

# New Jersey Semi-Conductor Products, Inc.

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## FEATURES

- 1500 WATTS PEAK POWER DISSIPATION
- AVAILABLE IN STANDOFF VOLTAGES FROM 5.5V TO 185V
- DO-13 HERMETICALLY SEALED PACKAGE
- BIDIRECTIONAL
- UL RECOGNIZED (1N6070A)

## 1N6036 thru 1N6072A

## BIDIRECTIONAL TRANSIENT ABSORPTION ZENER

## DESCRIPTION

These TAZ devices are a series of Bidirectional Silicon Transient Suppressors used in AC applications where large voltage transients can permanently damage voltage-sensitive components.

These devices are manufactured using two silicon PN, low voltage junction in a back to back configuration. They are characterized by their high surge capability, extremely fast response time, and low impedance, ( $R_{on}$ ).

TAZ has a peak pulse power rating of 1500 watts for one millisecond and therefore can be used in applications where induced lightning on rural or remote transmission lines represents a hazard to electronic circuitry. The response time of TAZ clamping action is less than ( $5 \times 10^{-9}$ ) sec; therefore, they can protect Integrated Circuits, MOS devices, Hybrids, and other voltage-sensitive semi-conductors and components.

This series of devices has been proven very effective as EMP Suppressors.

## MAXIMUM RATINGS

- 1500 watts of peak pulse power dissipation at 25°C
- $t_{clamping}$  (0 volts to  $V_{(BR)}$  min): less than  $5 \times 10^{-9}$  seconds
- Operating and storage temperatures -65°C to +175°C
- Steady state power dissipation: 1.0 watts at  $T_L = 25^\circ C$ , 3/8" from body.
- Repetition rate (duty cycle): .01%

## ELECTRICAL CHARACTERISTICS

- Clamping Factor: 1.33 @ full rated power
- 1.20 @ 50% rated power

Clamping Factor: The ratio of the actual  $V_C$  (Clamping Voltage) to the  $V_{(BR)}$  (Breakdown Voltage) as measured on a specific device.

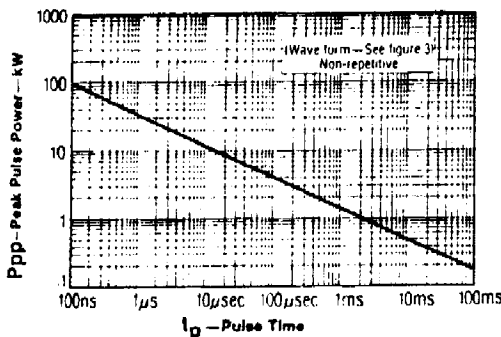


FIGURE 1

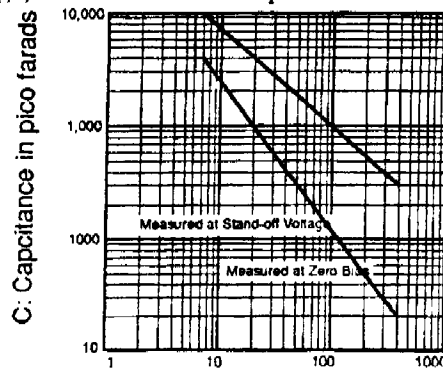
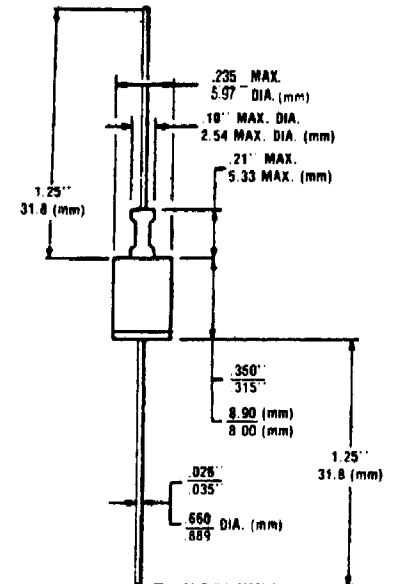


FIGURE 2 TYPICAL CAPACITANCE vs. BREAKDOWN VOLTAGE



## MECHANICAL CHARACTERISTICS

- Standard DO-13 package, glass and metal hermetically sealed
- WEIGHT: 1.5 grams (approximate)
- FINISH: All external surfaces are corrosion resistant and leads solderable.
- POLARITY: Bidirectional not marked.
- MOUNTING POSITION: Any.



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages

# 1N6036 thru 1N6072A

## ELECTRICAL CHARACTERISTICS @ 25°C (Test Both Polarities)

JEDEC Type Number	Rated Stand-off Voltage (Note 1)	Breakdown Voltage		Maximum Clamping Voltage @ I <sub>pp</sub> (1 mSEC)	Maximum Reverse Leakage @ V <sub>RM</sub>	Maximum Peak Pulse Current (Fig. 2)	Maximum Temperature Coefficient of V <sub>BR</sub>
	V <sub>RM</sub> Volts	V(BR) Volts	@ I <sub>T</sub> mA	V <sub>C</sub> Volts	I <sub>RM</sub> μA	I <sub>pp</sub> A	α V <sub>Z</sub> %/°C
1N6036	5.5	6.75 - 8.25	10	11.7	1000	128	.061
*1N6036A	6.0	7.13 - 7.88	10	11.3	1000	132	.061
1N6037	6.5	7.38 - 9.02	10	12.5	500	120	.065
*1N6037A	7.0	7.79 - 8.61	10	12.1	500	124	.065
1N6038	7.0	8.19 - 10.00	10	13.8	200	109	.068
*1N6038A	7.5	8.65 - 9.55	10	13.4	200	112	.068
1N6039	8.0	9.0 - 11.0	1	15.0	50	100	.073
*1N6039A	8.5	9.5 - 10.5	1	14.5	50	103	.073
1N6040	8.5	9.9 - 12.1	1	16.2	10	93	.075
*1N6040A	9.0	10.5 - 11.6	1	15.6	10	96	.075
1N6041	9.0	10.8 - 13.2	1	17.3	5	87	.078
*1N6041A	10.0	11.4 - 12.6	1	16.7	5	90	.078
1N6042	10.0	11.7 - 14.3	1	19.0	5	79	.081
*1N6042A	11.0	12.4 - 13.7	1	18.2	5	82	.081
1N6043	11.0	13.5 - 16.5	1	22.0	5	68	.084
*1N6043A	12.0	14.3 - 15.8	1	21.2	5	71	.084
1N6044	12.0	14.4 - 17.5	1	23.5	5	64	.086
*1N6044A	13.0	15.2 - 16.8	1	22.5	5	67	.086
1N6045	14.0	16.2 - 19.8	1	26.5	5	56.5	.088
*1N6045A	15.0	17.1 - 18.9	1	25.2	5	59.5	.088
1N6046	16.0	18.0 - 22.0	1	29.1	5	51.5	.090
*1N6046A	17.0	19.0 - 21.0	1	27.7	5	54	.090
1N6047	17.0	19.8 - 24.2	1	31.9	5	47	.092
*1N6047A	18.0	20.9 - 23.1	1	30.6	5	49	.092
1N6048	19.0	21.6 - 26.4	1	34.7	5	43	.094
*1N6048A	20.0	22.8 - 25.2	1	33.2	5	45	.094
1N6049	21.0	24.3 - 29.7	1	39.1	5	38.5	.095
*1N6049A	22.0	25.7 - 28.4	1	37.5	5	40	.096
1N6050	24.0	27.0 - 33.0	1	43.5	5	34.5	.097
*1N6050A	25.0	28.5 - 31.5	1	41.4	5	36	.097
1N6051	26.0	29.7 - 36.3	1	47.7	5	31.5	.098
*1N6051A	28.0	31.4 - 34.7	1	45.7	5	33	.098
1N6052	29.0	32.4 - 39.6	1	52.0	5	29	.099
*1N6052A	30.0	34.2 - 37.8	1	49.9	5	30	.099
1N6053	31.0	35.1 - 42.9	1	56.4	5	26.5	.100
*1N6053A	33.0	37.1 - 41.0	1	53.9	5	28	.100
1N6054	34.0	38.7 - 47.3	1	61.9	5	24	.101
*1N6054A	36.0	40.9 - 45.2	1	59.3	5	25.3	.101
1N6055	38.0	42.3 - 51.7	1	67.8	5	22.2	.101
*1N6055A	40.0	44.7 - 49.4	1	64.8	5	23.2	.101
1N6056	41.0	45.9 - 56.1	1	73.5	5	20.4	.102
*1N6056A	43.0	48.5 - 53.6	1	70.1	5	21.4	.102
1N6057	45.0	50.4 - 61.6	1	80.5	5	18.6	.103
*1N6057A	47.0	53.2 - 58.8	1	77.0	5	19.5	.103
1N6058	48.0	55.8 - 68.2	1	89.0	5	16.9	.104
*1N6058A	53.0	58.9 - 65.1	1	85.0	5	17.7	.104
1N6059	55.0	61.2 - 74.8	1	98.0	5	15.3	.104
*1N6059A	58.0	64.6 - 71.4	1	92.0	5	16.3	.104
1N6060	60.0	67.5 - 82.5	1	108.0	5	13.9	.105
*1N6060A	64.0	71.3 - 78.8	1	103.0	5	14.6	.105
1N6061	66.0	73.8 - 90.2	1	118.0	5	12.7	.105
*1N6061A	70.0	77.9 - 86.1	1	113.0	5	13.3	.105
1N6062	73.0	81.9 - 100.0	1	131.0	5	11.4	.106
*1N6062A	75.0	86.5 - 95.5	1	125.0	5	12.0	.106
1N6063	81.0	90.0 - 110.0	1	144.0	5	10.4	.106
*1N6063A	82.0	95.0 - 105.0	1	137.0	5	11.0	.106
1N6064	90.0	99.0 - 121.0	1	158.0	5	9.5	.107
*1N6064A	94.0	105.0 - 116.0	1	152.0	5	9.9	.107
1N6065	95.0	108.0 - 132.0	1	176.0	5	8.5	.107
*1N6065A	100.0	114.0 - 126.0	1	168.0	5	8.9	.107
1N6066	105.0	117.0 - 143.0	1	191.0	5	7.8	.107
*1N6066A	110.0	124.0 - 137.0	1	182.0	5	8.2	.107
1N6067	121.0	135.0 - 165.0	1	223.0	5	6.7	.108
*1N6067A	128.0	143.0 - 158.0	1	213.0	5	7.0	.108
1N6068	137.0	153.0 - 187.0	1	258.0	5	5.8	.108
*1N6068A	145.0	162.0 - 179.0	1	245.0	5	6.1	.108
1N6069	145.0	162.0 - 198.0	1	274.0	5	5.5	.108
*1N6069A	150.0	171.0 - 189.0	1	261.0	5	5.7	.108
1N6070	155.0	171.0 - 210.0	1	292.0	5	5.1	.108
*1N6070A	160.0	181.0 - 200.0	1	278.0	5	5.4	.108
1N6071	165.0	180.0 - 220.0	1	308.0	5	4.9	.108
*1N6071A	170.0	190.0 - 210.0	1	294.0	5	5.1	.108
1N6072	175.0	198.0 - 242.0	1	344.0	5	4.3	.108
*1N6072A	185.0	209.0 - 231.0	1	328.0	5	4.6	.108