

1N6138A - 1N6173A

BIDIRECTIONAL TRANSIENT SUPPRESSOR

V_{WM} : 5.2 - 152 Volts

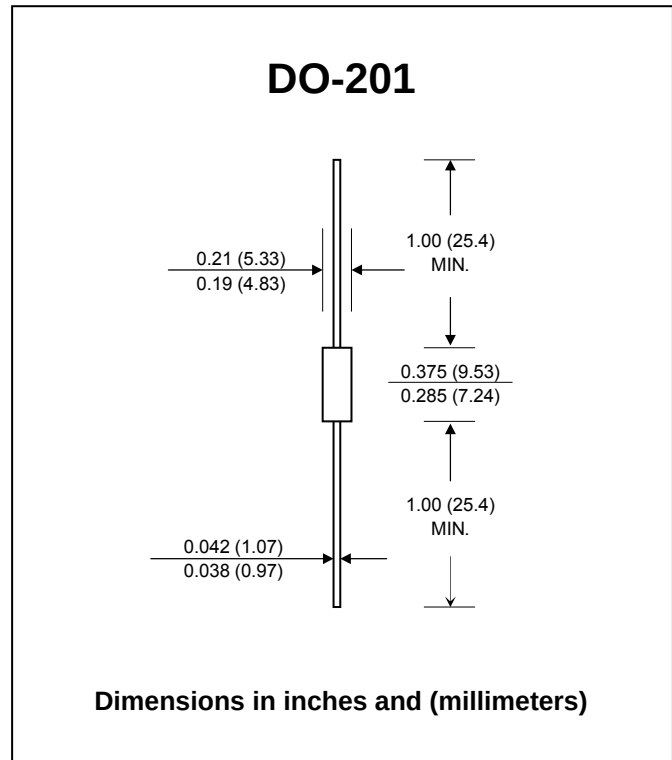
P_{PP} : 1500 Watts

FEATURES :

- * Glass passivated junction chip
- * Bidirectional transient voltage suppressor
- * Peak pulse power: 1500W at 10/1000 μ s
- * Extensive range in Working Peak "Standoff" Voltage (V_{WM}) from 5.2 to 152 V
- * High surge current
- * Excellent robust construction
- * **Pb / RoHS Free**

MECHANICAL DATA

- * Case : DO-201 Molded plastic
- * Epoxy : UL94V-0 rate flame retardant
- * Lead : Axial lead solderable per MIL-STD-202, Method 208
- * Mounting position : Any
- * Weight : 0.93 grams



MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak Pulse Power at $T_a = 25\text{ }^{\circ}\text{C}$, 10/1000 μ s	P_{PP}	1500	W
Steady State Power at $T_L = 75\text{ }^{\circ}\text{C}$, 3/8" lead length from body	P_D	5.0	W
Steady State Power at $T_a = 25\text{ }^{\circ}\text{C}$,	P_D	2.0	W
Thermal Resistance at 3/8" lead length	$R_{\theta JL}$	20	$^{\circ}\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	- 55 to + 175	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

Type No. ⁽¹⁾	Minimum Breakdown Voltage at $I_{(BR)}$		Rated Standoff Voltage	Maximum Standby Current @ V_{WM}	Maximum Clamping Voltage @ I_{PP}	Maximum Peak Pulse Current	Maximum Temperature Co-efficient of $V_{(BR)}$
	$V_{(BR)}$	$I_{(BR)}$	V_{WM}	I_D	V_C	I_{PP}	of $V_{(BR)}$
	Min.	(mA)	(V)	(μ A)	(V)	(A)	
1N6138A	6.12	175	5.2	500	10.5	142.8	0.050
1N6139A	7.13	175	5.7	300	11.2	133.9	0.060
1N6140A	7.79	150	6.2	100	12.1	124.0	0.060
1N6141A	8.65	150	6.9	100	13.4	111.9	0.060
1N6142A	9.50	125	7.6	100	14.5	103.4	0.070
1N6143A	10.45	125	8.4	20	15.6	96.2	0.070
1N6144A	11.40	100	9.1	20	16.9	88.8	0.070
1N6145A	12.35	100	9.9	20	18.2	82.4	0.080
1N6146A	14.25	75	11.4	20	21	71.4	0.080
1N6147A	15.2	75	12.2	20	22.3	67.3	0.080
1N6148A	17.1	65	13.7	10	25.1	59.8	0.085
1N6149A	19.0	65	15.2	5	27.7	54.2	0.085
1N6150A	20.9	50	16.7	5	30.5	49.2	0.085
1N6151A	22.8	50	18.2	5	33.3	45.0	0.090
1N6152A	25.7	50	20.6	5	37.4	40.1	0.090
1N6153A	28.5	40	22.8	5	41.6	36.0	0.095
1N6154A	31.4	40	25.1	5	45.7	32.8	0.095
1N6155A	34.2	30	27.4	5	49.9	30.1	0.095
1N6156A	37.1	30	29.7	5	53.6	28.0	0.095
1N6157A	40.9	30	32.7	5	59.1	25.4	0.095
1N6158A	44.7	25	35.8	5	64.6	23.2	0.095
1N6159A	48.5	25	38.8	5	70.1	21.4	0.095
1N6160A	53.2	20	42.6	5	77.0	19.5	0.095
1N6161A	58.9	20	47.1	5	85.3	17.6	0.100
1N6162A	64.6	20	51.7	5	97.1	15.4	0.100
1N6163A	71.3	20	56.0	5	103.1	14.5	0.100
1N6164A	77.9	15	62.2	5	112.8	13.3	0.100
1N6165A	86.5	15	69.2	5	125.1	12.0	0.100
1N6166A	95.0	12	76.0	5	137.6	10.9	0.100
1N6167A	104.5	12	86.6	5	151.3	9.9	0.100
1N6168A	114.0	10	91.2	5	165.1	9.1	0.100
1N6169A	123.5	10	98.8	5	178.8	8.4	0.105
1N6170A	142.5	8	114.0	5	206.3	7.3	0.105
1N6171A	152.0	8	121.6	5	218.4	6.9	0.105
1N6172A	171.0	5	136.8	5	245.7	6.1	0.110
1N6173A	190.0	5	152.0	5	273.0	5.5	0.110

Note:

(1) Part number without the A suffix has 5 % higher V_C , 5% lower minimum $V_{(BR)}$, and 5% lower I_{PP} .

RATING AND CHARACTERISTIC CURVES (1N6138A - 1N6173A)

FIG.1 - PEAK PULSE POWER VS. T_J

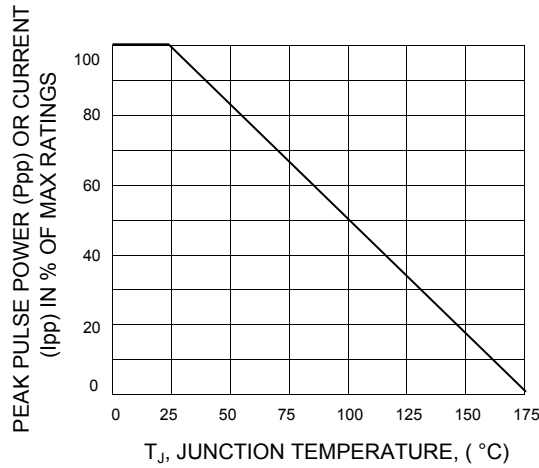


FIG.2 - PEAK PULSE POWER VS. PULSE TIME

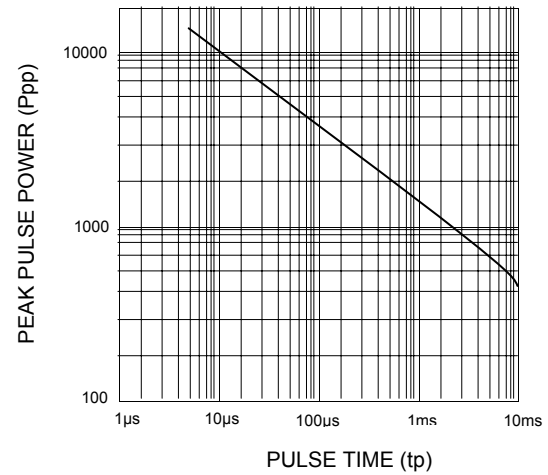


FIG.3 - MAXIMUM POWER VS. LEAD TEMPERATURE

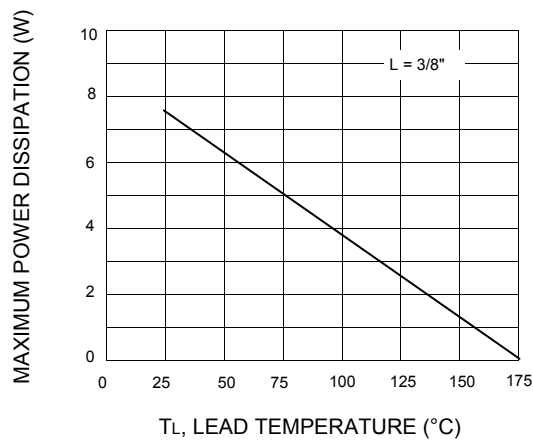


FIG.4 - STEADY-STATE DERATING CURVE FOR FREE-AIR MOUNTING

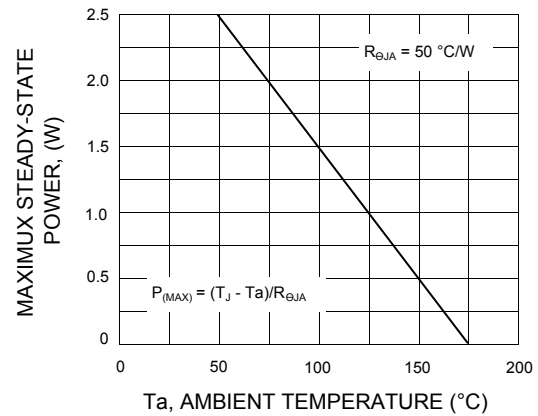


FIG.5 - PULSE WAVEFORM

