POWER ZENERS
3 Watt

UZ706 SERIES
UZ806 SERIES
UZ706HR2 SERIES
UZ806HR2 SERIES

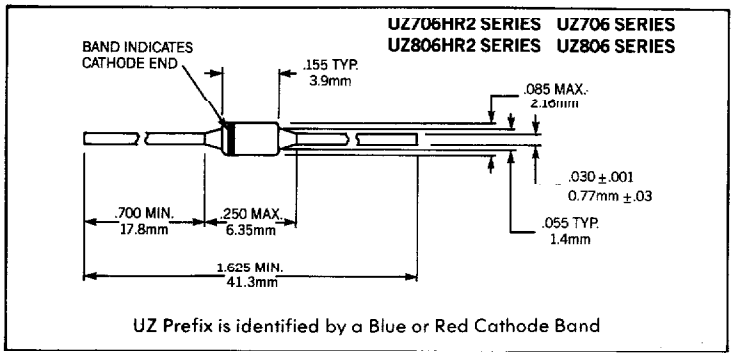
4

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

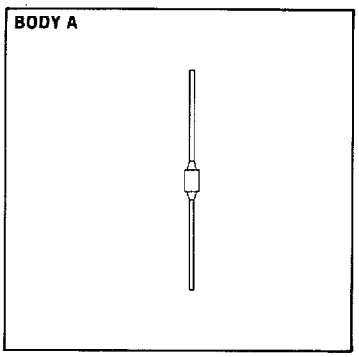
DESCRIPTION
Fused-in-glass metallurgically bonded 3 watt zener diodes.

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

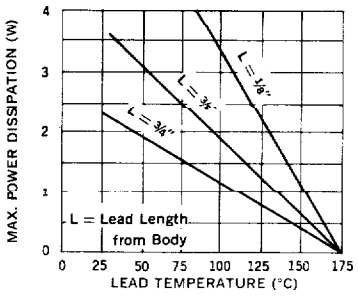
MECHANICAL SPECIFICATIONS



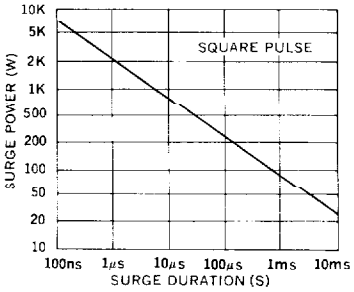
UZ Prefix is identified by a Blue or Red Cathode Band



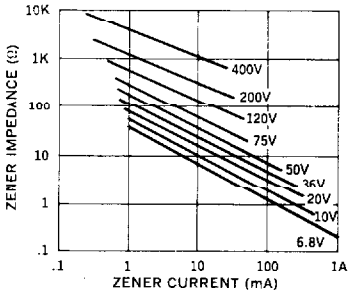
Power Dissipation vs. Lead Temperature Derating Curve



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°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°C, I_Z adjusted so that 150°C ≤ T_j ≤ 175°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_Z @ I_{ZT}	Test Current I_{ZT}	Max. Zener Impedance § Z_Z @ I_{ZT}	Maximum Reverse Leakage Current I_R @ V_R	Maximum Reverse Leakage Current ± 5% V_R	Maximum Reverse Leakage Current ± 10% V_R	Typ. Temp. Coefficient T_C @ I_{ZT}	Maximum Continuous Current★ I_{ZM}	Maximum Surge Current‡ I_S
±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	1N5083	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	1N5103	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 8.3ms duration using 60 cycle AC. The 8.3ms square pulse rating is 71% of the value shown.

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