

SEMTECH

**1500W BI-POLARITY TRANSIENT
VOLTAGE SUPPRESSORS**

**1N6138
thru
1N6173**

January 16, 1998

TEL:805-498-2111 FAX:805-498-3804 WEB:http://www.semtech.com

**AXIAL LEADED, HERMETICALLY SEALED, 1500 WATT
TRANSIENT VOLTAGE SUPPRESSORS**

**QUICK REFERENCE
DATA**

- Low dynamic impedance
 - Hermetically sealed in Metoxilite fused metal oxide
 - 1500 Watt peak pulse power
 - 7.5 Watt continuous
 - Available in JAN, JANTX and JANTXV versions
- $V_{BR\ MIN} = 6.12 - 180V$
 - $I_{(BR)} = 5 - 175mA$
 - $V_{RWM} = 5.2 - 152V$
 - $V_{C\ MAX} = 11 - 273V$

ELECTRIAL SPECIFICATIONS (@ 25°C UNLESS OTHERWISE SPECIFIED)

Device Type	Minimum Breakdown Voltage $V_{(BR)}$ @ $I_{(BR)}$	Test Current $I_{(BR)}$	Working Pk. Reverse Voltage V_{RWM}	Max. Reverse Current I_R	Maximum Clamping Voltage V_C @ I_P	Maximum Pk. Pulse Current I_P $t_p = 8.3mS$	Temp. Coeff of $V_{(BR)}$ α_{VZ}	Maximum Reverse Current I_R @ 150°C
	Volts	mA	Volts	μA	Volts	Amps	%/°C	μA
1N6138	6.12	175	5.2	500	11.0	136.4	.05	12000
1N6139	6.75	175	5.7	300	11.8	127.1	.06	3000
1N6140	7.38	150	6.2	100	12.7	118.1	.06	2000
1N6141	8.19	150	6.9	100	14.0	107.1	.06	1200
1N6142	9.00	125	7.6	100	15.2	98.7	.07	800
1N6143	9.90	125	8.4	20	16.3	92.0	.07	800
1N6144	10.8	100	9.1	20	17.7	84.7	.07	600
1N6145	11.7	100	9.9	20	19.0	78.9	.08	600
1N6146	13.5	75	11.4	20	21.9	68.5	.08	400
1N6147	14.4	75	12.2	20	23.4	64.1	.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
1N6156	35.1	30	29.7	5	56.2	26.7	.095	400
1N6157	38.7	30	32.7	5	62.0	24.2	.095	400
1N6158	42.3	25	35.8	5	67.7	22.2	.095	400
1N6159	45.9	25	38.8	5	73.5	20.4	.095	400
1N6160	50.4	20	42.6	5	80.7	18.6	.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

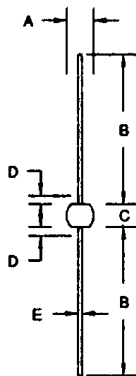


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These parts are qualified to MIL-S-19500/516 and are preferred parts as listed in MIL-STD-701

They can be supplied fully released as JAN, JANTX and JANTXV versions.

* Parts listed are 10% tolerance. 5% tolerance can be ordered by placing an "A" suffix on part numbers, eg. 1N6160A



G96

DIM #	DIMENSIONS				NOTE
	MM		INCHES		
A	3.4	4.7	.135	.185	-
B	22.9	33.0	.90	1.30	-
C	3.5	5.0	.140	.195	-
D	-	.80	-	.030	1
E	.91	1.07	.036	.042	-

NOTES:

- LEAD DIAMETER UNCONTROLLED OVER THIS REGION.

OPERATING TEMP -65°C to +175°C
STORAGE TEMP -65°C to +175°C

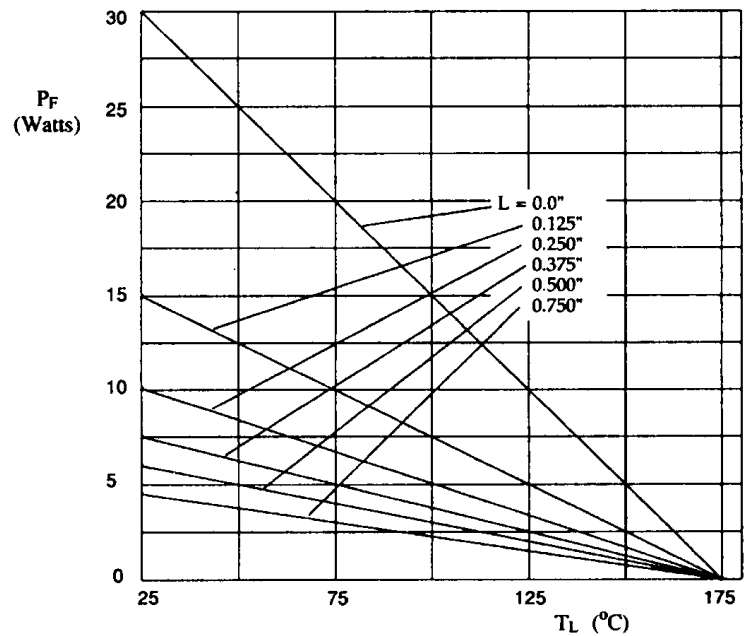


Figure 1. Maximum power versus lead temperature.

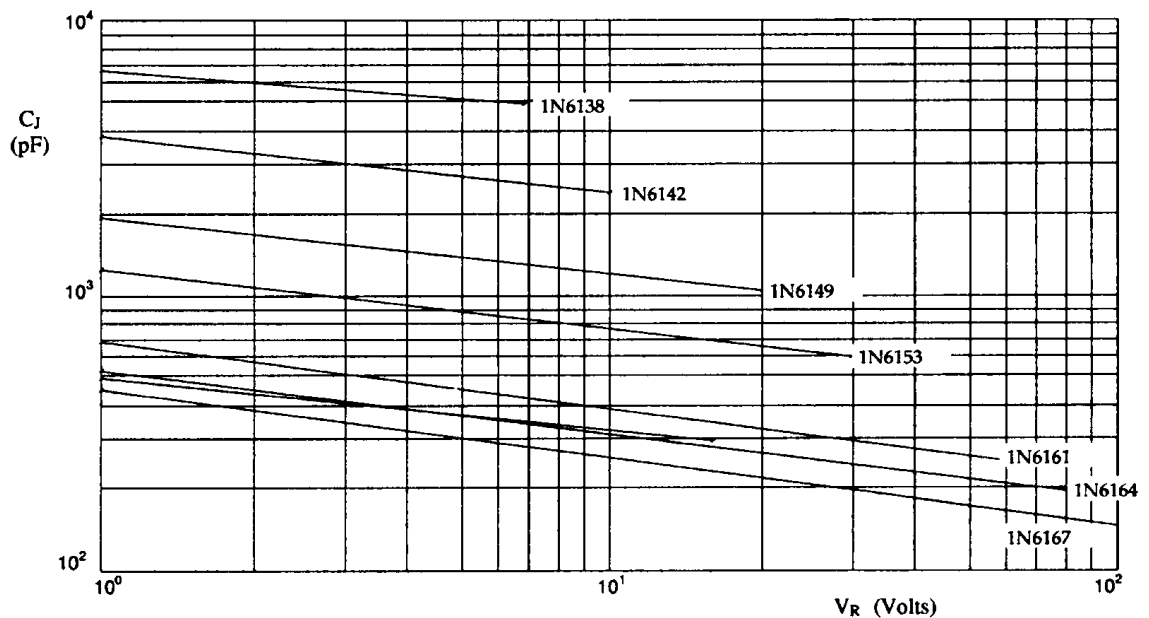


Fig 2. Typical junction capacitance versus reverse voltage.

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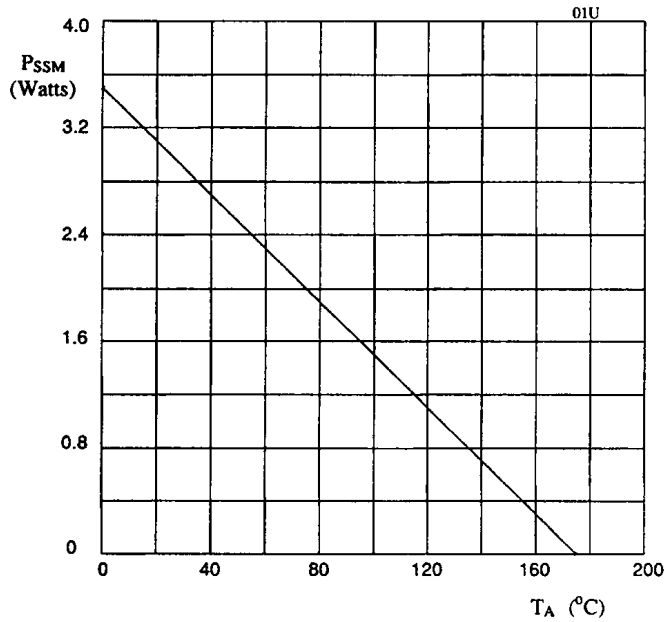


Fig 3. Steady state derating characteristic for free air mounting

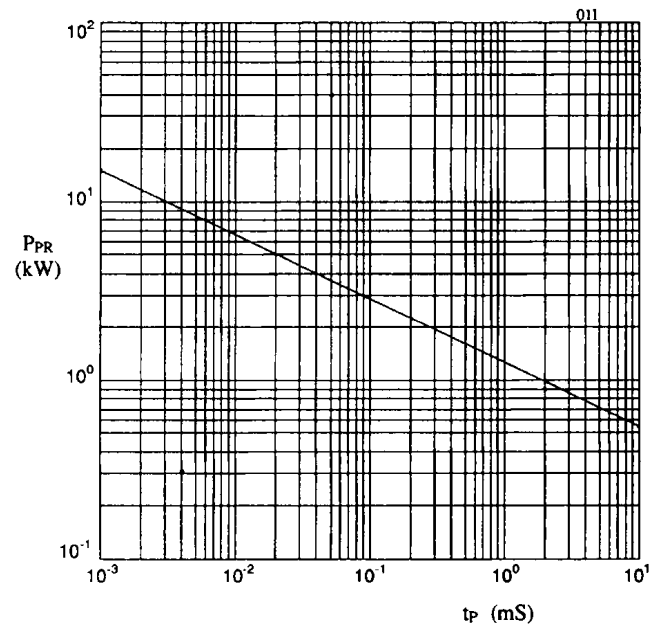


Fig 4. Peak pulse power versus pulse time.

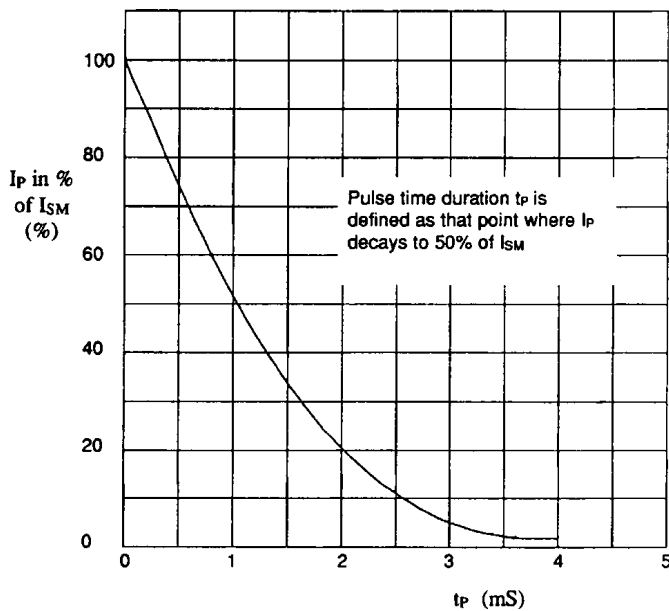


Fig 5. Pulse waveform

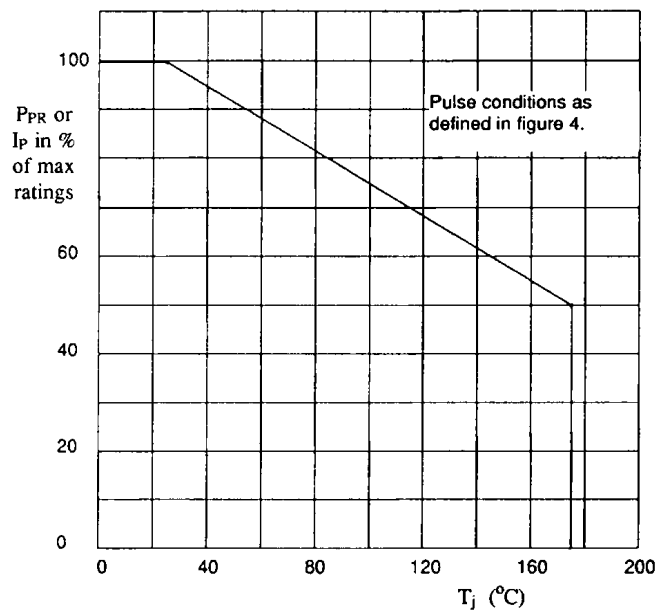


Fig 6. Pulse derating curve