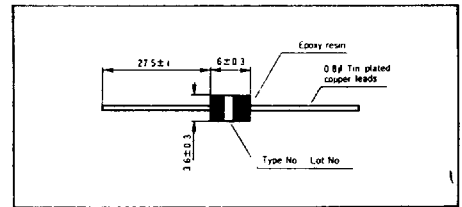
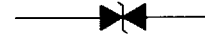


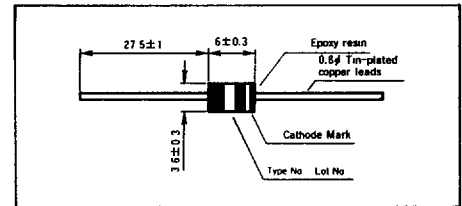
Bi-polar type	Stand-off voltage V_s V	Maximum leakage current I_L	Breakdown voltage V_B	Test current I_T mA	Maximum clamping voltage & Maximum peak pulse current				Max. temp. coef. of V_B %/°C
					10/1000 μ sec		8/20 μ sec		
					V_C V	I_P A	V_C V	I_P A	
Z1015	12.1	5	13.5-16.5	1	22.0	11.4	28.5	106	0.076
Z1016	12.9	5	14.4-17.6	1	23.5	10.6	30.5	99.3	0.078
Z1018	14.5	5	16.2-19.8	1	26.5	9.43	34.4	88.0	0.079
Z1020	16.2	5	18.0-22.0	1	29.1	8.59	37.7	80.3	0.081
Z1022	17.8	5	19.8-24.2	1	31.9	7.84	41.4	73.1	0.082
Z1024	19.4	5	21.6-26.4	1	34.7	7.20	45.0	67.3	0.084
Z1027	21.8	5	24.3-29.7	1	39.1	6.39	50.7	59.7	0.085
Z1030	24.3	5	27.0-33.0	1	43.5	5.75	56.4	53.7	0.086
Z1033	26.8	5	29.7-36.3	1	47.7	5.24	61.8	49.0	0.087
Z1036	29.1	5	32.4-39.6	1	52.0	4.81	67.4	44.9	0.089
Z1039	31.6	5	35.1-42.9	1	56.4	4.43	73.1	41.4	0.090
Z1043	34.8	5	38.7-47.3	1	61.9	4.04	80.2	37.7	0.091
Z1047	38.1	5	42.3-51.7	1	67.8	3.69	88.1	34.4	0.092
Z1051	41.3	5	45.9-56.1	1	73.5	3.40	95.3	31.8	0.093
Z1056	45.4	5	50.4-61.6	1	80.5	3.11	104	29.1	0.094
Z1062	50.2	5	55.8-68.2	1	89.0	2.81	115	26.3	0.095
Z1068	55.1	5	61.2-74.8	1	98.0	2.55	127	23.8	0.096
Z1075	60.7	5	67.5-82.5	1	108	2.31	140	21.6	0.098
Z1082	66.4	5	73.8-90.2	1	118	2.12	153	19.8	0.099
Z1091	73.7	5	81.9-100	1	131	1.91	170	17.8	0.100
Z1100	81.0	5	90.0-110	1	144	1.74	187	16.2	0.101
Z1110	89.2	5	99.0-121	1	158	1.58	205	14.8	0.102
Z1120	97.0	5	108-132	1	173	1.45	224	13.5	0.103
Z1130	105	5	117-143	1	187	1.34	242	12.5	0.104
Z1150	121	5	135-165	1	215	1.16	279	10.8	0.105

Z1 type VRD has bipolar electrical characteristics.
 Maximum ratings
 Peak pulse power: 250 Watt (10/1000 μ sec.)
 3.03 KWatt (8/20 μ sec.)
 Steady state power dissipation: 500 mWatt
 Operating and storage temperature: -40°C to 150°C
 Symbol mark



VRD type No.	Stand-off voltage V_s V	Maximum leakage current I_L μ A	Breakdown voltage V_B V	Test current I_T mA	Maximum clamping voltage & Maximum peak pulse current				Max. temp. coef. of V_B %/°C
					10/1000 μ sec		8/20 μ sec		
					V_C V	I_P A	V_C V	I_P A	
ZD015	12.1	5	13.5-16.5	1	22.0	11.4	28.5	106	0.076
ZD016	12.9	5	14.4-17.6	1	23.5	10.6	30.5	99.3	0.078
ZD018	14.5	5	16.2-19.8	1	26.5	9.43	34.4	88.0	0.079
ZD020	16.2	5	18.0-22.0	1	29.1	8.59	37.7	80.3	0.081
ZD022	17.8	5	19.8-24.2	1	31.9	7.84	41.4	73.1	0.082
ZD024	19.4	5	21.6-26.4	1	34.7	7.20	45.0	67.3	0.084
ZD027	21.8	5	24.3-29.7	1	39.1	6.39	50.7	59.7	0.085
ZD030	24.3	5	27.0-33.0	1	43.5	5.75	56.4	53.7	0.086
ZD033	26.8	5	29.7-36.3	1	47.7	5.24	61.8	49.0	0.087
ZD036	29.1	5	32.4-39.6	1	52.0	4.81	67.4	44.9	0.089
ZD039	31.6	5	35.1-42.9	1	56.4	4.43	73.1	41.4	0.090
ZD043	34.8	5	38.7-47.3	1	61.9	4.04	80.2	37.7	0.091
ZD047	38.1	5	42.3-51.7	1	67.8	3.69	88.1	34.4	0.092
ZD051	41.3	5	45.9-56.1	1	73.5	3.40	95.3	31.8	0.093
ZD056	45.4	5	50.4-61.6	1	80.5	3.11	104	29.1	0.094
ZD062	50.2	5	55.8-68.2	1	89.0	2.81	115	26.3	0.095
ZD068	55.1	5	61.2-74.8	1	98.0	2.55	127	23.8	0.096

Low capacitance type
 Maximum ratings
 Reverse voltage: 200 VDC
 Peak pulse power: 250 Watt (10/1000 μ sec.)
 3.03 KWatt (8/20 μ sec.)
 Steady state power dissipation: 500 mWatt
 Operating and storage temperature: -40°C to 150°C
 Symbol mark



Z2 type VRD has bipolar or unipolar electrical characteristics.

Maximum ratings

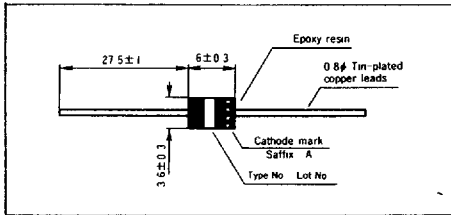
Peak pulse power 600 Watt (10/1000μsec)

7.28 KWatt (8/20μsec)

Steady state power dissipation, 1 Watt

Operating and storage temperature: -40°C to 150°C

Symbol mark



Bi-polar type	Uni-polar type	Stand-off voltage V _s V	Maximum leakage current I _L μA	Breakdown voltage V _b V	Test current I _T mA	Maximum clamping voltage & Maximum peak pulse current			
						10/1000μsec		8/20μsec	
						V _C V	I _P A	V _C V	I _P A
	Z2008U	6.63	500	7.38-9.02	10	12.5	48.0	16.2	449
	Z2008UA	7.02	500	7.79-8.61	10	12.1	49.5	15.7	463
Z2009	Z2009U	7.37	50	8.19-10.0	1	13.8	43.4	17.9	406
Z2009A	Z2009UA	7.78	50	8.65-9.55	1	13.4	44.7	17.4	418
Z2010	Z2010U	8.10	10	9.00-11.0	1	15.0	40.0	19.4	375
Z2010A	Z2010UA	8.55	10	9.50-10.5	1	14.5	41.3	18.8	387
Z2011	Z2011U	8.92	5	9.90-12.1	1	16.2	37.0	21.0	346
Z2011A	Z2011UA	9.40	5	10.5-11.6	1	15.6	38.4	20.2	360
Z2012	Z2012U	9.72	5	10.8-13.2	1	17.3	34.6	22.4	325
Z2012A	Z2012UA	10.2	5	11.4-12.6	1	16.7	35.9	21.6	337
Z2013	Z2013U	10.5	5	11.7-14.3	1	19.0	31.5	24.6	295
Z2013A	Z2013UA	11.1	5	12.4-13.7	1	18.2	32.9	23.6	308
Z2015	Z2015U	12.1	5	13.5-16.5	1	22.0	27.2	28.5	255
Z2015A	Z2015UA	12.8	5	14.3-15.8	1	21.2	28.3	27.5	264
Z2016	Z2016U	12.9	5	14.4-17.6	1	23.5	25.5	30.5	238
Z2016A	Z2016UA	13.6	5	15.2-16.8	1	22.5	26.6	29.2	249
Z2018	Z2018U	14.5	5	16.2-19.8	1	26.5	22.6	34.4	298
Z2018A	Z2018UA	15.3	5	17.1-18.0	1	25.2	23.8	32.7	222
Z2020	Z2020U	16.2	5	18.0-22.0	1	29.1	20.6	37.7	193
Z2020A	Z2020UA	17.1	5	19.0-21.0	1	27.7	21.6	35.9	206
Z2022	Z2022U	17.8	5	19.8-24.2	1	31.9	18.8	41.4	175
Z2022A	Z2022UA	18.8	5	20.9-23.1	1	30.6	19.6	39.7	183
Z2024	Z2024U	19.4	5	21.6-26.4	1	34.7	17.2	45.0	161
Z2024A	Z2024UA	20.5	5	22.8-25.2	1	33.2	18.0	43.0	169
Z2027	Z2027U	21.8	5	24.3-29.7	1	39.1	15.3	50.7	143
Z2027A	Z2027UA	23.1	5	25.7-28.4	1	37.5	16.0	48.6	149
Z2030	Z2030U	24.3	5	27.0-33.0	1	43.5	13.7	56.4	129
Z2030A	Z2030UA	25.6	5	28.5-31.5	1	41.4	14.4	53.7	135
Z2033	Z2033U	26.8	5	29.7-36.3	1	47.7	12.5	61.8	117
Z2033A	Z2033UA	28.2	5	31.4-34.7	1	45.2	13.2	58.6	124
Z2036	Z2036U	29.1	5	32.4-39.6	1	52.0	11.5	67.4	108
Z2036A	Z2036UA	30.8	5	34.2-37.8	1	49.9	12.0	64.7	112
Z2039	Z2039U	31.6	5	35.1-42.9	1	56.4	10.6	73.1	99.5
Z2039A	Z2039UA	33.3	5	37.1-41.0	1	53.9	11.1	69.9	104
Z2043	Z2043U	34.8	5	38.7-47.3	1	61.9	9.69	80.2	90.7
Z2043A	Z2043UA	36.8	5	40.9-45.2	1	59.3	10.1	76.9	94.6
Z2047	Z2047U	38.1	5	42.3-51.7	1	67.8	8.84	78.9	92.2
Z2047A	Z2047UA	40.2	5	44.7-49.4	1	64.8	9.25	74.0	98.3
Z2051	Z2051U	41.3	5	45.9-56.1	1	73.5	8.16	95.3	76.3
Z2051A	Z2051UA	43.6	5	48.5-53.6	1	70.1	8.55	90.9	80.0
Z2056	Z2056U	45.4	5	50.4-61.6	1	80.5	7.45	104	70.0
Z2056A	Z2056UA	47.8	5	53.2-58.8	1	77.0	7.79	99.8	72.9
Z2062	Z2062U	50.2	5	55.8-68.2	1	89.0	6.74	115	63.3
Z2062A	Z2062UA	53.0	5	58.9-65.1	1	85.0	7.05	110	66.1
Z2068	Z2068U	55.1	5	61.2-74.8	1	98.0	6.12	127	60.6
Z2068A	Z2068UA	58.1	5	64.6-71.4	1	92.0	6.52	119	61.1
Z2075	Z2075U	60.7	5	67.5-82.5	1	108	5.55	140	52.0
Z2075A	Z2075UA	64.1	5	71.3-78.8	1	103	5.82	134	54.3
Z2082	Z2082U	66.4	5	73.8-90.2	1	118	5.08	153	47.5
Z2082A	Z2082UA	70.1	5	77.9-86.1	1	113	5.30	146	49.8
Z2091	Z2091U	73.7	5	81.9-100	1	131	4.58	170	42.8
Z2091A	Z2091UA	77.8	5	86.5-95.5	1	125	4.80	162	44.9
Z2100	Z2100U	81.0	5	90.0-110	1	144	4.16	187	38.9
Z2100A	Z2100UA	85.5	5	95.0-105	1	137	4.37	178	40.8
Z2110	Z2110U	89.2	5	99.0-121	1	158	3.79	205	35.5
Z2110A	Z2110UA	94.0	5	105-116	1	152	3.94	197	36.9
Z2120	Z2120U	97.2	5	108-132	1	173	3.46	224	32.5
Z2120A	Z2120UA	102	5	114-126	1	165	3.63	214	34.0
Z2130	Z2130U	105	5	117-143	1	187	3.20	242	30.0
Z2130A	Z2130UA	111	5	124-137	1	179	3.35	232	31.3
Z2150	Z2150U	121	5	135-165	1	215	2.79	279	26.0
Z2150A	Z2150UA	128	5	143-158	1	207	2.89	268	27.1
Z2160	Z2160U	130	5	144-176	1	230	2.30	298	24.4
Z2160A	Z2160UA	136	5	152-168	1	219	2.73	284	25.6
Z2170	Z2170U	138	5	153-187	1	244	2.45	316	23.0
Z2170A	Z2170UA	145	5	161-179	1	234	2.56	303	24.0
Z2180	Z2180U	146	5	162-198	1	258	2.32	335	21.7
Z2180A	Z2180UA	154	5	171-189	1	246	2.43	319	22.8
Z2200	Z2200U	162	5	180-220	1	287	2.09	372	22.2
Z2200A	Z2200UA	111	5	190-210	1	274	2.18	355	20.5
Z2220	Z2220U	175	5	198-242	1	344	1.74	408	17.8
Z2220A	Z2220UA	185	5	209-231	1	328	1.82	390	18.6

NOTE Nonsuffix Vz±10% and Bi-polar, "A" Vz±5%, suffix "U" Uni-polar

Bi-polar type	Uni-polar type	Stand-off voltage V_s V	Maximum leakage current I_L μ A	Breakdown voltage V_B V	Test current I_T mA	Maximum clamping voltage & Maximum peak pulse current			
						10/1000 μ sec		8/20 μ sec	
						V_C V	I_P A	V_C V	I_P A
	Z6008U	6.63	500	7.38-9.02	10	12.5	120	16.2	1124
	Z6008UA	7.02	500	7.79-8.61	10	12.1	124	15.7	1160
Z6009	Z6009U	7.37	50	8.19-10.0	1	13.8	109	17.9	1017
Z6009A	Z6009UA	7.78	50	8.65-9.55	1	13.4	112	17.4	1046
Z6010	Z6010U	8.10	10	9.00-11.0	1	15.0	100	19.4	938
Z6010A	Z6010UA	8.55	10	9.50-10.5	1	14.5	103	18.8	968
Z6011	Z6011U	8.92	5	9.90-12.1	1	16.2	93	21.0	867
Z6011A	Z6011UA	9.40	5	10.5-11.6	1	15.6	96	20.2	901
Z6012	Z6012U	9.72	5	10.8-13.2	1	17.3	87	22.4	813
Z6012A	Z6012UA	10.2	5	11.4-12.6	1	16.7	90	21.6	843
Z6013	Z6013U	10.5	5	11.7-14.3	1	19.0	79	24.6	740
Z6013A	Z6013UA	11.1	5	12.4-13.7	1	18.2	82	23.6	778
Z6015	Z6015U	12.1	5	13.5-16.5	1	22.0	68	28.5	639
Z6015A	Z6015UA	12.8	5	14.3-15.8	1	21.2	71	27.5	662
Z6016	Z6016U	12.9	5	14.4-17.6	1	23.5	64	30.5	597
Z6016A	Z6016UA	13.6	5	15.2-16.8	1	22.5	67	29.2	623
Z6018	Z6018U	14.5	5	16.2-19.8	1	26.5	56	34.4	529
Z6018A	Z6018UA	15.3	5	17.1-18.0	1	25.2	59	32.7	557
Z6020	Z6020U	16.2	5	18.0-22.0	1	29.1	51	37.7	483
Z6020A	Z6020UA	17.1	5	19.0-21.0	1	27.7	54	35.9	507
Z6022	Z6022U	17.8	5	19.8-24.2	1	31.9	47	41.4	440
Z6022A	Z6022UA	18.8	5	20.9-23.1	1	30.6	49	39.7	459
Z6024	Z6024U	19.4	5	21.6-26.4	1	34.7	43	45.0	404
Z6024A	Z6024UA	20.5	5	22.8-25.2	1	33.2	45	43.0	423
Z6027	Z6027U	21.8	5	24.3-29.7	1	39.1	38	50.7	359
Z6027A	Z6027UA	23.1	5	25.7-28.4	1	37.5	40	48.6	375
Z6030	Z6030U	24.3	5	27.0-33.0	1	43.5	34	56.4	323
Z6030A	Z6030UA	25.6	5	28.5-31.5	1	41.4	36	53.7	339
Z6033	Z6033U	26.8	5	29.7-36.3	1	47.7	31	61.8	295
Z6033A	Z6033UA	28.2	5	31.4-34.7	1	45.2	33	58.6	311
Z6036	Z6036U	29.1	5	32.4-39.6	1	52.0	29	67.4	270
Z6036A	Z6036UA	30.8	5	34.2-37.8	1	49.9	30	64.7	281
Z6039	Z6039U	31.6	5	35.1-42.9	1	56.4	26	73.1	249
Z6039A	Z6039UA	33.3	5	37.1-41.0	1	53.9	28	69.9	260
Z6043	Z6043U	34.8	5	38.7-47.3	1	61.9	24	80.2	227
Z6043A	Z6043UA	36.8	5	40.9-45.2	1	59.3	25	76.9	237
Z6047	Z6047U	38.1	5	42.3-51.7	1	67.8	22.2	78.9	231
Z6047A	Z6047UA	40.2	5	44.7-49.4	1	64.8	21.2	74.0	246
Z6051	Z6051U	41.3	5	45.9-56.1	1	73.5	20.4	95.3	191
Z6051A	Z6051UA	43.6	5	48.5-53.6	1	70.1	21.4	90.9	200
Z6056	Z6056U	45.4	5	50.4-61.6	1	80.5	18.6	104	175
Z6056A	Z6056UA	47.8	5	53.2-58.8	1	77.0	19.5	99.8	182
Z6062	Z6062U	50.2	5	55.8-68.2	1	89.0	16.9	115	158
Z6062A	Z6062UA	53.0	5	58.9-65.1	1	85.0	17.7	110	165
Z6068	Z6068U	55.1	5	61.2-74.8	1	98.0	15.3	127	143
Z6068A	Z6068UA	58.1	5	64.6-71.4	1	92.0	16.3	119	153
Z6075	Z6075U	60.7	5	67.5-82.5	1	108	13.9	140	130
Z6075A	Z6075UA	64.1	5	71.3-78.8	1	103	14.6	134	136
Z6082	Z6082U	66.4	5	73.8-90.2	1	118	12.7	153	119
Z6082A	Z6082UA	70.1	5	77.9-86.1	1	113	13.3	146	125
Z6091	Z6091U	73.7	5	81.9-100	1	131	11.4	170	107
Z6091A	Z6091UA	77.8	5	86.5-95.5	1	125	12.0	162	112
Z6100	Z6100U	81.0	5	90.0-110	1	144	10.4	187	97.4
Z6100A	Z6100UA	85.5	5	95.0-105	1	137	11.0	178	102
Z6110	Z6110U	89.2	5	99.0-121	1	158	9.5	205	88.8
Z6110A	Z6110UA	94.0	5	105-116	1	152	9.9	197	92.4
Z6120	Z6120U	97.2	5	108-132	1	173	8.7	224	81.3
Z6120A	Z6120UA	102	5	114-126	1	165	9.1	214	85.1
Z6130	Z6130U	105	5	117-143	1	187	8.0	242	75.2
Z6130A	Z6130UA	111	5	124-137	1	179	8.4	232	78.5
Z6150	Z6150U	121	5	135-165	1	215	7.0	279	65.2
Z6150A	Z6150UA	128	5	143-158	1	207	7.2	268	67.9
Z6160	Z6160U	130	5	144-176	1	230	6.52	298	61.0
Z6160A	Z6160UA	136	5	152-168	1	219	6.84	284	64.0
Z6170	Z6170U	138	5	153-187	1	244	6.14	316	57.5
Z6170A	Z6170UA	145	5	161-179	1	234	6.41	303	60.0
Z6180	Z6180U	146	5	162-198	1	258	5.81	335	54.3
Z6180A	Z6180UA	154	5	171-189	1	246	6.09	319	57.0
Z6200	Z6200U	162	5	180-220	1	287	5.22	372	48.9
Z6200A	Z6200UA	171	5	190-210	1	274	5.47	355	51.2
Z6220	Z6220U	175	5	198-242	1	344	4.36	408	44.6
Z6220A	Z6220UA	185	5	209-231	1	328	4.57	390	46.6

Z6 type VRD has bipolar or unipolar electrical characteristics

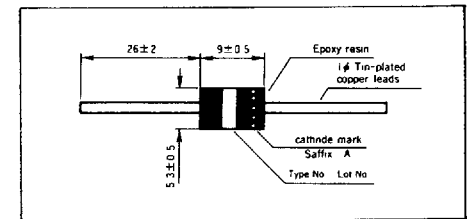
Maximum ratings

Peak pulse power 15 KWatt (10/1000 μ sec)
18.2 KWatt (8/20 μ sec)

Steady state power dissipation: 3 Watt

Operating and storage temperature: -40°C to 150°C

Symbol mark



NOTE Nonsuffix $V_s \pm 10\%$ and Bi-polar, suffix "A" $V_s \pm 5\%$, suffix "U" Uni-polar

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