

2-Line Ultra Low Capacitance TVS Diode Array

Features

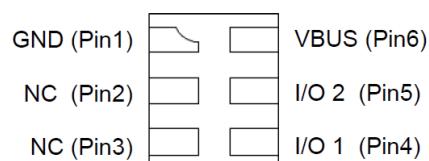
- IEC 61000-4-2 (ESD) $\pm 17\text{kV}$ (air), $\pm 15\text{kV}$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 3A (8/20 μs)
- Ultra low capacitance
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage

Applications

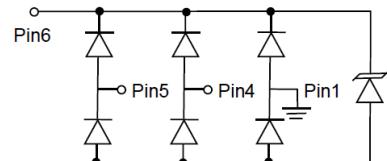
- Video Interface
- USB Ports
- Digital Lines
- Digital Visual Interface

Mechanical Characteristics

- Package: DFN1109-6L
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 1 per J-STD-020
- RoHS Compliant

Schematic & PIN Configuration

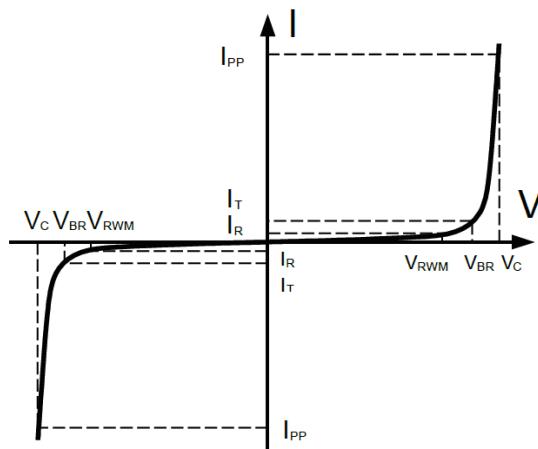
DFN1109-6L

Circuit Diagram**Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless otherwise noted)**

Parameter	Symbol	Value	Unit
Peak Pulse Power ($tp = 8/20\mu\text{s}$)	P_{PP}	90	W
Peak Pulse Current ($tp = 8/20\mu\text{s}$)	I_{PP}	3	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 17	KV
ESD per IEC 61000-4-2 (Contact)		± 15	KV
Operating Temperature Range	T_J	-40 to + 125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to + 150	$^\circ\text{C}$

Electrical Parameters ($T_A = 25^\circ C$ Unless otherwise noted)

Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Reverse Stand-Off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current

Electrical Characteristics ($T_A = 25^\circ C$ Unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage	V_{RWM}				5	V
Reverse breakdown Voltage	V_{BR1}	$I_T = 1\text{mA}$	6			V
Reverse leakage current	I_R	$V_{RWM} = 5\text{V}$			100	nA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}, t_P = 8/20\mu\text{s}$, Any I/O pin to ground			18	V
Clamping Voltage	V_C	$I_{PP} = 3\text{A}, t_P = 8/20\mu\text{s}$, Any I/O pin to ground			30	V
Junction capacitance	C_J	$V_R = 0\text{V}, f = 1\text{MHz}$, Any I/O pin to ground		0.25		pF

Typical Performance Characteristics ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

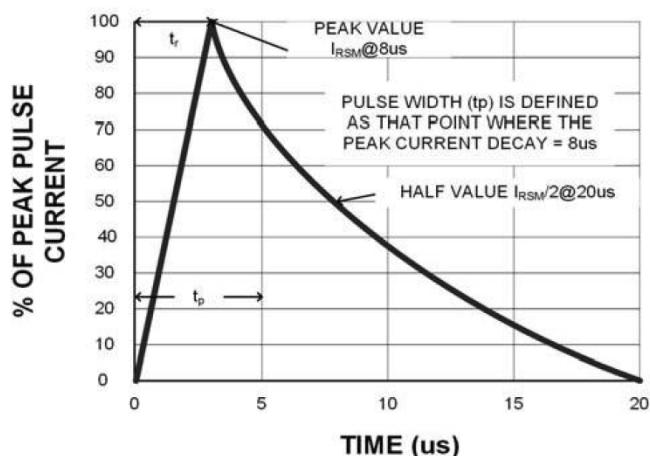


Fig 1. 8 X 20 μs Pulse Waveform

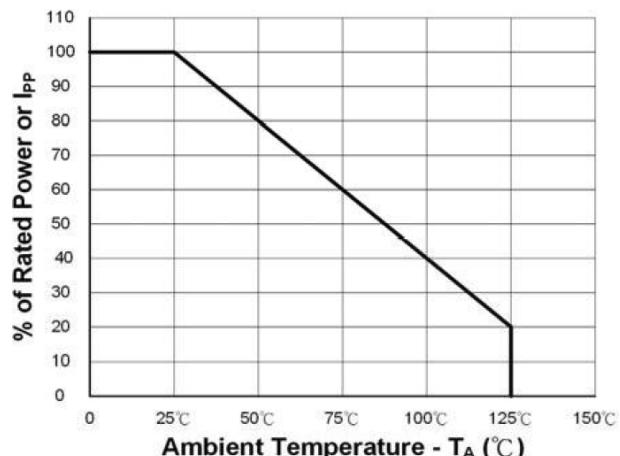


Fig 2. Power Derating Curve

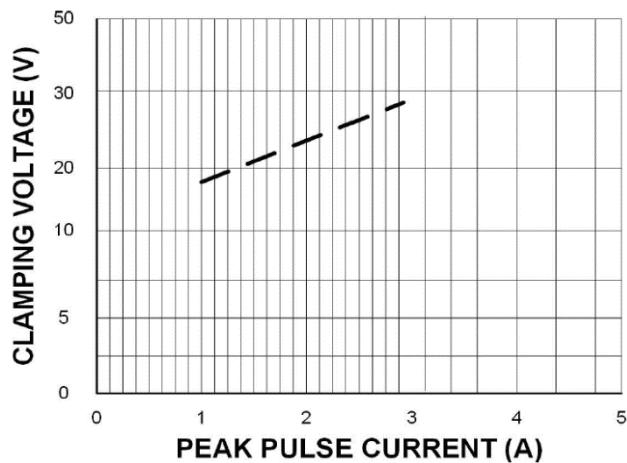


Fig 3. Clamping Voltage vs. Peak Pulse Current

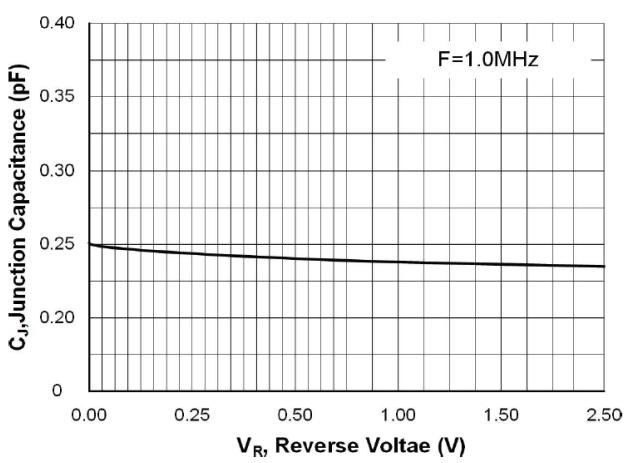


Fig 4. Typic Capacitance vs. Reverse Voltage

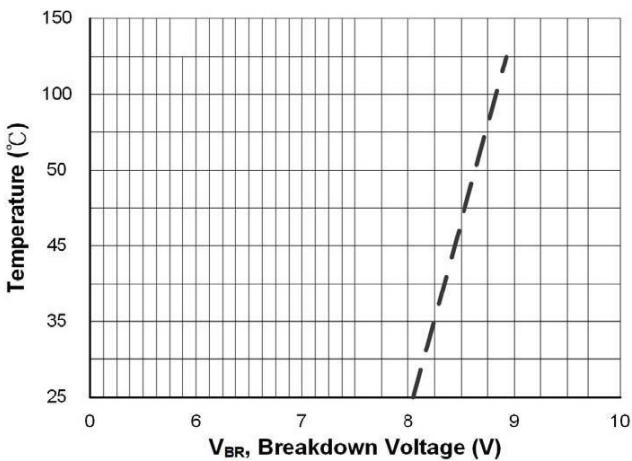


Fig 5. Typic Breakdown Voltage vs. Temperature

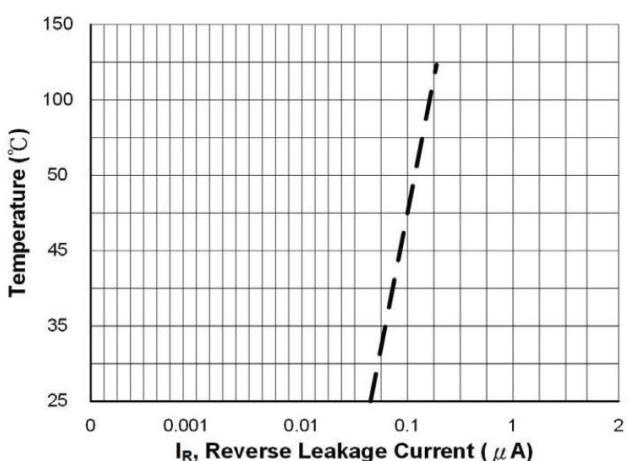


Fig 6. Typic Reverse Current vs. Temperature

DFN1109-6L Package Outline Drawing

Symbol	MILLIMETERS		
	Min.	Nom.	Max.
A	0.45	0.50	0.55
A1	0.00	0.02	0.05
b	0.15	0.20	0.25
b1	0.14 REF		
c	0.10	0.15	0.20
D	1.05	1.10	1.15
e	0.40 BSC		
E	0.85	0.90	0.95
L	0.30	0.35	0.40
L2	0.05 REF		
L3	0.10 REF		
h	0.05	0.10	0.15

The drawing shows three views of the package:

TOP VIEW: A rectangle divided into six horizontal sections labeled 1 through 6. Section 1 is at the bottom, section 6 is at the top, and sections 2, 3, 4, and 5 are in the middle. Dimensions include D (width), L2 (bottom width), and L3 (bottom height).

BOTTOM VIEW: Shows the underside of the package with lead frames. Dimensions include b (lead thickness), b1 (lead gap), e (lead pitch), h (lead height), and L (lead length).

SIDE VIEW: Shows the profile of the package with lead frames. Dimensions include c (lead height), A1 (lead gap), and A (lead thickness).

Marking Code

Part Number	Marking Code	UM1A ●
STCUM050UL	UM1A	
UM1A = Device Marking Code		

Ordering information

Part Number	Package	Base qty	Reel Size	Delivery mode
		(pcs)	(inch)	
STCUM050UL	DFN1109-6L	3,000	7	Tape and reel