

Mechanical Characteristics

- ◆ Package: SOT23-6
- ◆ Lead Finish: Matte Tin
- ◆ UL Flammability Classification Rating 94V-0
- ◆ Case Material: "Green" Molding Compound
- ◆ Moisture Sensitivity: Level 3 per J-STD-020
- ◆ Terminal Connections: See Diagram Below
- ◆ Marking Information: See Below

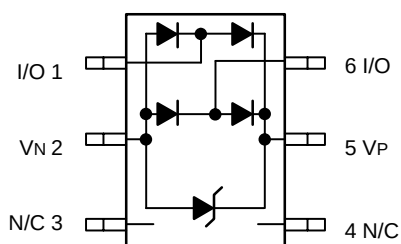
Applications

- ◆ High Speed Communication Line Protection
- ◆ USB 1.1 and 2.0 Power and Data Line Protection
- ◆ Digital Video Interface (DVI)
- ◆ Monitors and Flat Panel Displays
- ◆ Pb-Free Package May be Available. The G-Suffix Denotes aPb-Free Lead Finish

Features

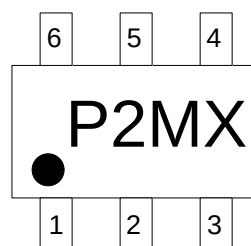
- ◆ Ultra low capacitance: 1pF typical (I/O to I/O)
- ◆ Ultra low leakage: nA level
- ◆ Low operating voltage: 5V
- ◆ Low clamping voltage
- ◆ Up to 4 data lines and one power line protects
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 15\text{kV}$
 - Contact discharge: $\pm 8\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) : 10A(8/20 μs)
- ◆ ROHS Compliant

Dimensions and Pin Configuration



Circuit and Pin Schematic

Marking Information



P2MX Device Marking
Code Dot denotes Pin1

Ordering Information

Part Number	Marking	Packaging	Reel Size
NUP2114UCMR6T1G	P2MX	3000/Tape & Reel	7 inch

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p=8/20\mu\text{s}$) (Note 1)	PPP	150	W
Peak Pulse Current ($t_p=8/20\mu\text{s}$)	I _{PP}	10	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	± 15 ± 8	kV
Operating Temperature Range	T _J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^{\circ}\text{C}$

1. Non-repetitive current pulse per Figure 1 (Pin 5 to Pin 2)

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

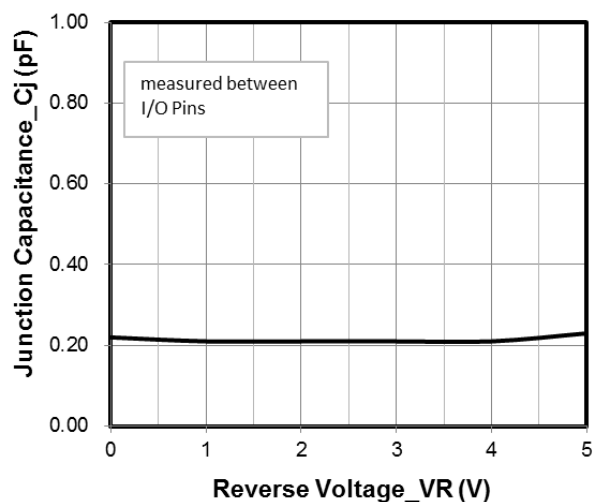
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			5	V	Any I/O pin to ground (Note 2)
Breakdown Voltage	V _{BR}	6			V	I _T = 1mA, any I/O pin to ground (Note 3)
Reverse Leakage Current	I _R			0.5	μA	V _{RWM} = 5V, any I/O pin to ground
Clamping Voltage	V _C		10		V	I _{PP} = 5A (8 x 20 μs pulse) any I/O pin to ground (Note 4)
Clamping Voltage	V _C		15		V	I _{PP} = 10A (8 x 20 μs pulse) any I/O pin to ground (Note 4)
Junction Capacitance	C _J		1		pF	V _R = 0V, f = 1MHz, between I/O pins
Junction Capacitance	C _J		2		pF	V _R = 0V, f = 1MHz, any I/O pin to ground

2. TVS devices are normally selected according to the working peak reverse voltage (V_{RWM}), which should be equal or greater than the DC or continuous peak operating voltage level.

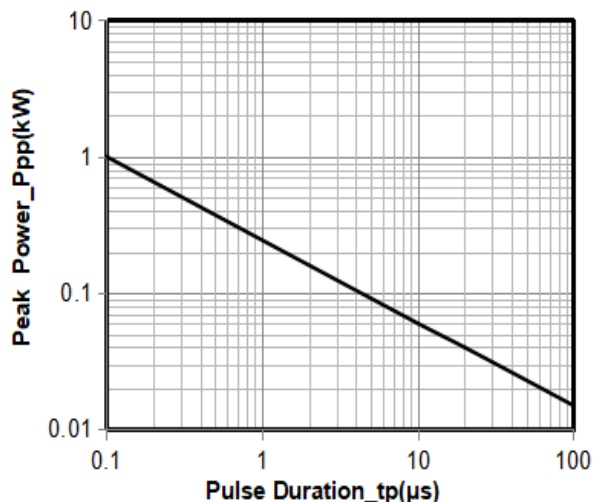
3. V_{BR} is measured at pulse test current I_T.

4. Non-repetitive current pulse per Figure 1 (Pin 5 to Pin 2)

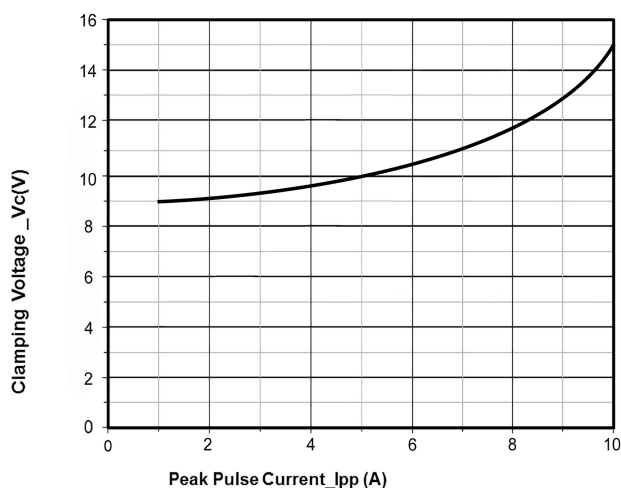
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



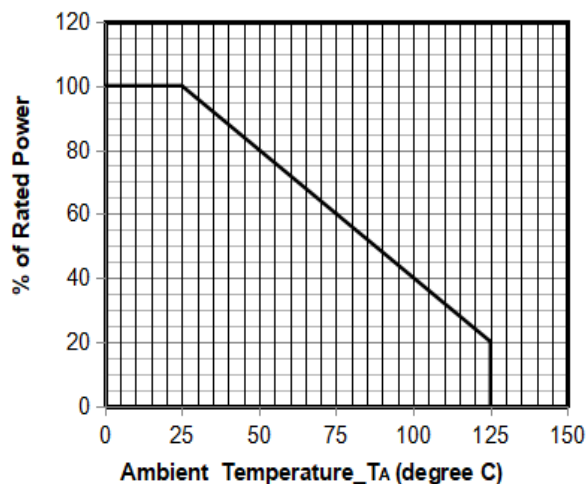
Junction Capacitance vs. Reverse Voltage



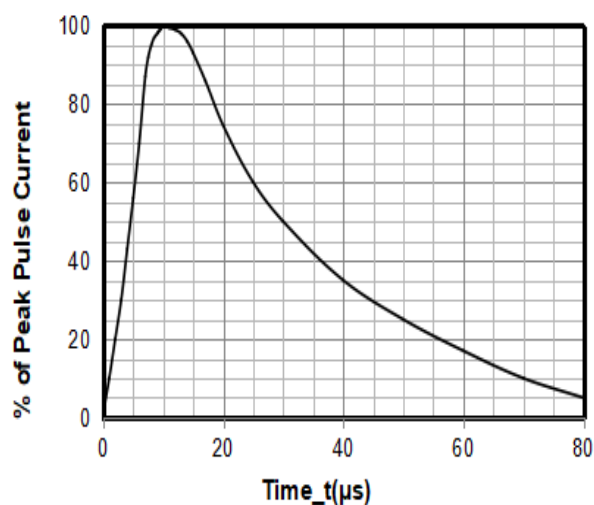
Peak Pulse Power vs. Pulse Time



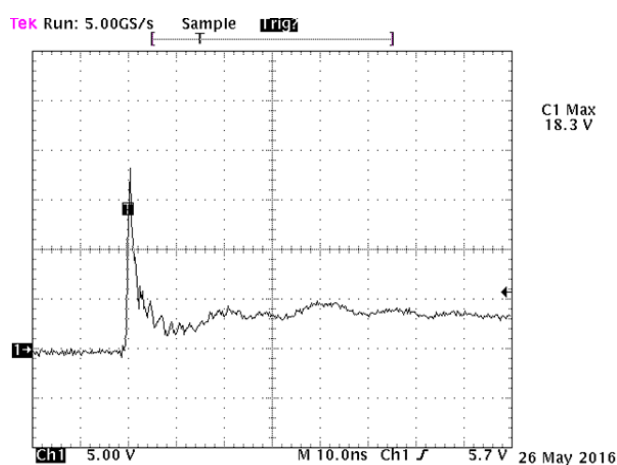
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve

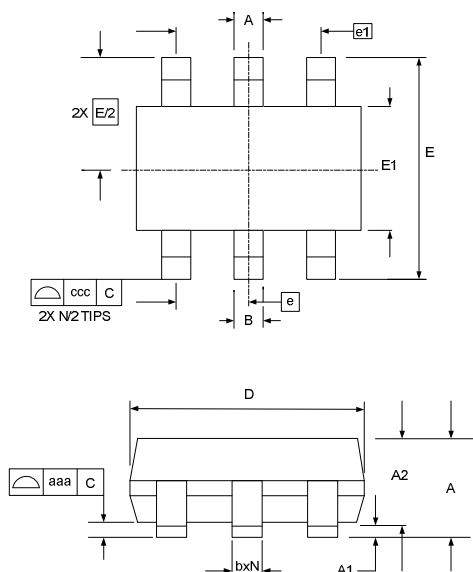


8 X 20μs Pulse Waveform



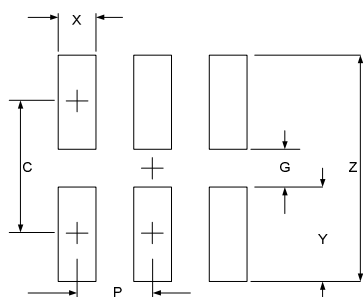
Note: Data is taken with a 10x attenuator
Contact discharge current waveform
per IEC61000-4-2

SOT23-6 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.90		1.45	0.035		0.057
A1	0.00		0.15	0.000		0.006
A2	0.90	1.15	1.30	0.035	0.045	0.051
b	0.25		0.50	0.010		0.020
c	0.08		0.22	0.003		0.009
D	2.80	2.90	3.10	0.110	0.114	0.122
E1	1.50	1.60	1.75	0.060	0.063	0.069
E	2.80 BSC			0.110 BSC		
e	0.95 BSC			0.037 BSC		
e1	1.90 BSC			0.075 BSC		
N	6			6		
aaa	0.10			0.004		
ccc	0.20			0.008		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	2.50	0.098
G	1.40	0.055
P	0.95	0.037
X	0.60	0.024
Y	1.10	0.043
Z	3.60	0.141