
e1	--	--	0.80
L	0.25	0.35	0.30
z	--	--	0.20
z1	--	--	0.40
All Dimensions in mm			

Suggested Pad Layout

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

U-DFN1820-6 (Type A)



Dimensions	Value (in mm)
C	0.40
C1	0.80
G	0.40
X	0.25
X1	0.55
X2	1.05
X3	1.45
Y	0.50
Y1	0.94

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