



High-reliability discrete products
and engineering services since 1977

1N6103(A)-1N6137(A) 1N6139(A)-1N6173(A)

BIDIRECTIONAL TRANSIENT SUPPRESSORS

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

Rating	Value
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 1N6173A @ 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 1N6173A
Steady state power @ T _A = 25°C:	2.0W for 1N6103 to 1N6137A 3.0W for 1N6139 to 1N6173A

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Type		Breakdown Voltage V _(BR) Min	Test Current I _T	Working Peak Voltage V _{WM}	Max Leakage Current I ₀		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

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

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
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
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

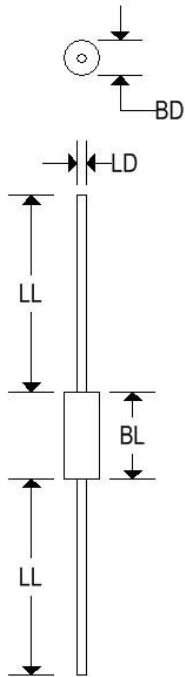
Note 4: Non-A part has 5% higher max surge voltage. 5% lower V_(BR) min., I_{SM}

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BIDIRECTIONAL TRANSIENT SUPPRESSORS

MECHANICAL CHARACTERISTICS

Case:	Digi C (1N6103A-1N6137A)
Marking:	Body Painted, Alpha-Numeric
Polarity:	No marking with bi-directional devices



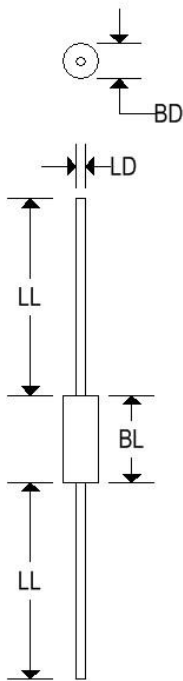
	Digi C			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	-	0.135	-	3.429
BL	-	0.185	-	4.699
LD	0.028	0.032	0.711	0.813
LL	1.000	-	25.400	-

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BIDIRECTIONAL TRANSIENT SUPPRESSORS

MECHANICAL CHARACTERISTICS

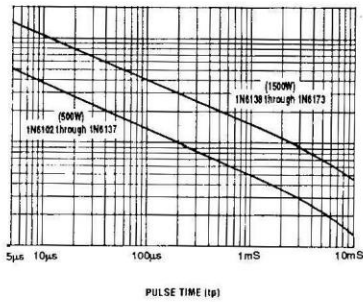
Case:	DO-201 (1N6139A-1N6173A)
Marking:	Body Painted, Alpha-Numeric
Polarity:	No marking with bi-directional devices



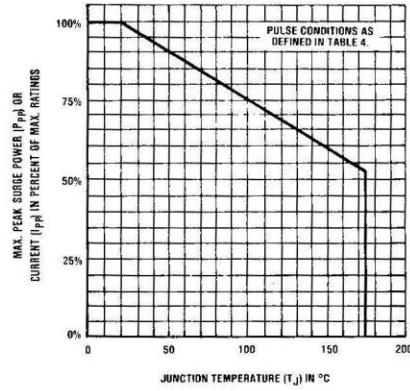
	DO-201			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	0.190	0.250	4.826	6.350
BL	0.285	0.375	7.239	9.525
LD	0.038	0.042	0.965	1.067
LL	1.000	-	25.400	-

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BIDIRECTIONAL TRANSIENT SUPPRESSORS



PEAK SURGE POWER vs. PULSE TIME



PULSE DERATING CURVE

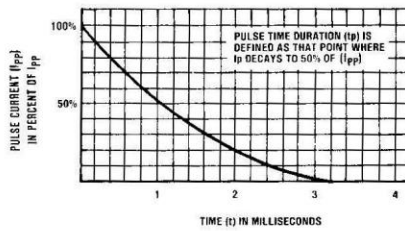
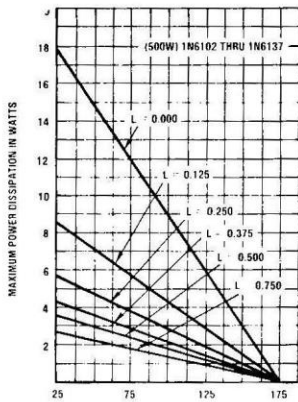
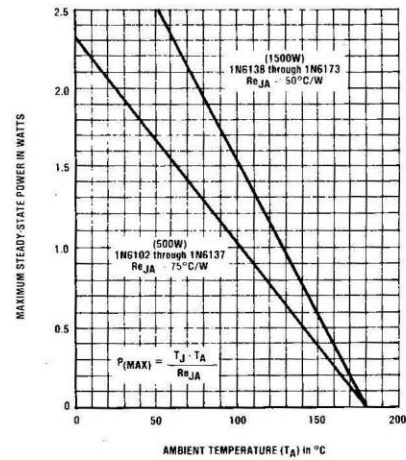
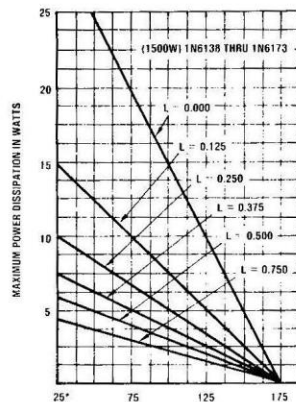


FIGURE 4
PULSE WAVE FORM



MAXIMUM POWER vs. LEAD TEMPERATURE



STEADY STATE DERATING CURVE
FOR FREE AIR MOUNTING

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