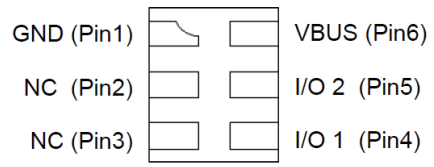
2-Line Ultra Low Capacitance TVS Diode Array

Features

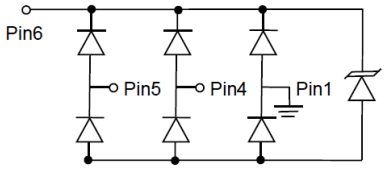
- IEC 61000-4-2 (ESD) ±17kV (air), ±15kV (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 3A (8/20μs)
- Ultra low capacitance
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage

Schematic & PIN Configuration



DFN1109-6L

Circuit Diagram



Applications

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

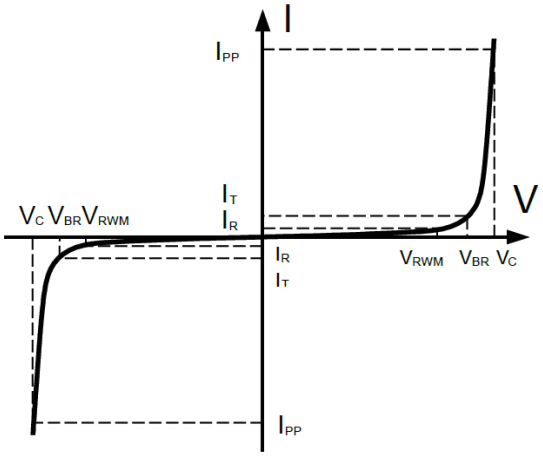
Mechanical Characteristics

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

Absolute Maximum Ratings (T_A = 25℃ Unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20μs)	P_{PP}	90	W
Peak Pulse Current (tp = 8/20μs)	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	℃
Storage Temperature Range	T_{STG}	-55 to + 150	℃

Electrical Parameters (T_A = 25℃ 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℃ 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 = 1mA	6			V
Reverse leakage current	I_R	V_{RWM} = 5V			100	nA
Clamping Voltage	V_C	I_{PP} = 1A,t_P =8/20μs, Any I/O pin to ground			18	V
Clamping Voltage	V_C	I_{PP} = 3A,t_P =8/20μs, Any I/O pin to ground			30	V
Junction capacitance	C_J	V_R = 0V, f = 1MHz, Any I/O pin to ground		0.25		pF

Typical Performance Characteristics (T_A = 25℃ Unless otherwise noted)

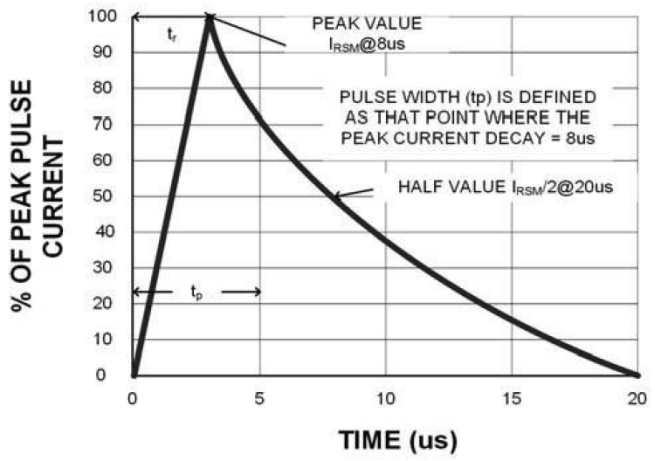


Fig 1. 8 X 20μs Pulse Waveform

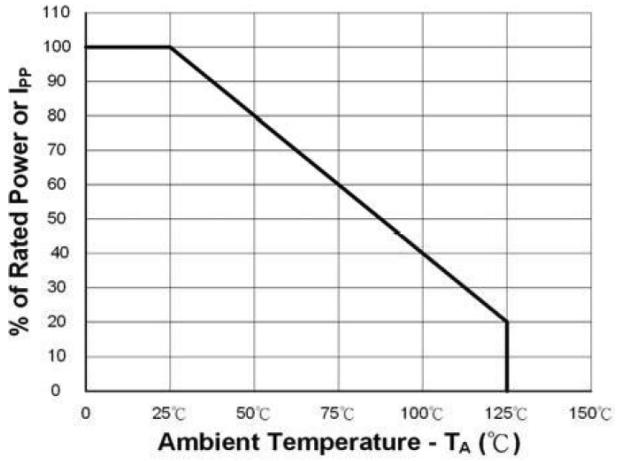


Fig 2. Power Derating Curve

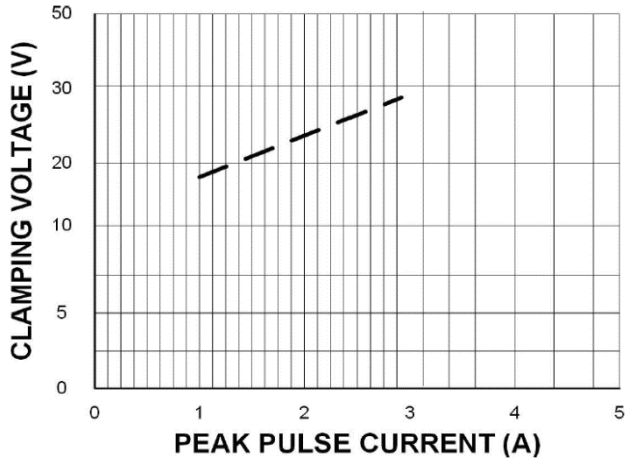


Fig 3. Clamping Voltage vs. Peak Pulse Current

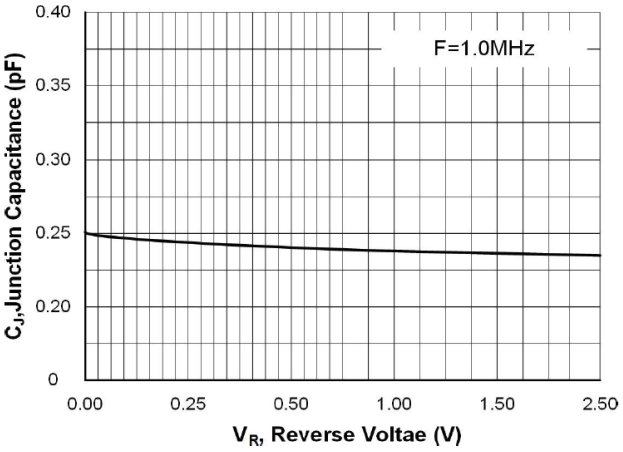


Fig 4. Typic Capacitance vs. Reverse Voltage

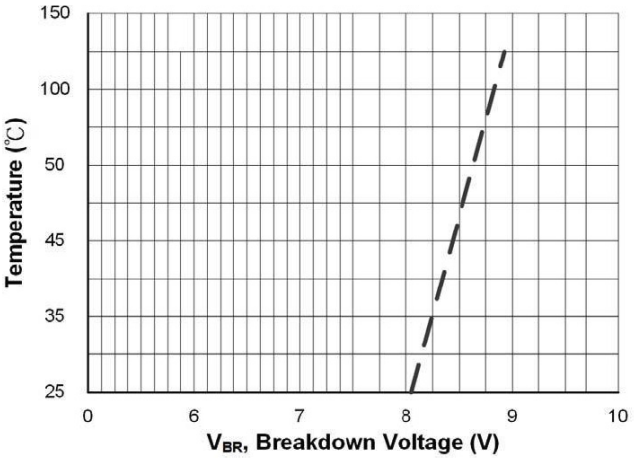


Fig 5. Typic Breakdown Voltage vs. Temperature

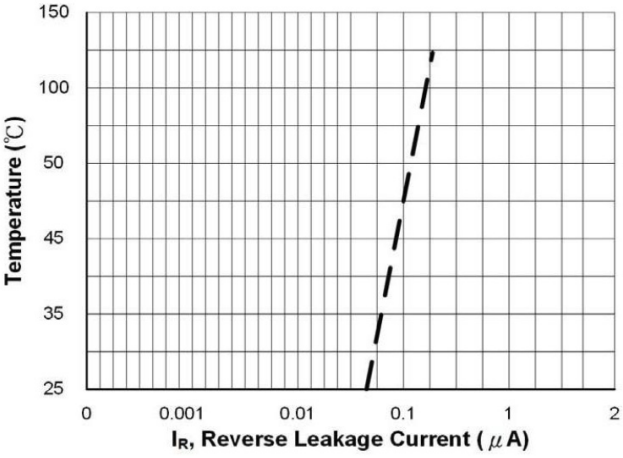
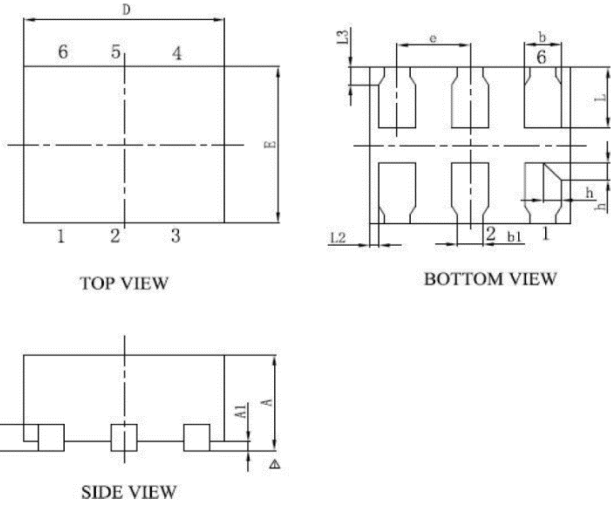


Fig 6. Typic Reverse Current vs. Temperature

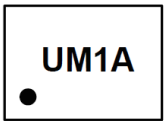
DFN1109-6L Package Outline Drawing

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



Marking Code

Part Number	Marking Code
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