

## DESCRIPTION

The 1N61xx series of transient voltage suppressors are designed to protect military and commercial electronic equipment from overvoltages caused by lightning, ESD, EFT, inductive load switching, and EMP. These devices are constructed using two p-n junction TVS diodes in a back-to-back configuration, hermetically sealed in a voidless glass package. The hermetically sealed package provides high reliability in harsh environmental conditions. TVS diodes are further characterized by their high surge capability, low operating and clamping voltages, and a theoretically instantaneous response time. This makes them ideal for use as board level protection for sensitive semiconductor components.

## FEATURES:

- 500 Watts Peak Pulse Power ( $t_p = 10/1000\mu s$ )
- Voidless hermetically sealed glass package
- Metallurgically bonded
- High surge capacity
- Military & Industrial applications
- Available in **JAN**, **JTX**, **JTXV** and **JANS** versions per MIL-S-19500/516

## MECHANICAL CHARACTERISTICS:

- Hermetically sealed glass package
- Tinned copper leads
- Marking : P/N, date code, logo

## MAXIMUM RATINGS

RATING	SYMBOL	VALUE	UNIT
Peak Pulse Power ( $t_p = 10 \times 1000\mu s$ )	Ppk	500	Watts
Operating Temperature	Tj	-65 to +175	°C
Storage Temperature	Tstg	-65 to +175	°C
Steady-State Power Dissipation @ TL = 75°C (3/8")	PD	3	Watts

## ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise specified)

DEVICE TYPE	REVERSE STAND-OFF VOLTAGE $V_{RWM}$	REVERSE LEAKAGE CURRENT $I_R$	MINIMUM BREAKDOWN VOLTAGE $V_{BR} @ I_T$	TEST CURRENT $I_T$	MAXIMUM CLAMPING VOLTAGE $V_C @ I_{PP}$	PEAK PULSE CURRENT $I_{pp}$ $t_p = 1ms$	TEMPERATURE COEFFICIENT OF $V_{BR}$ $\alpha_{Vz}$	MAXIMUM REVERSE LEAKAGE CURRENT ( $I_{R2}$ ) $T_A = +150^\circ C$
	(V)	( $\mu A$ )	(V)	(mA)	(V)	(A)	% / °C	(A)
1N6102A	5.2	100	6.46	175	10.5	47.6	0.05	4000
1N6103A	5.7	50	7.13	175	11.2	44.6	0.06	750
1N6104A	6.2	20	7.79	150	12.1	41.3	0.06	500
1N6105A	6.9	20	8.65	150	13.4	37.3	0.06	300
1N6106A	7.6	20	9.50	125	14.5	34.5	0.07	200
1N6107A	8.4	20	10.45	125	15.6	32.0	0.07	200
1N6108A	9.1	20	11.40	100	16.9	29.6	0.07	150
1N6109A	9.9	20	12.35	100	18.2	27.5	0.08	150
1N6110A	11.4	20	14.25	75	21.0	23.8	0.08	100
1N6111A	12.2	20	15.20	75	22.3	22.4	0.08	100
1N6112A	13.7	1	17.10	65	25.1	19.9	0.085	100
1N6113A	15.2	1	19.0	65	27.7	18.0	0.085	100
1N6114A	16.7	1	20.9	50	30.5	16.4	0.085	100
1N6115A	18.2	1	22.8	50	33.3	15.0	0.09	100
1N6116A	20.6	1	25.7	50	37.4	13.4	0.09	100
1N6117A	22.8	1	28.5	40	41.6	12.0	0.09	100
1N6118A	25.1	1	31.4	40	45.7	10.9	0.095	100
1N6119A	27.4	1	34.2	30	49.9	10.0	0.095	100
1N6120A	29.7	1	37.1	30	53.6	9.3	0.095	100
1N6121A	32.7	1	40.9	30	59.1	8.5	0.095	100
1N6122A	35.8	1	44.7	25	64.6	7.7	0.095	100
1N6123A	38.8	1	48.5	25	70.1	7.1	0.095	100
1N6124A	42.6	1	53.2	20	77.0	6.5	0.095	100
1N6125A	47.1	1	58.9	20	85.3	5.9	0.100	100
1N6126A	51.7	1	64.6	20	97.1	5.1	0.100	100
1N6127A	56.0	1	71.3	20	103.1	4.8	0.100	100
1N6128A	62.2	1	77.9	15	112.8	4.4	0.100	100
1N6129A	69.2	1	86.5	15	125.1	4.0	0.100	100
1N6130A	76.0	1	95.0	12	137.6	3.6	0.100	100
1N6131A	83.6	1	104.5	12	151.3	3.3	0.100	100
1N6132A	91.2	1	114.0	10	165.1	3.0	0.100	100
1N6133A	98.8	1	123.5	10	178.8	2.8	0.105	100
1N6134A	114.0	1	142.5	8	206.3	2.4	0.105	100
1N6135A	121.6	1	152.0	8	218.4	2.3	0.105	100
1N6136A	136.8	1	171.0	5	245.7	2.0	0.110	100
1N6137A	152.0	1	190.0	5	273.0	1.8	0.110	100

1. Non-A Part has 5% higher clamping voltage, 5% lower minimum breakdown voltage, and 5% lower peak pulse current.

### PEAK PULSE POWER vs. PULSE TIME



### 10x1000μs IMPULSE WAVEFORM



### STEADY STATE DERATING CHARACTERISTICS FOR FREE AIR MOUNTING



### PULSE DERATING CURVE



### MECHANICAL OUTLINE



DIM <sup>N</sup>	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.085	0.140	2.1	3.6	
B	1.00	1.300	25.4	33.0	
C	0.140	0.245	3.5	6.3	2
D	0.026	0.033	0.66	0.84	

- NOTES :
- Controlling dimension is inches.
  - Includes uncontrolled area of device leads.

### SCHEMATIC



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