

### Features

- 90 Watts Peak Pulse Power per Line ( $t_p=8/20\mu s$ )
- Protects Two High Speed Lines
- Low Clamping Voltage
- RoHS Compliant
- IEC61000-4-2 (ESD)  $\pm 17kV$  (air),  $\pm 15kV$  (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (LIGHTNING) 3A (8/20 $\mu s$ )

### Applications

- USB 3.0 / USB 3.1 Interfaces
- HDMI 1.4 / HDMI 2.0 Interfaces
- Video Graphics Cards
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Industrial Controls
- Peripherals

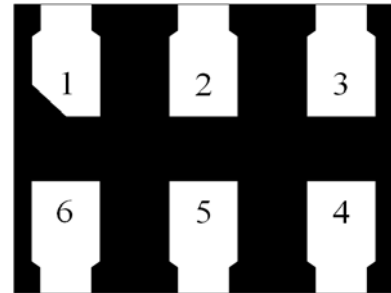
### Mechanical Characteristics

- DFN1109TP6 (1.1x0.9mm) Package
- Molding Compound Flammability Rating : UL 94V-O
- Weight 1.0 Milligrams (Approximate)
- Quantity Per Reel : 3,000pcs
- Reel Size : 7 inch
- Lead Finish : Lead Free

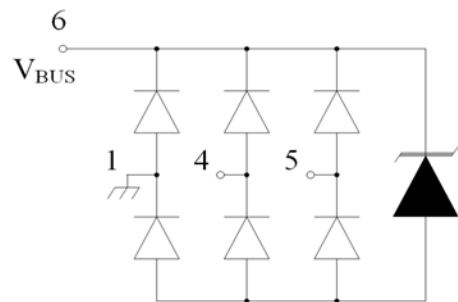
### Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu s$ )	Ppp	90	W
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	$\pm 17$	Kv
ESD per IEC 61000-4-2 (Contact)		$\pm 15$	
Operating Temperature Range	T <sub>J</sub>	-55 to +125	°C
Storage Temperature Range	T <sub>STJ</sub>	-55 to +150	°C

### Dimensions DFN1109MP6



### Pin Configuration

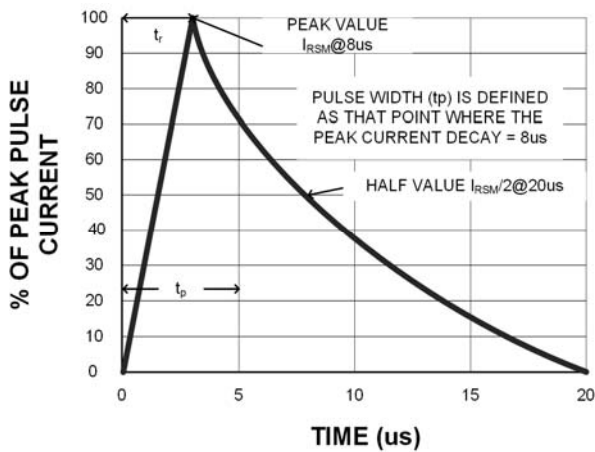


**Electrical Characteristics**( $T_A=25^{\circ}\text{C}$  unless otherwise specified)

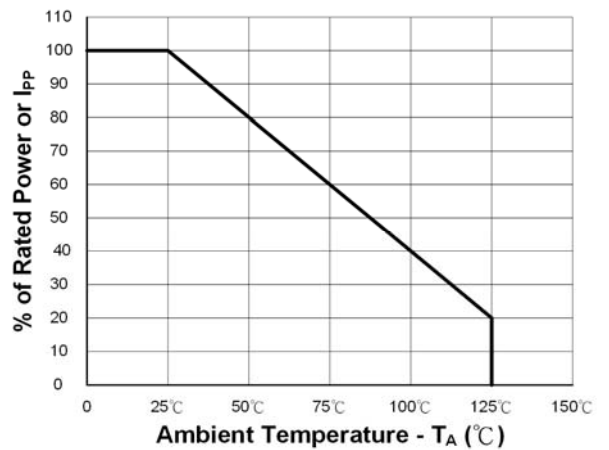
Part Number	Device Marking	$V_{RWM}$ (V)	$V_{BR}$ (V)	$I_T$ (mA)	$V_C$ @1A	$V_C$		$I_R$ $\mu\text{A}$ (Max)	C (Pf) (Typ.)
						(Max)	(@A)		
ULC051109MP6	UM1A	5	6	1	18	30	3	0.1	0.25

**Characteristic Curves**

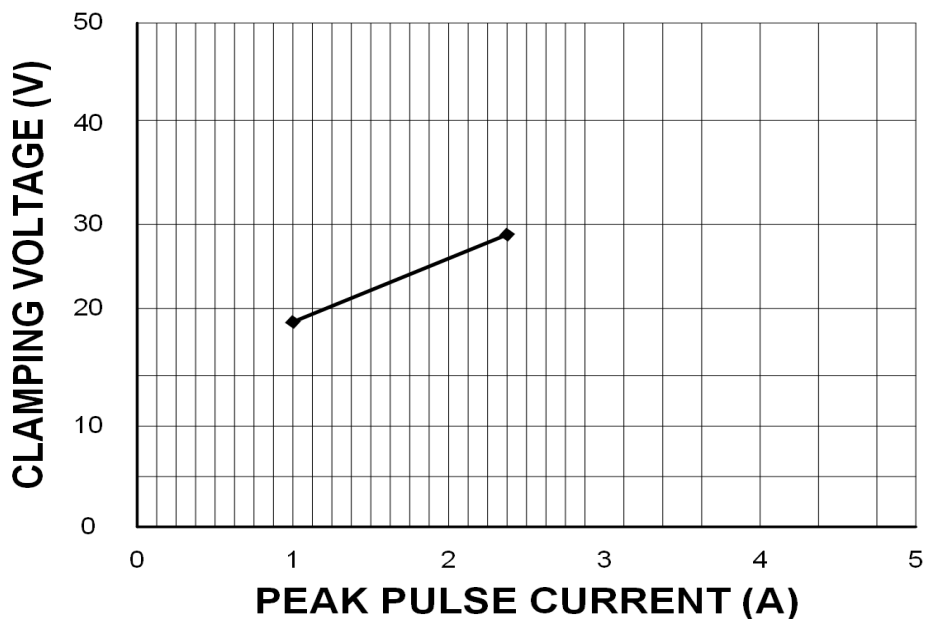
**Figure 1. 8 x 20  $\mu\text{s}$  Waveform**



**Figure 2. Power Derating Curve**

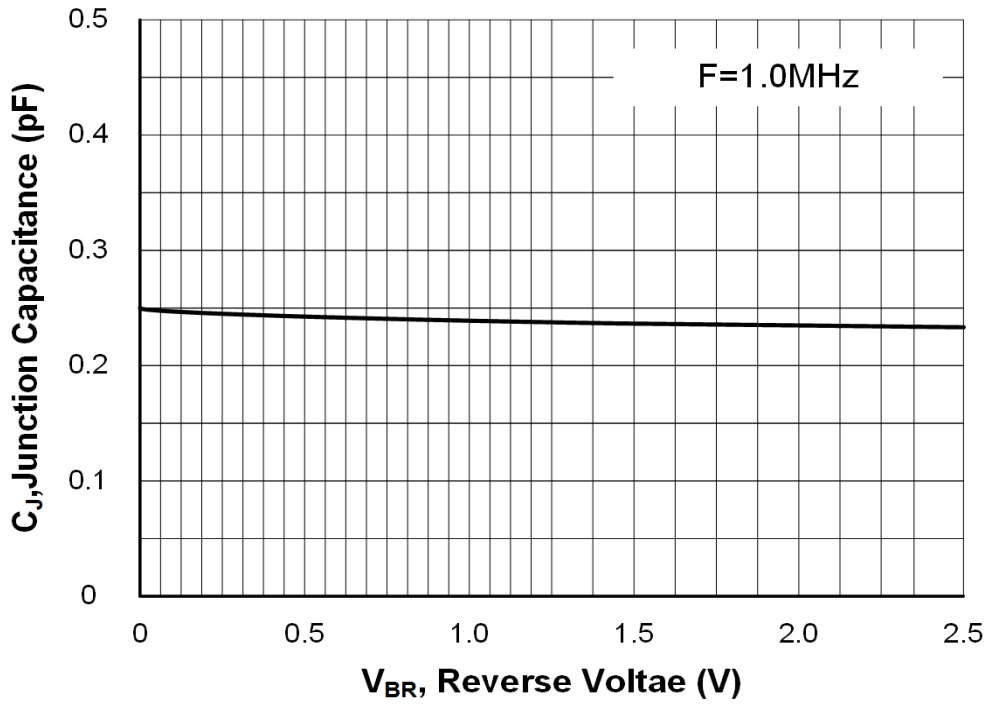


**Figure 3. Clamping Voltage vs. Peak Pulse Current ( $t_p=8/20\mu s$ )**



**TYPIC CHARACTERISTICS**

**Figure 4. Typic Capacitance vs. Reverse Voltage**



**Figure 5. Typic Insertion Loss vs. Freqence**



## LAYOUT DIAGRAM INFORMATION

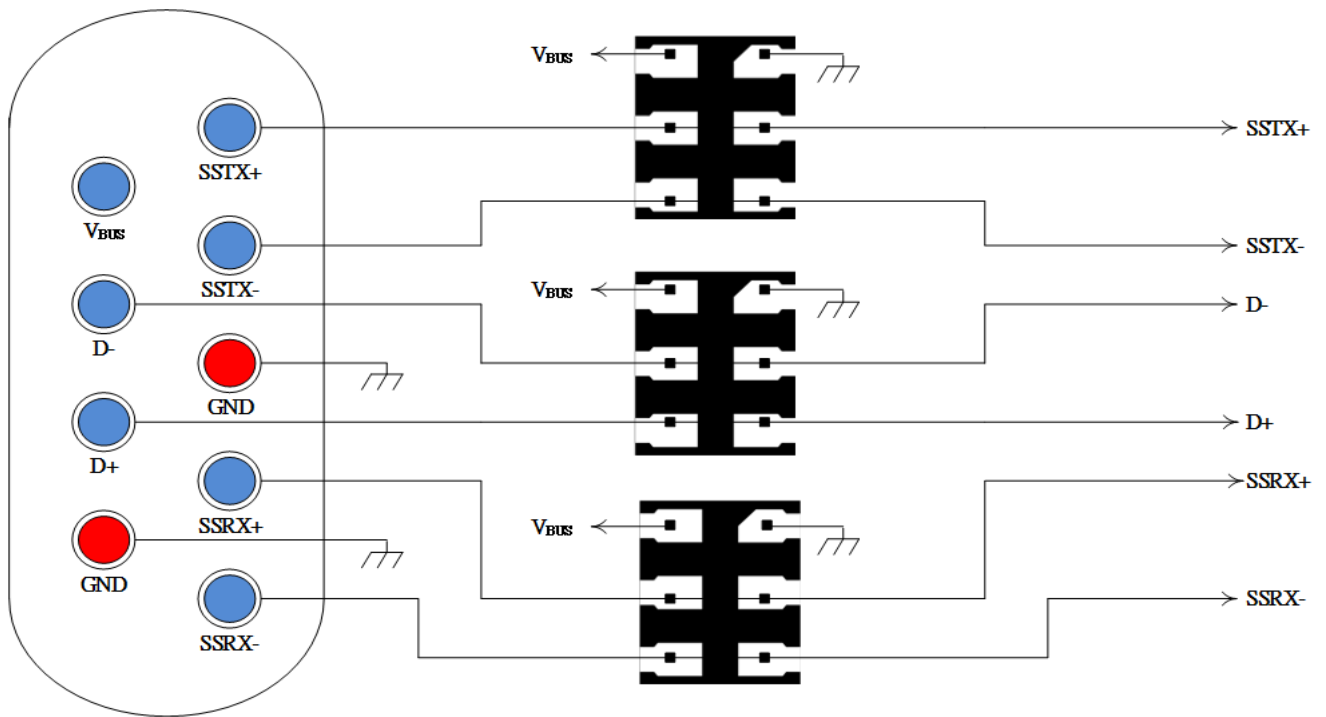


Figure 1. USB 3.0 Protection

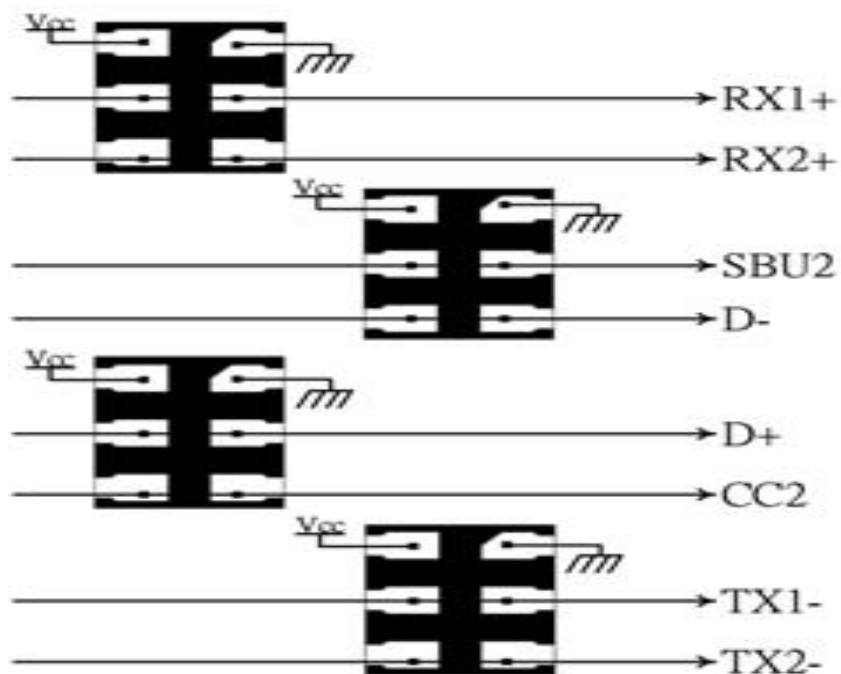
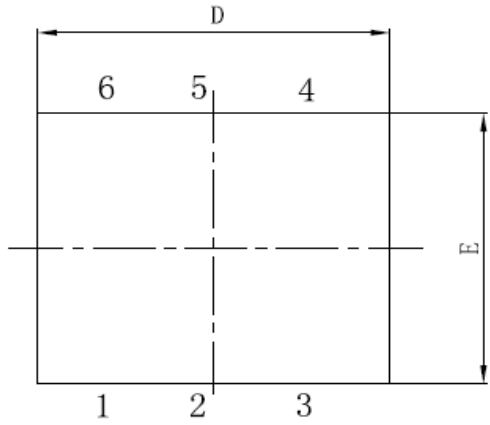
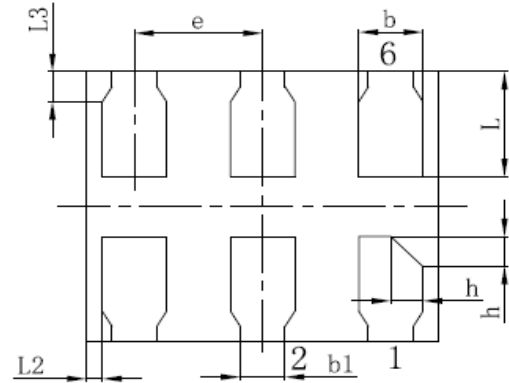
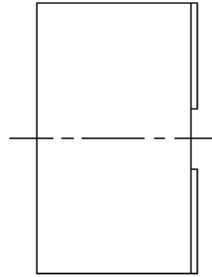


Figure 2. USB 3.1 Protection

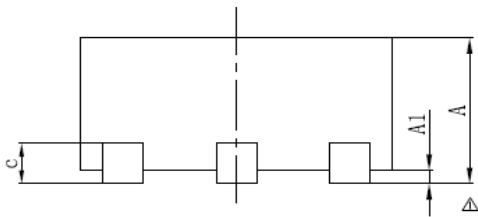
## DFN1109MP6 PACKAGE OUTLINE & DIMENSIONS



TOP VIEW



BOTTOM VIEW



SIDE VIEW

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	0	0.02	0.05
b	0.15	0.20	0.25
b1	0.14REF		
c	0.10	0.152	0.20
D	1.05	1.10	1.15
e	0.40BSC		
E	0.85	0.90	0.95
L	0.30	0.35	0.40
L2	0.05REF		
L3	0.10REF		
h	0.05	0.10	0.15