POWER ZENERS
3 Watt

UZ706 SERIES
UZ806 SERIES
UZ706HR SERIES

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

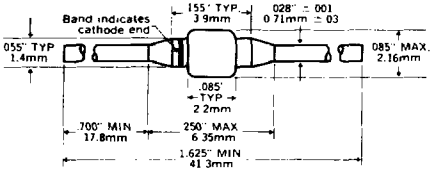
DESCRIPTION
Fused-in-glass metallurgically bonded 3 watt zener diodes.

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

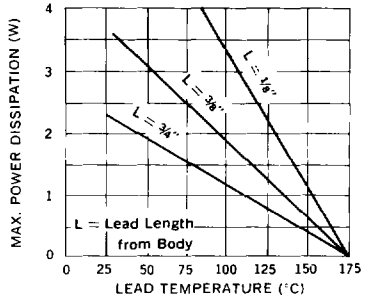
UZ706 SERIES
UZ806 SERIES
UZ706HR SERIES



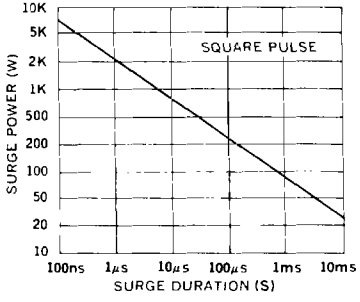
UZ Prefix is identified by a Blue or Red Cathode Band

BODY A

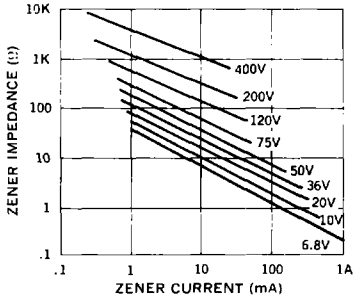
Power Dissipation vs. Lead Temperature Derating Curve



Surge Power vs. Surge Duration



Typical Zener Impedance vs. Zener Current



OPTIONAL HIGH RELIABILITY SCREENING

The following tests are performed on 100% of the devices specified UZ706 through UZ140HR.

SCREEN	MIL-STD-750 METHOD	CONDITIONS
1. High Temperature Life (Stabilization Bake)	1032	24 Hours @ T_A = 175°C
2. Thermal Shock (Temperature Cycling)	1051	10 Cycles @ T_A = (−55°C to +150°C)
3. Interim Electrical Parameters	—	I_R and V_Z @ 25°C
4. Power Burn-In	1038	96 Hours @ T_J = 160°C ± 15°C $T_A \geq 25°C, \leq 100°C$, $P_D \geq 25°C \leq 75\%$ Rating
5. Final Electrical and Delta Parameters	Go/No Go	ΔI_R ± 100% ΔV_Z ± 2.5%

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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	± 5% V_R	± 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
UZ706/706HR	1N5063	6.8	75	2	500	5.2	4.9	.04	440	10.0
UZ707/707HR	1N5064	7.5	75	2	300	5.7	5.4	.04	400	8.0
UZ708/708HR	1N5065	8.2	75	3	200	6.2	5.9	.05	360	7.0
UZ709/709HR	1N5066	9.1	75	3	100	6.9	6.6	.05	330	6.0
UZ710/710HR	1N5067	10.0	75	4	40	7.6	7.2	.06	300	5.0
UZ712/712HR	1N4883	12	65	5	10	9.1	8.6	.07	250	4.0
UZ713/713HR	1N5069	13	50	6	10	9.9	9.3	.07	230	4.0
UZ714/714HR	1N5070	14	50	6	10	10.6	10.1	.07	210	4.0
UZ715/715HR	1N5071	15	50	6	10	11.4	10.8	.07	200	3.0
UZ716/716HR	1N5072	16	50	7	5	12.2	11.5	.07	185	3.0
UZ718/718HR	1N5073	18	40	8	5	13.7	12.9	.08	170	2.0
UZ720/720HR	1N4884	20	40	9	5	15.2	14.4	.08	150	2.0
UZ722/722HR	1N5074	22	30	10	5	16.7	15.8	.08	135	2.0
UZ724/724HR	1N5075	24	30	10	5	18.2	17.3	.08	125	1.5
UZ727/727HR	1N5076	27	25	12	1	20.6	19.4	.09	110	1.5
UZ730/730HR	1N5077	30	25	15	1	22.8	21.6	.090	100	1.5
UZ733/733HR	1N5078	33	20	21	1	25.1	23.7	.090	90	1.2
UZ736/736HR	1N5079	36	20	21	1	27.4	25.9	.090	85	1.0
UZ740/740HR	1N5081	40	20	27	1	30.4	28.8	.095	75	1.0
UZ745/745HR	1N5083	45	15	37	1	34.2	32.4	.095	65	0.8
UZ750/750HR	1N5085	50	15	50	1	38.0	36.0	.095	60	0.8
UZ756/756HR	1N5087	56	10	70	1	42.6	40.3	.095	55	0.7
UZ760/760HR	1N5088	60	10	70	1	45.7	43.2	.095	50	0.6
UZ770/770HR	1N5091	70	10	90	1	53.3	50.5	.095	45	0.6
UZ775/775HR	1N5092	75	10	100	1	56.0	54.0	.095	40	0.5
UZ780/780HR	1N5093	80	10	115	1	60.8	57.7	.095	35	0.4
UZ790/790HR	1N4096	90	8.0	150	1	68.5	64.8	.095	30	0.4
UZ110/110HR	1N4097	100	5.0	175	1	76.0	72.0	.100	30	0.4
UZ111/111HR	1N5096	110	5.0	250	1	83.6	79.2	.100	25	0.3
UZ112/112HR	1N5097	120	5.0	325	1	91.2	86.4	.100	25	0.2
UZ113/113HR	1N5098	130	5.0	375	1	98.8	93.6	.100	20	0.20
UZ114/114HR	1N5099	140	5.0	550	1	106	101	.100	20	0.20
UZ115/115HR	1N4098	150	5.0	650	1	114	108	.100	20	0.20
UZ116/116HR	1N5100	160	4.0	700	1	122	115	.100	20	0.15
UZ117/117HR	1N5101	170	4.0	750	1	129	122	.100	18	0.15
UZ118/118HR	1N5102	180	4.0	850	1	137	129	.100	18	0.10
UZ119/119HR	1N5103	190	4.0	900	1	144	137	.100	15	0.10
UZ120/120HR	1N5104	200	4.0	950	1	152	144	.100	15	0.10
UZ122/122HR	1N5105	220	3.0	1100	1	167	158	.100	15	0.09
UZ124/124HR	1N5106	240	3.0	1300	1	182	173	.105	12	0.09
UZ126/126HR	1N5107	260	3.0	1500	1	198	187	.105	12	0.08
UZ128/128HR	1N5109	280	3.0	1700	1	213	202	.105	10	0.08
UZ130/130HR	1N5110	300	3.0	1900	1	228	216	.105	10	0.07
UZ132/132HR	1N5111	320	2.0	2100	1	243	230	.105	9	0.07
UZ134/134HR	1N5113	340	2.0	2400	1	258	245	.110	9	0.06
UZ136/136HR	1N5114	360	2.0	2700	1	274	259	.110	8	0.06
UZ138/138HR	1N5115	380	2.0	3000	1	289	274	.110	8	0.06
UZ140/140HR	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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