DIGITRON SEMICONDUCTORS

1N6103(A)-1N6137(A) BIDIRECTIONAL TRANSIENT SUPPRESSORS
1N6139(A) - 1N6173(A)

MAXIMUM RATINGS

Operating and storage temperature:	-55 to +175°C
Impulse repetition rate (duty factor):	0.01%
Solder temperatures:	260°C for 10 s (maximum)
Thermal resistance @ 3/8" lead length:	33.5°C/W for 1N6103 through 1N6137A 20.0°C for 1N6139 through 1N6173A
Peak pulse power @ 25°C:	500W for 1N6103 to 1N6137A 1500W for 1N6139 to 1N6137A @ 10/1000µs
Steady state power @ T_L = 75°C @ 3/8" lead length from body**:**	3.0W for 1N6103 to 1N6137A 5.0W for 1N6139 to 1N6139 to 1N6173A
Steady state power @ T_A = 25°C:	2.0W for 1N6103 to 1N6137A 3.0W for 1N6139 to 1N6173A

ELECTRICAL CHARACTERISTICS

Type		Breakdown Voltage $V_{(BR)}$ Min	Test Current I_T	Working Peak Voltage V_{WM}	Max Leakage Current I_D		Max Clamping Voltage $V_{C(MAX)}$	Max Peak Pulse Current I_P		Max. Temp. Coef. of $V_{(BR)}$
500W	**1500W**	**Vdc**	**mAdc**	**Vdc**	**µAdc**	**µAdc**	**V(pk)**	**A(pk)**	**A(pk)**	**%/°C**
1N6103A	**1N6139A**	7.13	175	5.7	50	300	11.2	44.6	133.9	.06
1N6104A	**1N6140A**	7.79	150	6.2	20	100	12.1	41.3	124.0	.06
1N6105A	**1N6141A**	8.65	150	6.9	20	100	13.4	37.3	111.9	.06
1N6106A	**1N6142A**	9.50	125	7.6	20	100	14.5	34.5	103.4	.07
1N6107A	**1N6143A**	10.45	125	8.4	20	20	15.6	32.0	96.2	.07
1N6108A	**1N6144A**	11.40	100	9.1	20	20	16.9	29.6	88.8	.07
1N6109A	**1N6145A**	12.35	100	9.9	20	20	18.2	27.5	82.4	.08
1N6110A	**1N6146A**	14.25	75	11.4	20	20	21.0	23.8	71.4	.08
1N6111A	**1N6147A**	15.20	75	12.2	20	20	22.3	22.4	67.3	.08
1N6112A	**1N6148A**	17.10	65	13.7	1	10	25.1	19.9	59.8	.085
1N6113A	**1N6149A**	19.0	65	15.2	1	5	27.7	18.0	54.2	.085
1N6114A	**1N6150A**	20.9	50	16.7	1	5	30.5	16.4	49.2	.085
1N6115A	**1N6151A**	22.8	50	18.2	1	5	33.3	15.0	45.0	.09
1N6116A	**1N6152A**	25.7	50	20.6	1	5	37.4	13.4	40.1	.09
1N6117A	**1N6153A**	28.5	40	22.8	1	5	41.6	12.0	36.0	.09
1N6118A	**1N6154A**	31.4	40	25.1	1	5	45.7	10.9	32.8	.095
1N6119A	**1N6155A**	34.2	30	27.4	1	5	49.9	10.0	30.1	.095
1N6120A	**1N6156A**	37.1	30	29.7	1	5	53.6	9.3	28.0	.095
1N6121A	**1N6157A**	40.9	30	32.7	1	5	59.1	8.5	25.4	.095
1N6122A	**1N6158A**	44.7	25	35.8	1	5	64.6	7.7	23.2	.095
1N6123A	**1N6159A**	48.5	25	38.8	1	5	70.1	7.1	21.4	.095
1N6124A	**1N6160A**	53.2	20	42.6	1	5	77.0	6.5	19.5	.095
1N6125A	**1N6161A**	58.9	20	47.1	1	5	85.3	5.9	17.6	.100
1N6126A	**1N6162A**	64.6	20	51.7	1	5	97.1	5.1	15.4	.100
1N6127A	**1N6163A**	71.3	20	56.0	1	5	103.1	4.8	14.5	.100
1N6128A	**1N6164A**	77.9	15	62.2	1	5	112.8	4.4	13.3	.100

144 Market Street
Kenilworth NJ 07033 USA

phone +1.908.245-7200
fax +1.908.245-0555

sales@digitroncorp.com
www.digitroncorp.com

D I G I T R O N S E M I C O N D U C T O R S

1N6103(A) - 1N6137(A) BIDIRECTIONAL TRANSIENT SUPPRESSORS
1N6139(A) - 1N6173(A)

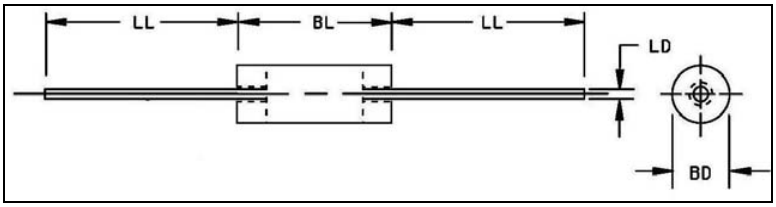
ELECTRICAL CHARACTERISTICS

Type		Breakdown Voltage $V_{(BR)}$ Min	Test Current I_T	Working Peak Voltage V_{WM}	Max Leakage Current I_D		Max Clamping Voltage $V_{C(MAX)}$	Max Peak Pulse Current I_P		Max. Temp. Coef. of $V_{(BR)}$
500W	**1500W**	**Vdc**	**mAdc**	**Vdc**	**µAdc**	**µAdc**	**V(pk)**	**A(pk)**	**A(pk)**	**%/°C**
1N6129A	**1N6165A**	86.5	15	69.2	1	5	125.1	4.0	12.0	.100
1N6130A	**1N6166A**	95.0	12	76.0	1	5	137.6	3.6	10.9	.100
1N6131A	**1N6167A**	104.5	12	86.6	1	5	151.3	3.3	9.9	.100
1N6132A	**1N6168A**	114.0	10	91.2	1	5	165.1	3.0	9.1	.100
1N6133A	**1N6169A**	123.5	10	98.8	1	5	178.8	2.8	8.4	.105
1N6134A	**1N6170A**	142.5	8	114.0	1	5	206.3	2.4	7.3	.105
1N6135A	**1N6171A**	152.0	8	121.6	1	5	218.4	2.3	6.9	.105
1N6136A	**1N6172A**	171.0	5	136.8	1	5	245.7	2.0	6.1	.110
1N6137A	**1N6173A**	190.0	5	152.0	1	5	273.0	1.8	5.5	.110
Note 4	Note 4	Note 1	Note 1	Note 1	Note 2	Note 3	Note 1	Note 2	Note 3	Note 1

Note 1: Applies to both 500W & 1500W series
Note 2: Applies only to 500W series
Note 3: Applies only to 1500W series
Note 4: Non-A part has 5% higher max surge voltage. 5% lower $V_{(BR)}$ min., I_{SM}

MECHANICAL CHARACTERISTICS

Case:	Passivated Glass
Marking:	Body Painted, Alpha-Numeric
Polarity:	No marking with bi-directional devices.



	Dimnsions			
	1N6103-1N6137 1N6103A-1N6137A			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	-	0.135	-	3.429
BL	-	0.185	-	4.699
LD	0.028	0.032	0.711	0.813
LL	1.000	-	25.400	-

	Dimensions			
	1N6139-1N6173 1N6139A-1N6173A 1500 W			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	-	0.185	-	4.699
BL	-	0.195	-	4.953
LD	0.038	0.042	0.965	1.067
LL	1.000	-	25.400	-

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.

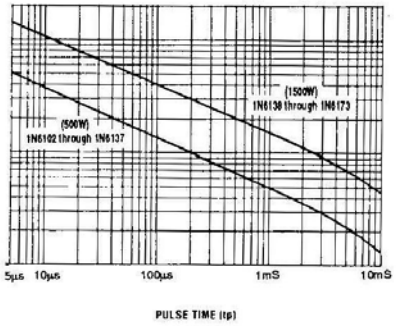
144 Market Street
Kenilworth NJ 07033 USA

phone +1.908.245-7200
fax +1.908.245-0555

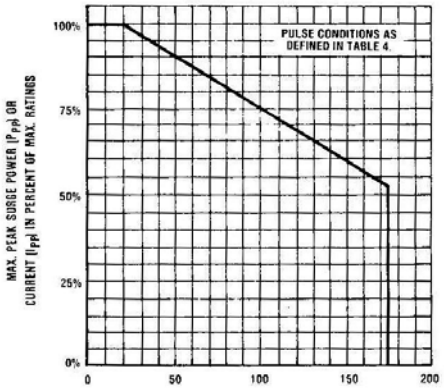
sales@digitroncorp.com
www.digitroncorp.com

D I G I T R O N S E M I C O N D U C T O R S

1N6103(A) - 1N6137(A) BIDIRECTIONAL TRANSIENT SUPPRESSORS
1N6139(A) - 1N6173(A)



PEAK SURGE POWER vs. PULSE TIME



PULSE DERATING CURVE

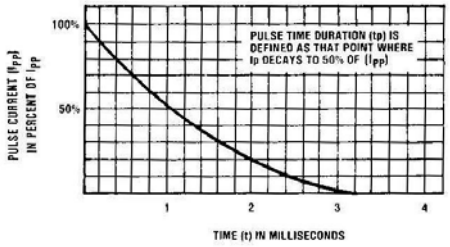
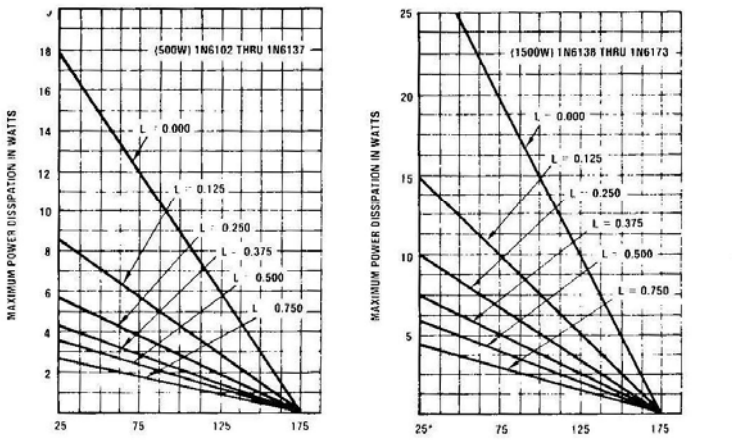
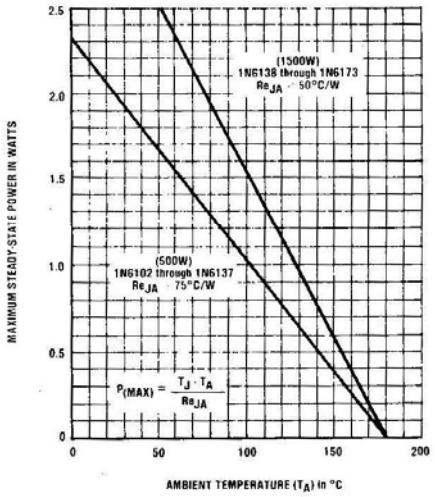


FIGURE 4
PULSE WAVE FORM



MAXIMUM POWER vs. LEAD TEMPERATURE

Maximum lead temperature in °C (T_L) at point "L" from body
(for maximum operating junction temperature with equal two-lead conditions).



STEADY STATE DERATING CURVE
FOR FREE AIR MOUNTING

144 Market Street
Kenilworth NJ 07033 USA

phone +1.908.245-7200
fax +1.908.245-0555

sales@digitroncorp.com
www.digitroncorp.com