

## 300W Surface Mount TVS Diodes

### FEATURES

- 300W Peak Pulse Power ( $t_p = 8 \times 20 \mu s$ )
- Transient protection for data, signal, and Vcc bus to IEC 1000-4-2 (ESD) & IEC 1000-4-4 (EFT)
- Protects two unidirectional lines or one bidirectional line
- ESD protection < 15kV
- Low Leakage Current
- Solid state silicon avalanche technology

### MECHANICAL DATA

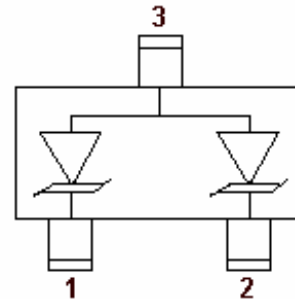
- JEDEC SOT-23 package
- Solder temperature: 265°C for 10 seconds
- Readily solderable terminals

### APPLICATION

- RS-232, RS-423 data lines
- Cellular phone terminals
- Audio/Video inputs
- Portable electronics
- Networks

The **Nxx2AT23 Series** of transient voltage suppressors are designed to protect components which are connected to data and transmission lines from over voltages caused by electrostatic discharge (ESD), electrical fast transients (EFT), and induced lightning.

### SCHEMATIC



### MAXIMUM RATINGS

RATING	SYMBOL	VALUE	UNIT
Peak Pulse Power ( $t_p = 8 \times 20 \mu s$ )	Ppk	300	Watts
Operating Temperature	Tj	-55 to +150	°C
Storage Temperature	Tstg	-55 to +150	°C

### ELECTRICAL CHARACTERISTICS

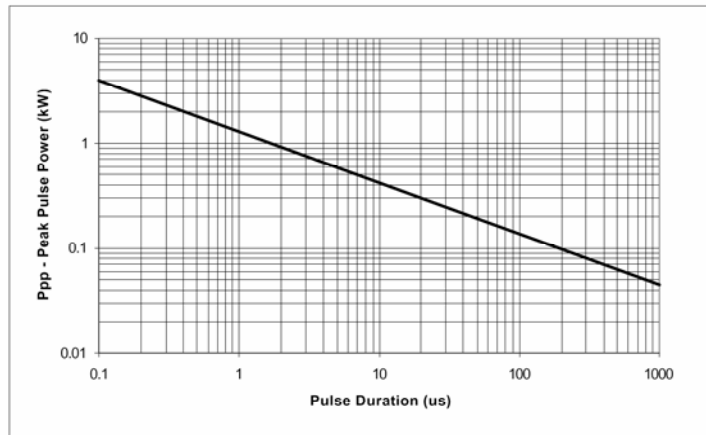
PART NUMBER	MARKING CODE	REVERSE STAND-OFF VOLTAGE	Min $V_{BR}$ @ 1mA	Max Clamping @ $I_{pp}=1A^1$	Max Peak Pulse Current <sup>2</sup>	Leakage Current @ $V_{RWM}$	Capacitance @ 0V, 1MHz Pin 1-2	Capacitance @ 0V, 1MHz Pin 1-3 & 2-3
		$V_{RWM}$	BV(min)	$V_c$ (typ.)	$I_{pp}$	$I_R$	$C_j$ (max.)	$C_j$
		Volts	Volts	Volts	Amps	$\mu A$	pf	pf
N502AT23	T5	5	6	9.5	17	20	250	300
N122AT23	T12	12	13.3	19	12	1	120	150
N152AT23	T15	15	16.7	24	10	1	75	100
N242AT23	T24	24	26.7	43	5	1	50	60
N362AT23	T36	36	40	60	4	1	40	45

Notes:

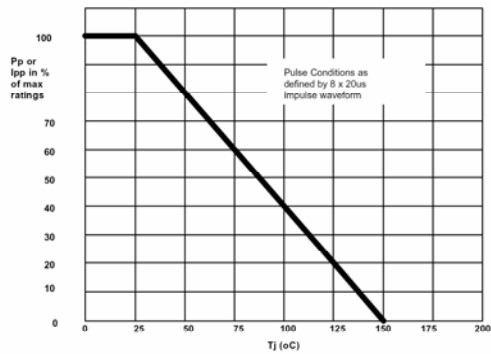
1. Clamping voltage values are based upon an industry standard  $8 \times 20 \mu s$  peak pulse current ( $I_{pp}$ ) waveform.
2.  $t_p = 8/20 \mu s$

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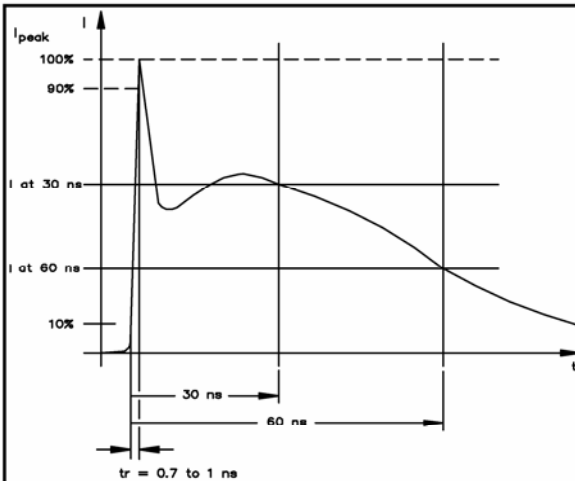
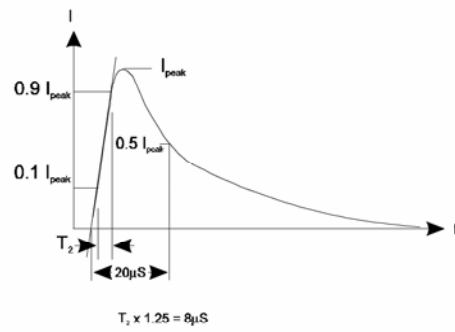
PEAK PULSE POWER vs. PULSE TIME



PULSE DERATING CURVE



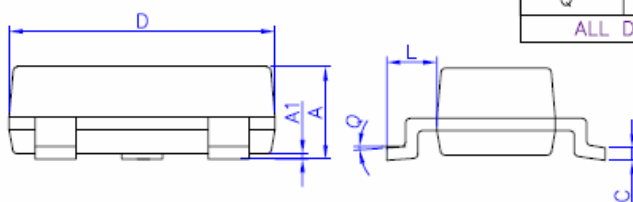
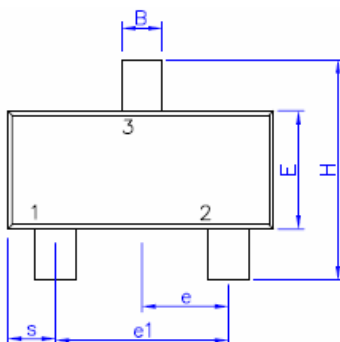
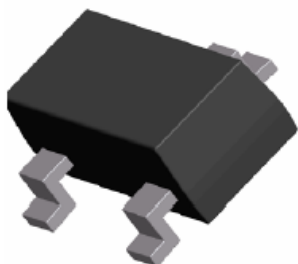
8x20μs IMPULSE WAVEFORM



LEVEL	First Peak Current of Discharge (±10%) (A)	Peak Current (±30%) at 30ns (A)	Peak Current (±30%) at 60ns (A)	Test Voltage Contact Discharge (kV)	Test Voltage Air Discharge (kV)
1	7.5	4	2	2	2
2	15	8	4	4	4
3	22.5	12	6	6	8
4	30	16	8	8	15

IEC 1000-4-2 ESD WAVEFORM & DISCHARGE PARAMETERS

**PACKAGE DIMENSIONS**



SOT-23			
Dimension	Min.	Mid.	Max.
A	0.900	1.010	1.120
A1	0.900	0.058	0.102
B	0.380	0.445	0.510
C	0.090	0.135	0.180
D	2.800	2.920	3.040
H	2.200	2.420	2.640
E	1.200	1.300	1.400
e	0.950 REF.		
e1	1.800	1.900	2.000
s	0.450	0.525	0.600
L	0.550 REF.		
Q	0°	4°	8°

ALL DIMENSIONS IN MM.