

# POWER ZENERS

## 3 Watt

UZ706 SERIES  
UZ806 SERIES  
UZ706HR2 SERIES  
UZ806HR2 SERIES

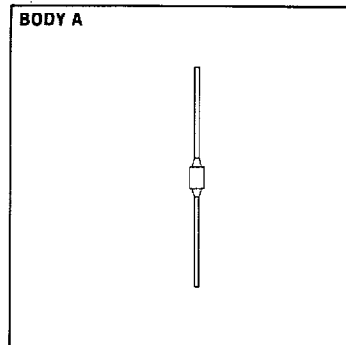
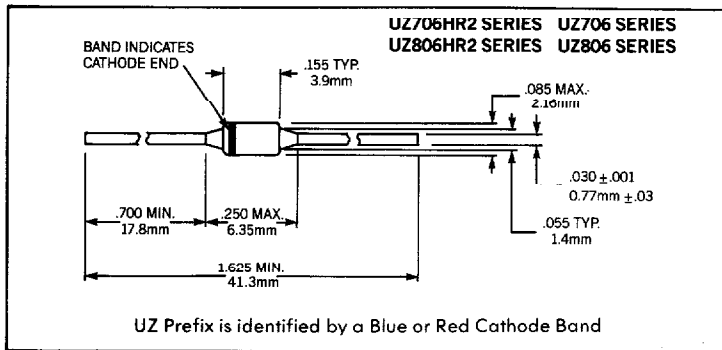
### FEATURES

- 10 Times Greater Surge Rating than Conventional 1 Watt Types
- Small Physical Size

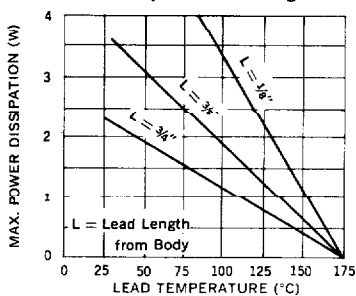
### ABSOLUTE MAXIMUM RATINGS

Zener Voltage, $V_z$ .....	6.8 to 400V
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

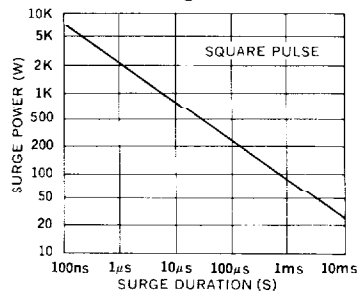
### MECHANICAL SPECIFICATIONS



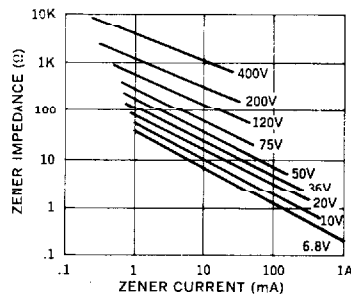
**Power Dissipation vs. Lead Temperature Derating Curve**



**Surge Power vs. Surge Duration**



**Typical Zener Impedance vs. Zener Current**



### OPTIONAL HIGH RELIABILITY (HR2) SCREENING

The following tests are performed on 100% of the devices specified UZ706 through UZ140HR2.

SCREEN	MIL-STD-750 METHOD	CONDITIONS
1. High Temperature	1032	24 Hours @ $T_A = 175^\circ\text{C}$
2. Temperature Cycling	1051	C, 20 Cycles, -65 to +175°C. No dwell required @ 25°C ≥ 10 min. at extremes
3. Hermetic Seal @ Gross Leak	1071	E, ZYGLO
4. Interim Electrical Parameters	GO/NO GO	$V_z + I_R$ @ 25°C
5. Power Burn-in	1038	B, 96 Hours, $T_A = 25^\circ\text{C}$ , $I_z$ adjusted so that $150^\circ\text{C} \leq T_j \leq 175^\circ\text{C}$
6. Final Electrical Parameters	GO/NO GO	$V_z + I_R$ @ 25°C PDA = 10% (Final Electricals)

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 ‡	Maximum Reverse Leakage Current			Typ. Temp. Coefficient T <sub>C</sub> @ I <sub>ZT</sub>	Maximum Continuous Current * I <sub>ZM</sub>	Maximum Surge Current †† I <sub>S</sub>
				Z <sub>Z</sub> @ I <sub>ZT</sub>	I <sub>R</sub> @ V <sub>R</sub>	± 5% V <sub>R</sub>	± 10% V <sub>R</sub>			
±5% Tolerance	Jedec** Registration	Volts	mA	Ohms	µA	Volts	Volts	%/°C	mA	Amps
UZ706/706HR2	1N5063	6.8	75	2	500	5.2	4.9	.04	440	10.0
UZ707/707HR2	1N5064	7.5	75	2	300	5.7	5.4	.04	400	8.0
UZ708/708HR2	1N5065	8.2	75	3	200	6.2	5.9	.05	360	7.0
UZ709/709HR2	1N5066	9.1	75	3	100	6.9	6.6	.05	330	6.0
UZ710/710HR2	1N5067	10.0	75	4	40	7.6	7.2	.06	300	5.0
UZ712/712HR2	1N4883	12	65	5	10	9.1	8.6	.07	250	4.0
UZ713/713HR2	1N5069	13	50	6	10	9.9	9.3	.07	230	4.0
UZ714/714HR2	1N5070	14	50	6	10	10.6	10.1	.07	210	4.0
UZ715/715HR2	1N5071	15	50	6	10	11.4	10.8	.07	200	3.0
UZ716/716HR2	1N5072	16	50	7	5	12.2	11.5	.07	185	3.0
UZ718/718HR2	1N5073	18	40	8	5	13.7	12.9	.08	170	2.0
UZ720/720HR2	1N4884	20	40	9	5	15.2	14.4	.08	150	2.0
UZ722/722HR2	1N5074	22	30	10	5	16.7	15.8	.08	135	2.0
UZ724/724HR2	1N5075	24	30	10	5	18.2	17.3	.08	125	1.5
UZ727/727HR2	1N5076	27	25	12	1	20.6	19.4	.09	110	1.5
UZ730/730HR2	1N5077	30	25	15	1	22.8	21.6	.090	100	1.5
UZ733/733HR2	1N5078	33	20	21	1	25.1	23.7	.090	90	1.2
UZ736/736HR2	1N5079	36	20	21	1	27.4	25.9	.090	85	1.0
UZ740/740HR2	1N5081	40	20	27	1	30.4	28.8	.095	75	1.0
UZ745/745HR2	1N5003	45	15	37	1	34.2	32.4	.095	65	0.8
UZ750/750HR2	1N5085	50	15	50	1	38.0	36.0	.095	60	0.8
UZ756/756HR2	1N5087	56	10	70	1	42.6	40.3	.095	55	0.7
UZ760/760HR2	1N5088	60	10	70	1	45.7	43.2	.095	50	0.6
UZ770/770HR2	1N5091	70	10	90	1	53.3	50.5	.095	45	0.6
UZ775/775HR2	1N5092	75	10	100	1	56.0	54.0	.095	40	0.5
UZ780/780HR2	1N5093	80	10	115	1	60.8	57.7	.095	35	0.4
UZ790/790HR2	1N4096	90	8.0	150	1	68.5	64.8	.095	30	0.4
UZ110/110HR2	1N4097	100	5.0	175	1	76.0	72.0	.100	30	0.4
UZ111/111HR2	1N5096	110	5.0	250	1	83.6	79.2	.100	25	0.3
UZ112/112HR2	1N5097	120	5.0	325	1	91.2	86.4	.100	25	0.2
UZ113/113HR2	1N5098	130	5.0	375	1	98.8	93.6	.100	20	0.20
UZ114/114HR2	1N5099	140	5.0	550	1	106	101	.100	20	0.20
UZ115/115HR2	1N4098	150	5.0	650	1	114	108	.100	20	0.20
UZ116/116HR2	1N5100	160	4.0	700	1	122	115	.100	20	0.15
UZ117/117HR2	1N5101	170	4.0	750	1	129	122	.100	18	0.15
UZ118/118HR2	1N5102	180	4.0	850	1	137	129	.100	18	0.10
UZ119/119HR2	1N6103	190	4.0	900	1	144	137	.100	15	0.10
UZ120/120HR2	1N5104	200	4.0	950	1	152	144	.100	15	0.10
UZ122/122HR2	1N5105	220	3.0	1100	1	167	158	.100	15	0.09
UZ124/124HR2	1N5106	240	3.0	1300	1	182	173	.105	12	0.09
UZ126/126HR2	1N5107	260	3.0	1500	1	198	187	.105	12	0.08
UZ128/128HR2	1N5109	280	3.0	1700	1	213	202	.105	10	0.08
UZ130/130HR2	1N5110	300	3.0	1900	1	228	216	.105	10	0.07
UZ132/132HR2	1N5111	320	2.0	2100	1	243	230	.105	9	0.07
UZ134/134HR2	1N5113	340	2.0	2400	1	258	245	.110	9	0.06
UZ136/136HR2	1N5114	360	2.0	2700	1	274	259	.110	8	0.06
UZ138/138HR2	1N5115	380	2.0	3000	1	289	274	.110	8	0.06
UZ140/140HR2	1N5117	400	2.0	3500	1	304	288	.110	7	0.06

\* Specify 20% voltage tolerance by changing first numeral of type number from 7 to 9. (UZ709 becomes UZ909) or from 1 to 3 (UZ111 becomes UZ311).  
 Specify 10% voltage tolerance by changing first numeral of type number from 7 to 8. (UZ709 becomes UZ809) or from 1 to 2 (UZ111 becomes UZ211).  
 \*\* Jedec registration applies to ±5% tolerance zeners only.  
 † All zener voltages are measured with an automated test set using a 35 ms 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.  
 \* Maximum current based on 3 watt rating. See lead temperature derating curves for proper mounting methods.  
 †† Figures shown are for a peak sinusoidal surge current of 0.3ms duration using 60 cycle AC. The 0.3ms square pulse rating is 71% of the value shown.