

Features

- ◆ Ultra low capacitance: 0.6 pF typical (I/O to I/O)
- ◆ Ultra low leakage: nA level
- ◆ Low operating voltage: 5V
- ◆ Low clamping voltage
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: ±20kV
 - Contact discharge: ±20kV
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) : 10A(8/20μs)
- ◆ ROHS Compliant

Mechanical Characteristics

- ◆ Package: SOT23-6
- ◆ Lead Finish: Matte Tin
- ◆ Case Material: "Green" Molding Compound.
- ◆ UL Flammability Classification Rating 94V-0
- ◆ Moisture Sensitivity: Level 3 per J-STD-020

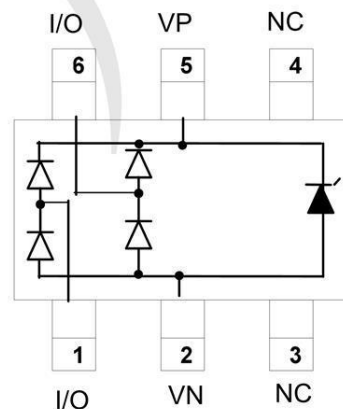
Applications

- ◆ USB 2.0 and USB 3.0 Ports
- ◆ USB OTG
- ◆ Digital video interface(DVI)
- ◆ Monitor and Flat Panel Displays
- ◆ PCI Express and Serial SATA Ports
- ◆ Gigabit Ethernet
- ◆ IEEE 1394 firewire ports
- ◆ Consumer products (STB, DVD, DSC, DVC...)

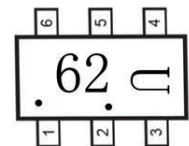
Ordering Information

Part Number	Qty per Reel	Reel Size
TPNUP2201MR6T1G	3000	7"

Dimensions and Pin Configuration



Marking



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

Parameter	Symbol	Value	Unit
Peak Pulse Current (tp=8/20μs)	I _{PP}	10	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	±20	kV
ESD per IEC 61000-4-2 (Contact)		±20	
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			5	V	Any I/O pin to ground
Breakdown Voltage	V _{BR}	6			V	I _T = 1mA, any I/O pin to ground
Reverse Leakage Current	I _R			0.08	μA	V _{RWM} = 5V, any I/O pin to ground
Clamping Voltage	V _C			11	V	I _{PP} = 1A (8 x 20μs pulse) any I/O pin to ground
Clamping Voltage	V _C			20	V	I _{PP} = 9 A (8 x 20μs pulse) any I/O pin to ground
Junction Capacitance	C _J		1.2	1.8	pF	V _R = 0V, f = 1MHz, any I/O pin to ground
Junction Capacitance	C _J		0.6	1.0	pF	V _R = 0V, f = 1MHz, between I/O pins

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

Fig1. 8/20 μs Pulse Waveform

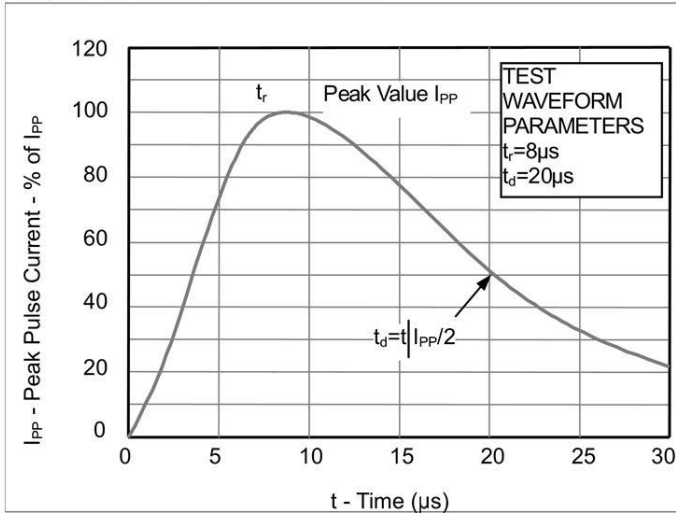


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

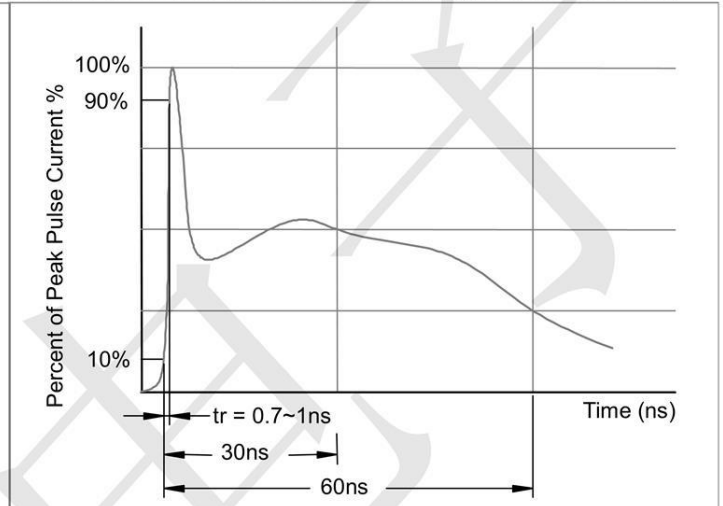
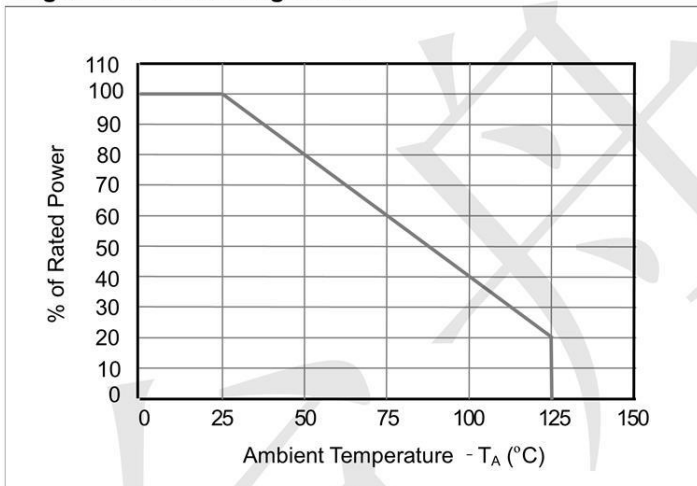
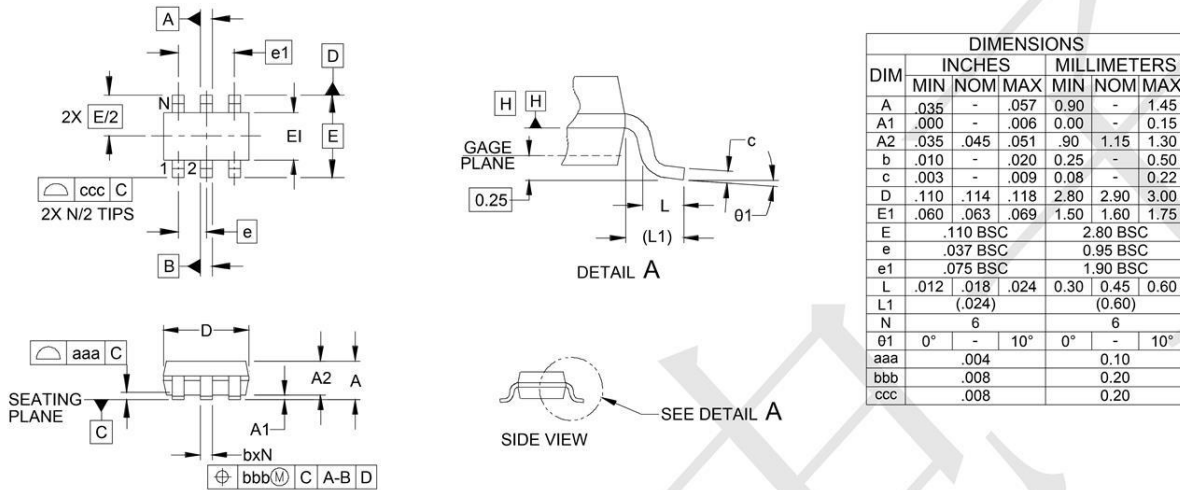


Fig3. Power Derating Curve



Outline Drawing - SOT23-6



Land Pattern - SOT23-6

