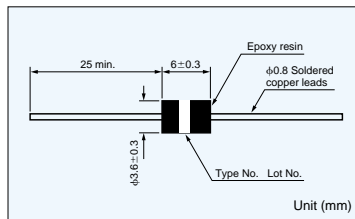


**Z1 type VRD has bipolar electrical characteristics.**

Maximum ratings  
 Peak pulse power: 250 W (10/1000 $\mu$ s)  
 3.00 kW (8/20 $\mu$ s)  
 Steady state power dissipation: 500 mW  
 Operating and storage temperature  
 : -40°C to 125°C

Symbol mark

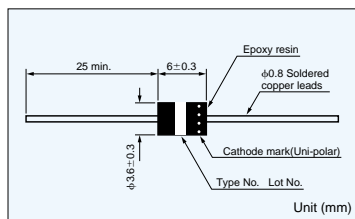
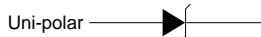


Bi-polar type	Stand-off voltage $V_s$ V	Maximum leakage current $I_L$ $\mu$ A	Breakdown voltage $V_B$ V	Test current $I_T$ mA	Maximum clamping voltage & Maximum peak pulse current				Max. temp. coef. %/°C	Capacitance (TYP) pF
					10/1000 $\mu$ s		8/20 $\mu$ s			
					$V_C$ V	$I_P$ A	$V_C$ V	$I_P$ A		
Z1015	12.1	5	13.5-16.5	1	22.0	11.3	28.4	106.	0.075	450
Z1018	14.5	5	16.2-19.8	1	26.5	9.43	34.0	89.1	0.079	360
Z1022	17.8	5	19.8-24.2	1	31.9	7.83	41.2	73.5	0.082	290
Z1027	21.8	5	24.3-29.7	1	39.1	6.39	50.5	60.0	0.085	240
Z1033	26.8	5	29.7-36.3	1	47.7	5.24	61.7	49.1	0.087	200
Z1039	31.6	5	35.1-42.9	1	56.4	4.43	73.0	41.5	0.090	170
Z1047	38.1	5	42.3-51.7	1	67.8	3.69	88.0	34.4	0.092	140
Z1056	45.4	5	50.4-61.6	1	80.5	3.10	105.0	28.8	0.094	110
Z1068	55.1	5	61.2-74.8	1	98.0	2.55	127.0	23.8	0.096	90
Z1082	66.4	5	73.8-90.2	1	118.0	2.14	153.0	19.8	0.099	80
Z1100	81.0	5	90.0-110	1	144.0	1.73	187.0	16.2	0.101	65
Z1120	97.0	5	108-132	1	173.0	1.44	222.0	13.6	0.103	53
Z1150	121.0	5	135-165	1	215.0	1.16	277.0	10.9	0.105	42

**Z2 type VRD has bipolar or unipolar electrical characteristics.**

Maximum ratings  
 Peak pulse power: 500 W (10/1000 $\mu$ s)  
 6.00 kW (8/20 $\mu$ s)  
 Steady state power dissipation: 1W  
 Operating and storage temperature  
 : -40°C to 125°C

Symbol mark



Bi-polar type	Uni-polar type	Stand-off voltage $V_s$ V	Maximum leakage current $I_L$ $\mu$ A	Breakdown voltage $V_B$ V	Test current $I_T$ mA	Maximum clamping voltage & Maximum peak pulse current				Max. temp. coef. %/°C	Capacitance (TYP) pF
						10/1000 $\mu$ s		8/20 $\mu$ s			
						$V_C$ V	$I_P$ A	$V_C$ V	$I_P$ A		
Z2008	-	6.63	500	7.38-9.02	10	12.5	40.0	16.3	372	0.045	1200
-	Z2008U	6.63	500	7.38-9.02	10	12.5	40.0	16.3	372	0.063	2400
Z2010	-	8.10	100	9.00-11.0	1	15.0	33.4	19.5	311	0.055	950
-	Z2010U	8.10	20	9.00-11.0	1	15.0	33.4	19.5	311	0.071	1900
Z2012	-	9.72	5	10.8-13.2	1	17.3	28.9	22.7	267	0.066	790
-	Z2012U	9.72	5	10.8-13.2	1	17.3	28.9	22.7	267	0.074	1580
Z2015	-	12.1	5	13.5-16.5	1	22.0	22.7	28.4	213	0.075	640
-	Z2015U	12.1	5	13.5-16.5	1	22.0	22.7	28.4	213	0.079	1280
Z2018	-	14.5	5	16.2-19.8	1	26.5	18.8	34.0	178	0.079	520
-	Z2018U	14.5	5	16.2-19.8	1	26.5	18.8	34.0	178	0.083	1040
Z2022	-	17.8	5	19.8-24.2	1	31.9	15.7	41.2	147	0.082	420
-	Z2022U	17.8	5	19.8-24.2	1	31.9	15.7	41.2	147	0.086	840
Z2027	-	21.8	5	24.3-29.7	1	39.1	12.8	50.5	120	0.085	340
-	Z2027U	21.8	5	24.3-29.7	1	39.1	12.8	50.5	120	0.089	680
Z2033	-	26.8	5	29.7-36.3	1	47.7	10.5	61.7	98.2	0.087	280
-	Z2033U	26.8	5	29.7-36.3	1	47.7	10.5	61.7	98.2	0.092	560
Z2039	-	31.6	5	35.1-42.9	1	56.4	8.86	73.0	83.0	0.090	240
-	Z2039U	31.6	5	35.1-42.9	1	56.4	8.86	73.0	83.0	0.095	480
Z2047	-	38.1	5	42.3-51.7	1	67.8	7.37	88.0	68.9	0.092	200
-	Z2047U	38.1	5	42.3-51.7	1	67.8	7.37	88.0	68.9	0.097	400
Z2056	-	45.4	5	50.4-61.6	1	80.5	6.21	105.0	57.7	0.094	160
-	Z2056U	45.4	5	50.4-61.6	1	80.5	6.21	105.0	57.7	0.099	320
Z2068	-	55.1	5	61.2-74.8	1	98.0	5.10	127.0	47.7	0.096	130
-	Z2068U	55.1	5	61.2-74.8	1	98.0	5.10	127.0	47.7	0.100	260
Z2082	-	66.4	5	73.8-90.2	1	118.0	4.24	153.0	39.6	0.099	110
-	Z2082U	66.4	5	73.8-90.2	1	118.0	4.24	153.0	39.6	0.102	220
Z2100	-	81.0	5	90.0-110	1	144.0	3.47	187.0	32.4	0.101	90
-	Z2100U	81.0	5	90.0-110	1	144.0	3.47	187.0	32.4	0.104	180
Z2120	-	97.2	5	108-132	1	173.0	2.89	222.0	27.3	0.103	75
-	Z2120U	97.2	5	108-132	1	173.0	2.89	222.0	27.3	0.106	150
Z2150	-	121.0	5	135-165	1	215.0	2.32	277.0	21.9	0.105	60
-	Z2150U	121.0	5	135-165	1	215.0	2.32	277.0	21.9	0.107	120
Z2180	-	146.0	5	162-198	1	258.0	1.94	333.0	18.2	0.106	49
-	Z2180U	146.0	5	162-198	1	258.0	1.94	333.0	18.2	0.108	98

NOTE: Nonsuffix: bi-polar, suffix "U" : uni-polar.

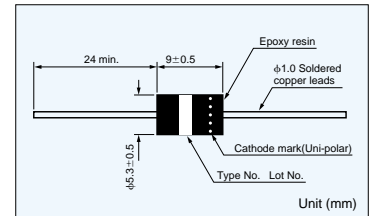
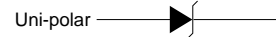
Bi-polar type	Uni-polar type	Stand-off voltage V <sub>s</sub> V	Maximum leakage current I <sub>L</sub> μA	Breakdown voltage V <sub>B</sub> V	Test current I <sub>T</sub> mA	Maximum clamping voltage & Maximum peak pulse current				Max. temp. coef. %/°C	Capacitance (TYP) pF
						10/1000μs		8/20μs			
						V <sub>C</sub> V	I <sub>p</sub> A	V <sub>C</sub> V	I <sub>p</sub> A		
—	Z6008U	6.63	500	7.38-9.02	10	12.5	120	16.3	1120	0.063	14600
Z6010	—	8.10	200	9.00-11.0	1	15.0	100	19.5	933	0.055	5600
—	Z6010U	8.10	50	9.00-11.0	1	15.0	100	19.5	933	0.071	11200
Z6012	—	9.72	10	10.8-13.2	1	17.3	86.7	22.7	802	0.066	4400
—	Z6012U	9.72	5	10.8-13.2	1	17.3	86.7	22.7	802	0.074	8800
Z6015	—	12.1	5	13.5-16.5	1	22.0	68.2	28.4	641	0.075	3300
—	Z6015U	12.1	5	13.5-16.5	1	22.0	68.2	28.4	641	0.079	6600
Z6018	—	14.5	5	16.2-19.8	1	26.5	56.6	34.0	535	0.079	2700
—	Z6018U	14.5	5	16.2-19.8	1	26.5	56.6	34.0	535	0.083	5400
Z6022	—	17.8	5	19.8-24.2	1	31.9	47.0	41.2	442	0.082	2400
—	Z6022U	17.8	5	19.8-24.2	1	31.9	47.0	41.2	442	0.086	4400
Z6027	—	21.8	5	24.3-29.7	1	39.1	38.5	50.5	360	0.085	1700
—	Z6027U	21.8	5	24.3-29.7	1	39.1	38.4	50.5	360	0.089	3300
Z6033	—	26.8	5	29.7-36.3	1	47.7	31.4	61.7	295	0.087	1400
—	Z6033U	26.8	5	29.7-36.3	1	47.7	31.4	61.7	295	0.092	2800
Z6039	—	31.6	5	35.1-42.9	1	56.4	26.6	73.0	249	0.090	1200
—	Z6039U	31.6	5	35.1-42.9	1	56.4	26.6	73.0	249	0.095	2400
Z6047	—	38.1	5	42.3-51.7	1	67.8	22.1	88.0	207	0.092	1000
—	Z6047U	38.1	5	42.3-51.7	1	67.8	22.1	88.0	207	0.097	2000
Z6056	—	45.4	5	50.4-61.6	1	80.5	18.6	105.0	173	0.094	850
—	Z6056U	45.4	5	50.4-61.6	1	80.5	18.6	105.0	173	0.099	1700
Z6068	—	55.1	5	61.2-74.8	1	98.0	15.3	127.0	143	0.096	720
—	Z6068U	55.1	5	61.2-74.8	1	98.0	15.3	127.0	143	0.100	1440
Z6082	—	66.4	5	73.8-90.2	1	118.0	12.7	153.0	119	0.099	610
—	Z6082U	66.4	5	73.8-90.2	1	118.0	12.7	153.0	119	0.102	1220
Z6100	—	81.0	5	90.0-110	1	144.0	10.4	187.0	97.3	0.101	520
—	Z6100U	81.0	5	90.0-110	1	144.0	10.4	187.0	97.3	0.104	1040
Z6120	—	97.2	5	108-132	1	173.0	8.67	222.0	82.0	0.103	440
—	Z6120U	97.2	5	108-132	1	173.0	8.67	222.0	82.0	0.106	880
—	Z6150U	121.0	5	135-165	1	215.0	6.98	277.0	65.7	0.107	720

NOTE : Nonsuffix : Bi-polar, suffix "U" : Uni-polar.

Z6 type VRD has bipolar or unipolar electrical characteristics.

Maximum ratings  
Peak pulse power:1.5kW(10/1000μs)  
18.0kW(8/20μs)  
Steady state power dissipation:2W  
Operating and storage temperature  
:-40°C to 125°C

Symbol mark

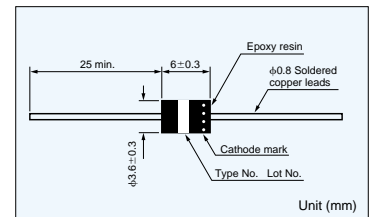


VRD type No.	Stand-off voltage V <sub>s</sub> V	Maximum leakage current I <sub>L</sub> μA	Breakdown voltage V <sub>B</sub> V	Test current I <sub>T</sub> mA	Maximum clamping voltage & Maximum peak pulse current				Max. temp. coef. %/°C	Capacitance (TYP) pF
					10/1000μs		8/20μs			
					V <sub>C</sub> V	I <sub>p</sub> A	V <sub>C</sub> V	I <sub>p</sub> A		
ZD015	11.4	10	12.8-17.2	1	24.0	10.4	31.0	96.7	0.075	31.5
ZD018	13.7	10	15.3-20.7	1	28.0	8.93	36.0	83.3	0.079	31.0
ZD022	16.8	5	18.7-25.3	1	33.2	7.53	43.0	69.7	0.082	29.0
ZD027	20.6	5	23.0-31.0	1	40.0	6.25	52.0	57.7	0.085	28.2
ZD033	25.2	5	28.1-37.9	1	48.6	5.14	63.0	47.6	0.087	27.2
ZD039	29.8	5	33.2-44.8	1	57.4	4.35	74.0	40.5	0.090	26.3
ZD047	35.9	5	40.0-54.0	1	68.5	3.65	89.0	33.7	0.092	25.0
ZD056	42.8	5	47.6-64.4	1	81.0	3.08	106.0	28.6	0.094	24.1
ZD068	52.0	5	57.8-78.2	1	98.0	2.55	127.0	23.8	0.096	22.0

Low capacitance type

Maximum ratings  
Reverse voltage:200 VDC  
Peak pulse power:250 W(10/1000μs)  
3.00 kW(8/20μs)  
Steady state power dissipation:500 mW  
Operating and storage temperature  
:-40°C to 125°C

Symbol mark



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