2 CHANNEL LOW CAPACITANCE TVS DIODE ARRAY

Product Summary

V_{BR} (Min)	I_{PP} (Max)	C_T (Typ)
6V	1.5A	0.5pF

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

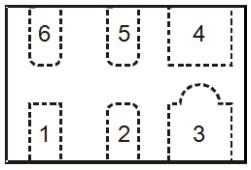
Features

- Low Profile Package (0.61mm max) and Ultra-Small PCB Footprint Area (1.68 × 1.08mm max) Suitable for Compact Portable Electronics
- Provides ESD Protection per IEC 61000-4-2 Standard: Air ±15kV, Contact ±15kV
- 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-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**

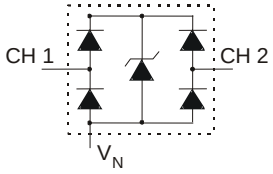
Mechanical Data

- Package: U-DFN1610-6
- Package 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. Solderable per MIL-STD-202, Method 208 e4
- Weight: 0.003 grams (Approximate)

Pin #	Function
1, 2	Input
5, 6	No Connection
3, 4	Ground



Pin Description (Top View)



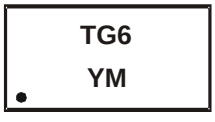
Device Schematic

Ordering Information (Note 4)

Part Number	Package	Marking	Reel Size (inches)	Tape Width (mm)	Packing	
					Qty.	Carrier
D5V0F2U6LP-7	U-DFN1610-6	TG6	7	8	3000	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



TG6 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: L = 2024)
M = Month (ex: 6 = June)

Date Code Key

Year	2014	-	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Code	B	-	L	M	N	P	R	S	T	U	V	W

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 Current	I_{PP}	1.5	A	8/20µs (Note 7)
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
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}	-55 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	—	—	100	nA	V_R = 5V, Any I/O to GND
Reverse Breakdown Voltage	V_{BR}	6.0	—	—	V	I_R = 1mA
Clamping Voltage, Positive Transients (Note 7)	V_C	—	10	12	V	I_{PP} = 1A, t_p = 8/20µs
Channel Input Capacitance (Note 8)	C_T	—	0.5	—	pF	V_R = 0, f = 1MHz, Any I/O to GND
		—	0.4	0.65		V_R = 2.5V, 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's suggested pad layout, which can be found on our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.
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.

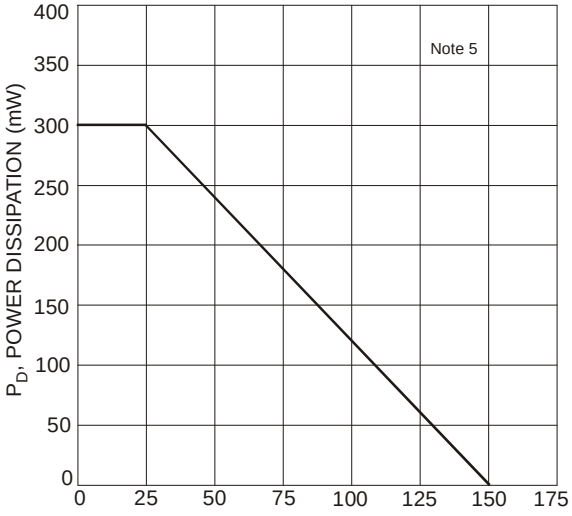


Figure 1 Power Derating Curve

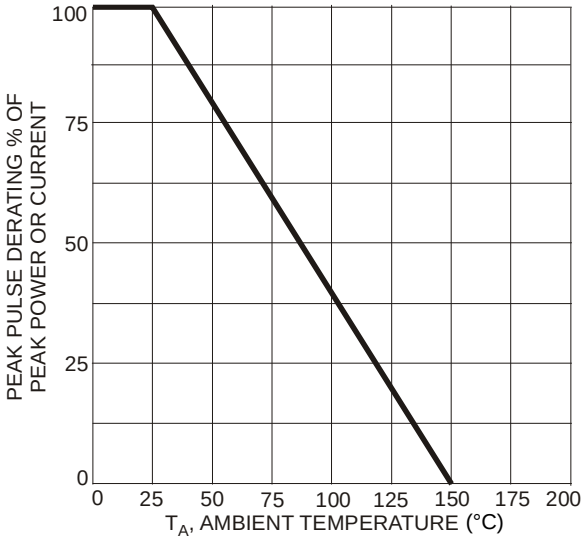


Figure 2 Pulse Derating Curve

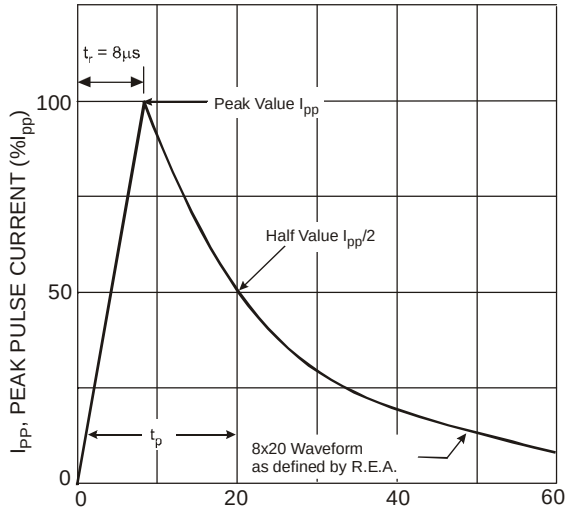


Figure 3 Pulse Waveform

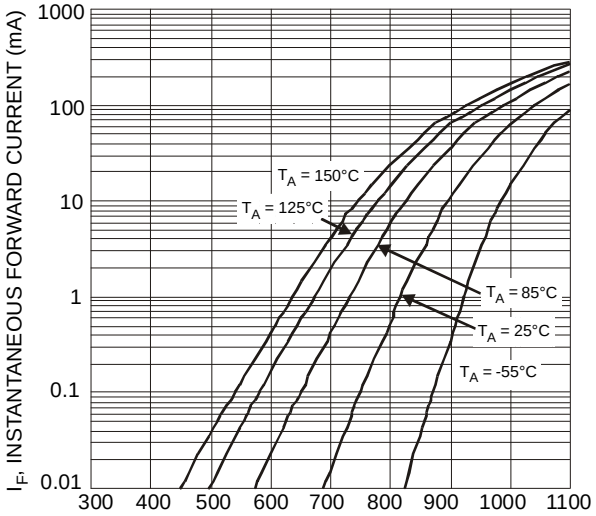


Figure 4 Typical Forward Characteristics

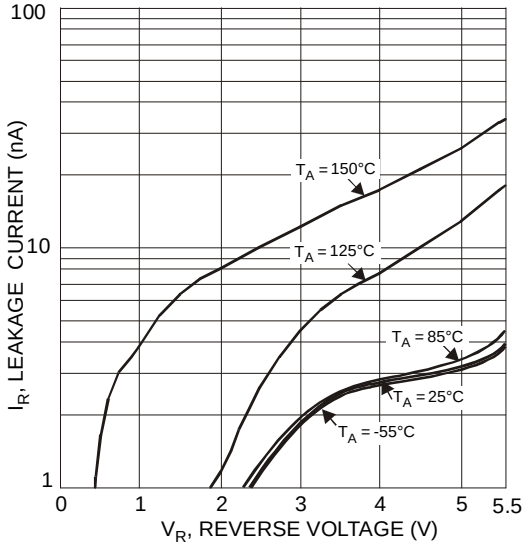


Figure 5 Typical Reverse Characteristics

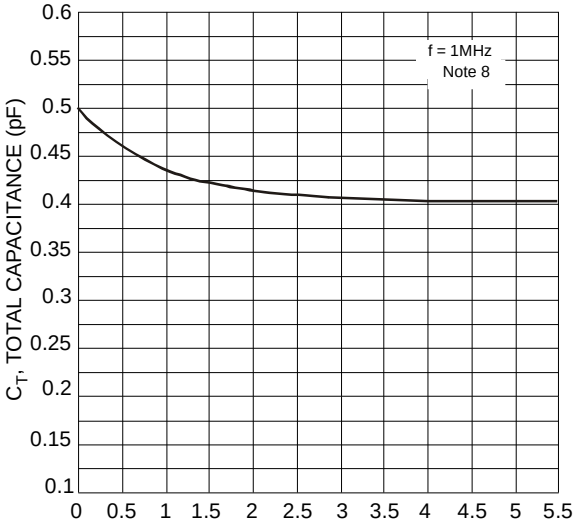


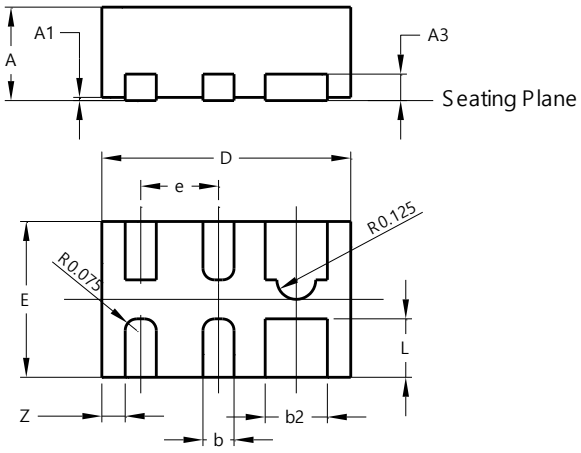
Figure 6 Total Capacitance vs. Reverse Voltage

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 https://www.diodes.com/design/support/packaging/diodes-packaging/.
8. Measured from any I/O to GND.

Package Outline Dimensions

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

U-DFN1610-6

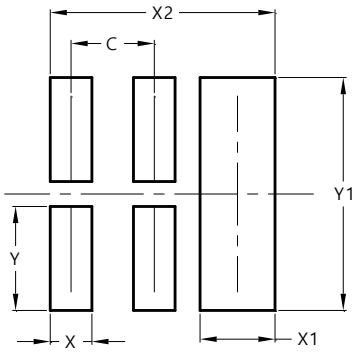


U-DFN1610-6			
Dim	**Min**	**Max**	**Typ**
A	0.545	0.605	0.575
A1	0.00	0.05	0.03
A3	-	-	0.13
b	0.15	0.25	0.20
b2	0.35	0.45	0.40
D	1.550	1.675	1.600
E	0.950	1.075	1.000
e	0.50 BSC		
L	0.325	0.425	0.375
z	-	-	0.150
All Dimensions in mm			

Suggested Pad Layout

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

U-DFN1610-6



Dimensions	Value (in mm)
C	0.500
X	0.250
X1	0.450
X2	1.350
Y	0.625
Y1	1.400

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