1N6138 thru 1N6173
1500W Bipolar Transient Voltage Suppressors

POWER DISCRETES

Description

Quick reference data

$V_{BR\ MIN}$ = 6.12 -180V
$I_{(BR)}$ = 5mA - 175mA
V_{RWM} = 5.2 - 152V
V_C (max) = 11V - 286V

Features

- Low dynamic impedance
- 1500 watt peak pulse power
- 7.5W continuous at T_L = 25°C

These products are qualified to MIL-PRF-19500/516 and are preferred parts as listed in MIL-HDBK-5961. They can be supplied fully released as JANTX ,JANTXV and JANS versions.

Electrical Specifications

Electrical specifications @ T_A = 25°C unless otherwise specified.

Device Type	Minimum Breakdown Voltage $V_{(BR)}$ @ $I_{(BR)}$	Test Current $I_{(BR)}$	Working Pk. Reverse Voltage V_{RWM}	Maximum Reverse Current I_R	Maximum Clamping Voltage V_C @ I_P	Maximum Pk. Pulse Current I_P T_P = (1)	Temp. Coeff. of $V_{(BR)}$ $\alpha_{(VZ)}$	Maximum Reverse Current I_{R2} @ 150°C
	Volts	mA	Volts	µA	Volts	Amps	%/ °C	µA
1N6138	6.12	175	5.2	500	11.0	136.4	0.05	12,000
1N6139	6.75	175	5.7	300	11.8	127.1	0.06	3,000
1N6140	7.38	150	6.2	100	12.7	118.1	0.06	2,000
1N6141	8.19	150	6.9	100	14.0	107.1	0.06	1,200
1N6142	9.0	125	7.6	100	15.2	98.7	0.07	800
1N6143	9.9	125	8.4	20	16.3	92.0	0.07	800
1N6144	10.8	100	9.1	20	17.7	84.7	0.07	600
1N6145	11.7	100	9.9	20	19.0	78.9	0.08	600
1N6146	13.5	75	11.4	20	21.9	68.5	0.08	400
1N6147	14.4	75	12.2	20	23.4	64.1	0.08	400
1N6148	16.2	65	13.7	10	26.3	57.0	.085	400
1N6149	18.0	65	15.2	5	29.0	51.7	.085	400
1N6150	19.8	50	16.7	5	31.9	47.0	.085	400
1N6151	21.6	50	18.2	5	34.8	43.1	.09	400
1N6152	24.3	50	20.6	5	39.2	38.3	.09	400
1N6153	27.0	40	22.8	5	43.6	34.4	.09	400
1N6154	29.7	40	25.1	5	47.9	31.3	.095	400
1N6155	32.4	30	27.4	5	52.3	28.7	.095	400

Electrical Specifications

Electrical specifications @ T_A = 25°C unless otherwise specified.

Device Type	Minimum Breakdown Voltage $V_{(BR)}$ @ $I_{(BR)}$	Test Current $I_{(BR)}$	Working Pk. Reverse Voltage V_{RWM}	Maximum Reverse Current I_{R1}	Maximum Clamping Voltage V_C @ I_P	Maximum Pk. Pulse Current I_P T_P = (1)	Temp. Coeff. of $V_{(BR)}$ $\alpha_{(VZ)}$	Maximum Reverse Current I_{R2} @ 150°C
	Volts	mA	Volts	µA	Volts	Amps	%/ °C	µA
1N6156	35.1	30	29.7	5	56.2	26.7	0.095	400
1N6157	38.7	30	32.7	5	62.0	24.2	0.095	400
1N6158	42.3	25	35.8	5	67.7	22.2	0.095	400
1N6159	45.9	25	38.8	5	73.5	20.4	0.095	400
1N6160	50.4	20	42.6	5	80.7	18.6	0.095	400
1N6161	55.8	20	47.1	5	89.3	16.8	.100	400
1N6162	61.2	20	51.7	5	98.0	15.3	.100	400
1N6163	67.5	20	56.0	5	108.1	13.9	.100	400
1N6164	73.8	15	62.2	5	118.2	12.7	.100	400
1N6165	81.9	15	69.2	5	131.1	11.4	.100	400
1N6166	90.0	12	76.0	5	144.1	10.4	.100	400
1N6167	99.0	12	83.6	5	158.5	9.5	.100	400
1N6168	108.0	10	91.2	5	172.9	8.7	.100	400
1N6169	117.0	10	98.8	5	187.3	8.0	.100	400
1N6170	135.0	8	114.0	5	216.2	6.9	.100	400
1N6171	144.0	8	121.6	5	228.8	6.6	.100	400
1N6172	162.0	5	136.8	5	257.4	5.8	.100	400
1N6173	180.0	5	152.0	5	286.0	5.2	.100	400

Note:
(1) See Figure 4 graph.

Typical Characteristics

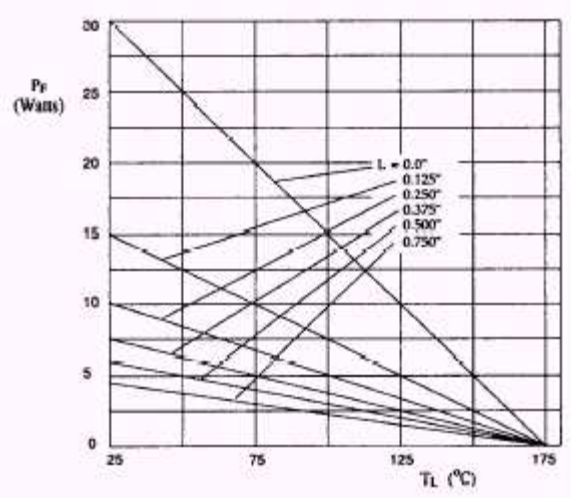


Figure 1. Maximum power vs. lead temperature

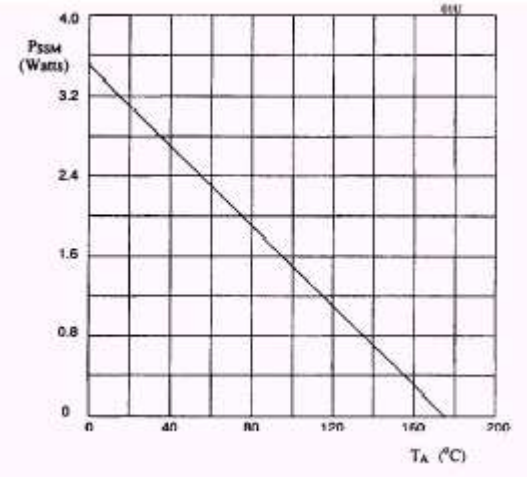


Figure 2. Steady state derating characteristic
for free air mounting

Typical Characteristics

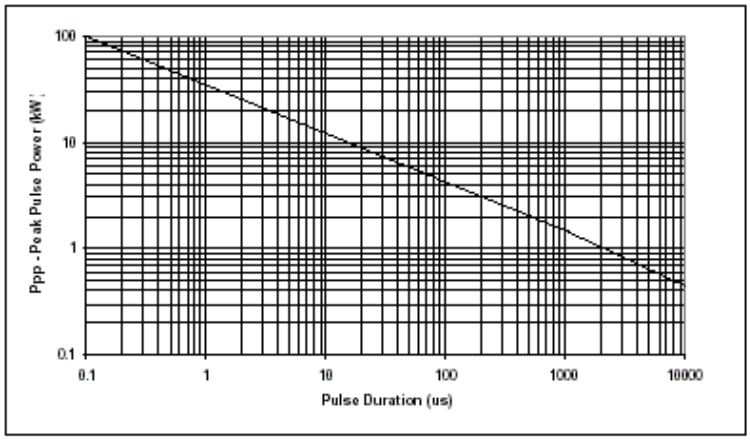


Figure 3. Peak pulse power vs. pulse time

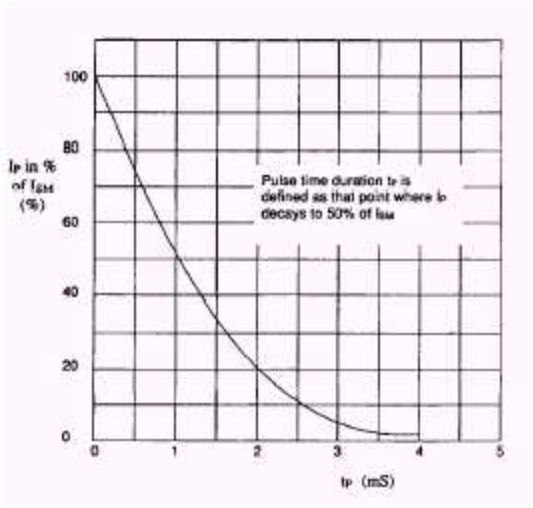


Figure 4. Pulse waveform

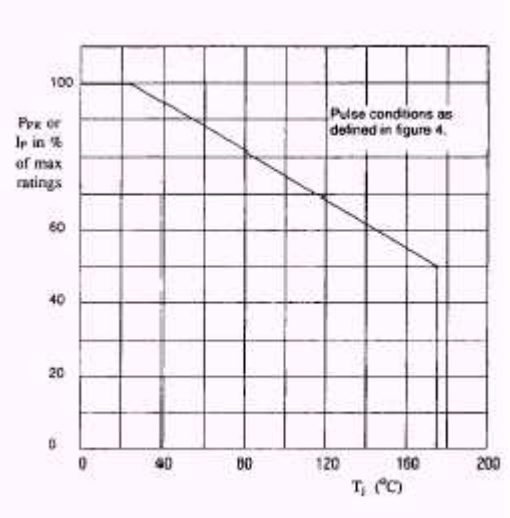


Figure 5. Pulse derating curve

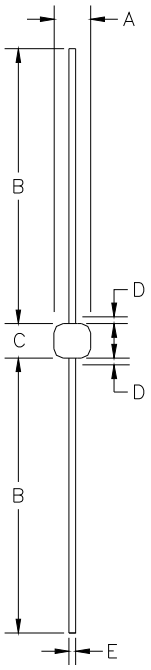
POWER DISCRETES

Ordering Information

Part Number	Description
1N6138 thru 1N6173	Axial leaded hermetically sealed(1)

Note:
(1) Available in bulk and tape and reel packaging. Please consult factory for quantities.

Outline Drawing



Dimensions					
DIM[N]	Inches		Millimeters		Note
	MIN	MAX	MIN	MAX	
A	.135	0.185	3.4	4.7	-
B	.90	1.30	22.9	33.0	-
C	.140	.195	3.5	5.0	-
D	-	.030	-	.80	1
E	0.036	.042	.91	1.07	-

Note:
(1) Lead diameter uncontrolled over this region.

Contact Information

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