1500 WATT BI-POLAR TRANSIENT VOLTAGE
1N6036 THRU 1N6072 SUPPRESSOR DIODES
(DO-13 CASE)

FEATURES:

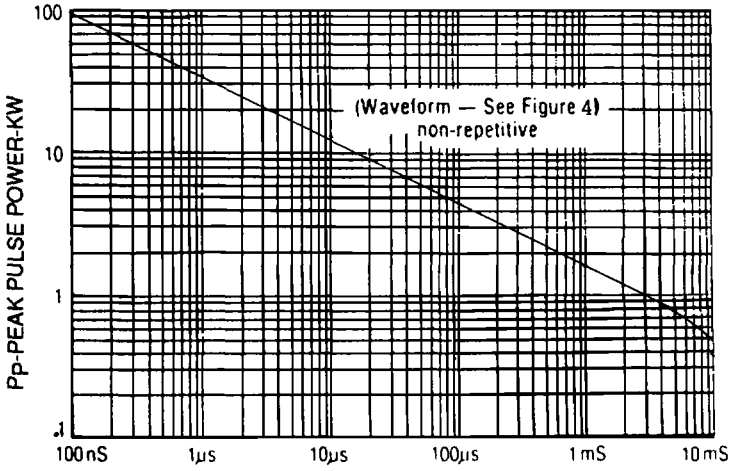
- 1500 Watts Peak Power – 1 ms
- 1 Watt D.C. Power @ 75°C Lead Temp.
- Fast Response (Less than 5 x 10^{-9} sec.)
- High Temperature Operation
- Low Clamping Voltage
- Metallurgically Bonded

5.5 thru 185 Volts

The 1N6036 Series of voltage transient suppressor diodes are designed to protect electronic equipment from failure due to voltage transients. Their avalanche characteristics coupled with special internal design for rapid junction cooling under pulse power stress makes them most useful in airborne, telephone and other equipment where large voltage transients are frequent. They are bipolar devices.

The inherent fast response of these devices and broad choice of stand-off voltage ratings enables the designer to protect a wide range of both active and passive circuit components which may be damaged by voltage transients.

FIG 1



PEAK PULSE POWER VS PULSE TIME

MAXIMUM RATINGS: (See Notes)

Maximum Temperatures		
Ambient Storage and Operating Range	Tstg TA	-65°C.to+175°C
Lead Temperature (For soldering 1/16 inch from case for 10 sec.)		230°C
Maximum Power		
Peak Power Dissipation (1.0 msec pulse width, T_A=25°C (Fig 4)	P_P	1500 Watts
DC Power Dissipation (T_A = 25°C)	P_M	See Fig. 2 1.0 Watt
Maximum Pulse Currents	I_{PP}	See Fig. 3

Notes
(1) Exceeding these ratings may impair operation of the semiconductor device.
(2) The applied current pulse is as shown in the "Pulse Current vs. Time" plot. Maximum Rate of Applications is 2 pulses per minute.

FIG 2

TEMPERATURE RATING CURVE

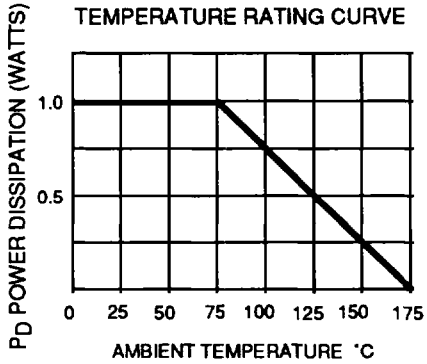


FIG 3

MAXIMUM ALLOWABLE PEAK PULSE CURRENT & POWER VS AMBIENT TEMPERATURE

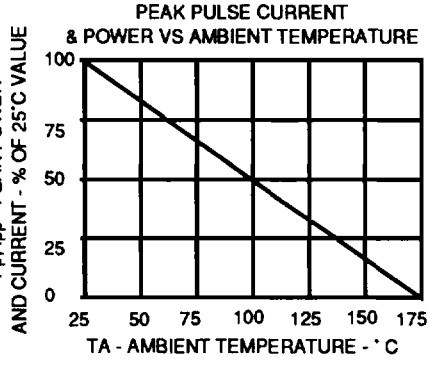
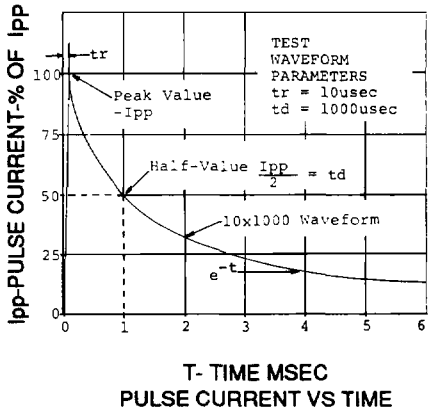


FIG 4



PULSE CURRENT VS TIME

ELECTRICAL CHARACTERISTICS at 25°C

† JEDEC TYPE NUMBER	REVERSE STAND-OFF VOLTAGE V_R VOLTS	* BREAKDOWN VOLTAGE @ BV VOLTS	I_T mA	# MAXIMUM CLAMPING VOLTAGE @ I_{PP} (1 mSEC) V_C VOLTS	MAXIMUM REVERSE LEAKAGE @ V_R I_R µA	MAXIMUM PEAK PULSE CURRENT I_{PP} A	MAXIMUM TEMPERATURE COEFFICIENT OF BV %/°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 - 10.0	10	13.8	200	109	.068
1N6038A	7.5	8.65 - 9.55	10	13.4	200	112	.068
1N6039	8.0	9.00 - 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 - 17.6	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	.096
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.	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

*BV measured after I_T applied for 300 msec
†Available as JAN, JTX, and TXV to Mil-S-19500/507
#Clamping Approx. 1.3 x Max BV