DIGITRON SEMICONDUCTORS

1N6036 – 1N6072A BIDIRECTIONAL TRANSIENT SUPPRESSOR DIODES

MAXIMUM RATINGS

POWER DISSIPATION	1500 Watts @ 25°C
$t_{CLAMPING}$ (0 VOLTS TO $V_{(BR)}$ MIN)	Less than 5 x 10^{-9} seconds
OPERATING TEMPERATURE	-65°C to +175°C
STEADY STATE POWER DISSIPATION	1.0 Watts @ T_L = 25°C, ⅜" from body
REPETITION RATE (DUTY CYCLE)	.01%

ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise noted)

TYPE	Rated Standoff Voltage	Breakdown Voltage		Maximum Clamping Voltage @ I_{pp} (1 mSEC)	Maximum Reverse Leakage @ V_{RM}	Maximum Peak Pulse Current	Maximum Temperature Coefficient of $V_{(BR)}$
	V_{WM}	$V_{(BR)}$ @ I_T		V_C	I_{RM}	I_{pp}	aV_Z
	VOLTS	VOLTS	mA	VOLTS	µA	A	% / °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

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1N6036 – 1N6072A BIDIRECTIONAL TRANSIENT SUPPRESSOR DIODES

ELECTRICAL CHARACTERISTICS (CONT'D)

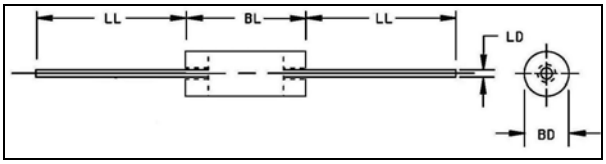
TYPE	Rated Standoff Voltage	Breakdown Voltage		Maximum Clamping Voltage @ I_{pp} (1 mSEC)	Maximum Reverse Leakage @ V_{RM}	Maximum Peak Pulse Current	Maximum Temperature Coefficient of $V_{(BR)}$
	V_{RM}	$V_{(BR)}$ @ I_T		V_C	I_{RM}	I_{pp}	aV_Z
	VOLTS	VOLTS	mA	VOLTS	µA	A	% / °C
1N6060	60.0	67.5 – 82.5	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

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.**

MECHANICAL CHARACTERISTICS

CASE	Metal, DO-13
POLARITY	Bidirectional
WEIGHT	1.5 Grams (Approximate)



	Dimensions			
	1N6036-1N6072A			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	-	0.235	-	5.970
BL	0.315	0.350	8.001	8.890
LD	0.027	0.035	0.686	0.762
LL	1.250	-	31.750	-

Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).
Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.

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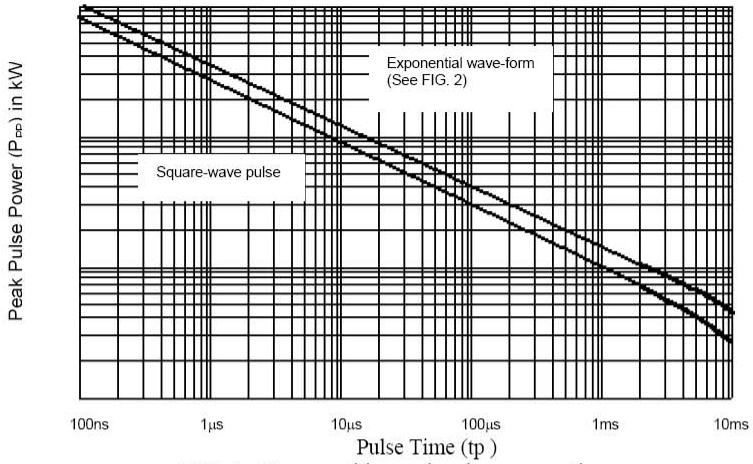


FIG. 1 – Non-repetitive peak pulse power rating curve
NOTE: Peak power defined as peak voltage times peak current

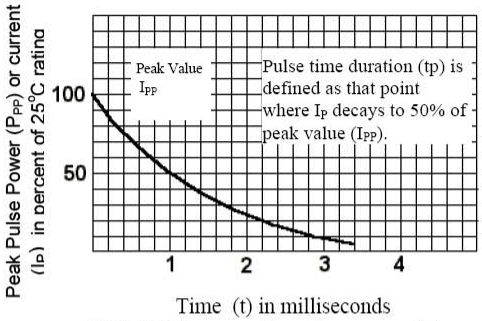


FIG. 2 Pulse wave form for exponential surge

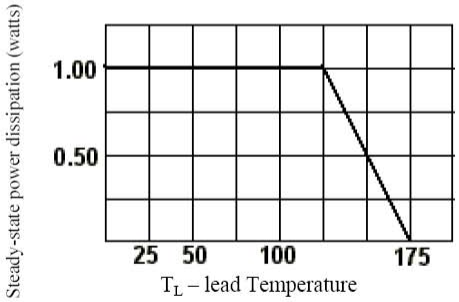


FIG. 3 Steady-state power derating curve

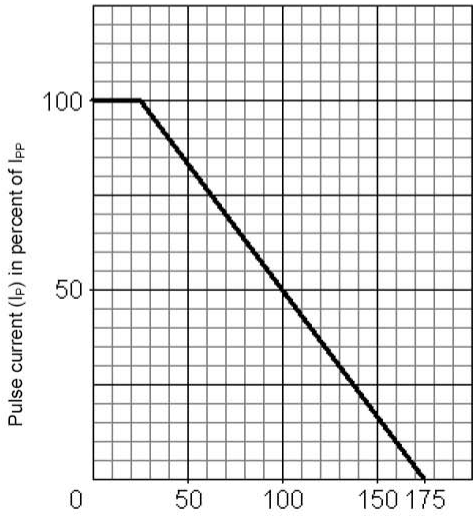


FIG. 4 Derating Curve

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