

# POWER ZENERS

## 1.5 Watt, Military

1N4461-1N4496  
JAN, JANTX & JANTXV

### FEATURES

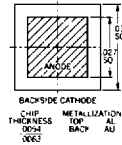
- 5 Times Greater Surge Rating than JAN1N3016 Series
- Low Reverse Current: to 50nA
- ¼ Size of Conventional 1 Watt Zeners

### DESCRIPTION

Fused-in-glass, metallurgically bonded  
1.5 watt zeners, qualified to MIL-S-19500/406.

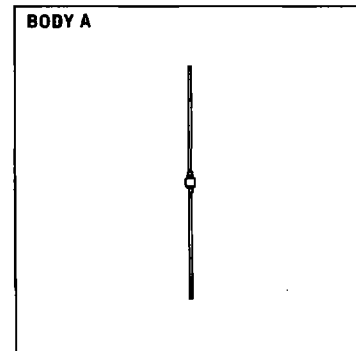
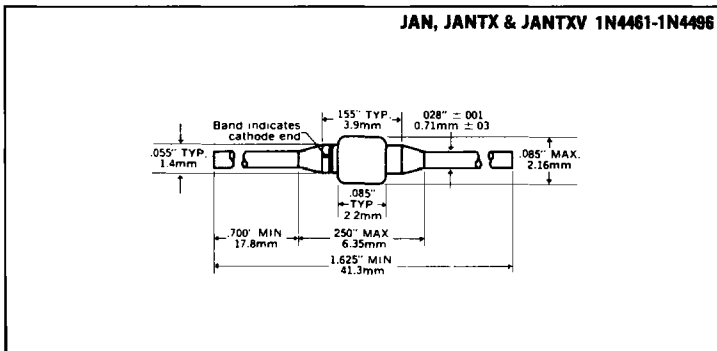
### ABSOLUTE MAXIMUM RATINGS

Zener Voltage, $V_z$	6.8 to 200V
Continuous Current	See Table
Surge Current (8.3ms)	See Table
Surge Power	See Graph
Power	See Lead Temperature Derating Curve
Storage and Operating Temperature	-65°C to +175°C



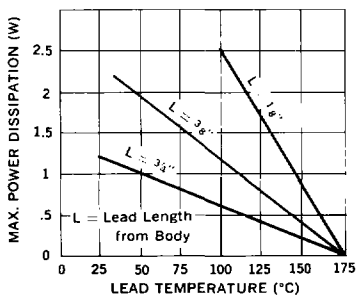
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### MECHANICAL SPECIFICATIONS

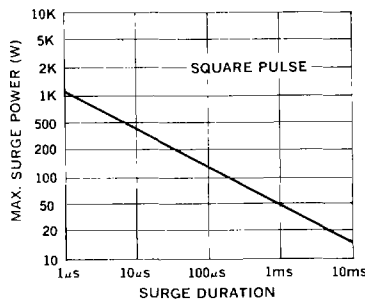


THESE DEVICES ALSO AVAILABLE IN SURFACE MOUNT PACKAGE. SEE SECTION 11.

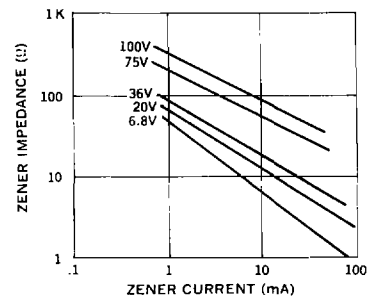
**Power Dissipation vs. Lead Temperature Derating Curve**



**Max. Surge Power vs. Surge Duration**



**Typical Zener Impedance vs. Zener Current**



Type	Electrical Specifications at 25°C								Maximum Ratings	
	Nominal Zener Voltage † V <sub>Z</sub> @ I <sub>ZT</sub>	Test Current I <sub>ZT</sub>	Max. Zener Impedance ‡			Voltage ** Regulation ΔBV Max	Maximum Reverse Leakage Current		Maximum Cont. Current I <sub>ZM</sub>	Maximum Surge Current †† I <sub>S</sub>
			Z <sub>Z</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub>	I <sub>ZK</sub>		I <sub>R</sub> @ V <sub>R</sub>	V <sub>R</sub>		
	±5% Tolerance	Volts	mA	Ohms	Ohms	mA	Volts	μA	Volts	mA
1N4461	6.8	37	2.5	200	1.0	.30	5.0	4.08	210	5.0
1N4462	7.5	34	2.5	400	.5	.35	1.0	4.50	191	4.5
1N4463	8.2	31	3.0	400	.5	.40	.50	4.92	174	3.9
1N4464	9.1	28	4.0	500	.5	.45	.30	5.46	157	3.4
1N4465	10	25	5.0	500	.25	.50	.30	8.0	143	3.0
1N4466	11	23	6.0	550	.25	.55	.30	8.8	130	2.6
1N4467	12	21	7.0	550	.25	.60	.20	9.6	119	2.4
1N4468	13	19	8.0	550	.25	.65	.10	10.4	110	2.2
1N4469	15	17	9.0	600	.25	.75	.05	12.0	95	1.8
1N4470	16	15.5	10.0	600	.25	.80	.05	12.8	90	1.6
1N4471	18	14	11.0	650	.25	.83	.05	14.4	79	1.4
1N4472	20	12.5	12.0	650	.25	.95	.05	16.0	71	1.2
1N4473	22	11.5	14	650	.25	1.0	.05	17.6	65	1.1
1N4474	24	10.5	16	700	.25	1.1	.05	19.2	60	.90
1N4475	27	9.5	18	700	.25	1.3	.05	21.6	53	.80
1N4476	30	8.5	20	750	.25	1.4	.05	24.0	48	.75
1N4477	33	7.5	25	800	.25	1.5	.05	26.4	43	.66
1N4478	36	7.0	27	850	.25	1.7	.05	28.8	40	.60
1N4479	39	6.5	30	900	.25	1.8	.05	31.2	37	.54
1N4480	43	6.0	40	950	.25	1.9	.05	34.4	33	.48
1N4481	47	5.5	50	1000	.25	2.1	.05	37.6	30	.45
1N4482	51	5.0	60	1100	.25	2.3	.05	40.8	28	.42
1N4483	56	4.5	70	1300	.25	2.5	.05	44.8	26	.39
1N4484	62	4.0	80	1500	.25	2.7	.05	49.6	23	.35
1N4485	68	3.7	100	1700	.25	3.0	.05	54.4	21	.32
1N4486	75	3.3	130	2000	.25	3.3	.05	60.0	19	.29
1N4487	82	3.0	160	2500	.25	3.6	.05	65.6	17	.26
1N4488	91	2.8	200	3000	.25	4.0	.05	72.8	16	.23
1N4489	100	2.5	250	3100	.25	4.4	.25	80.0	14	.20
1N4490	110	2.0	300	4000	.25	5.0	.25	88.0	13	.19
1N4491	120	2.0	400	4500	.25	5.5	.25	96.0	12	.18
1N4492	130	1.9	500	5000	.25	6.0	.25	104	11	.16
1N4493	150	1.7	700	6000	.25	7.0	.25	120	9.5	.14
1N4494	160	1.6	1000	6500	.25	8.0	.25	128	8.9	.12
1N4495	180	1.4	1300	7000	.25	10.0	.25	144	7.9	.10
1N4496	200	1.2	1500	8000	.25	12.0	.25	160	7.2	.08

† All Zener voltages are measured with an automated test set using a 35 millisecond test time. Longer or shorter test times will have a corresponding effect on the measured value due to heating effects.

‡ Zener impedance is derived from the 60 cycle AC Voltage created when AC current with RMS value of 10% of DC Zener test current is superimposed on the test current.

\*\* ΔBV is obtained by measuring the voltage change when the test current is changed from 10% to 50% of I<sub>Z</sub> max under DC conditions. During this measurement the leads are heat sunk .375 inch from the body and maintained at 25°C.

†† Ratings shown are for peak sinusoidal surge current of 8.3 ms duration, non-repetitive. The 8.3 ms square pulse rating is 71% of the value shown. Rating exceeds JEDEC Registered Specification.