



180 Lafayette Road
 North Hampton, NH 03862-2448
 PH: 603-964-3165
 FX: 603-964-3168
 WWW.PDEELECTRONICS.COM

PZ1 SERIES
 Zener Diode/Surge Suppressor

FEATURES

- Hermetically Sealed
- Glass Passivated
- Lead Free
- Axial Lead case



MAXIMUM ELECTRICAL RATINGS

Repetitive Peak Reverse Power Dissipation	10W	P_{ZRM}	$T_p=100\mu s$, half sine, $T_j=25^\circ C$ $I=10mm$, $T_L=25^\circ C$ $T_{AMB}=25^\circ C$
Non Repetitive Peak Surge Power Dissipation	600W	P_{ZSM}	
Junction Temperature (typical)	175°C	T_j	
Power Dissipation	3.25W	P_V	
	1.3W	P_V	

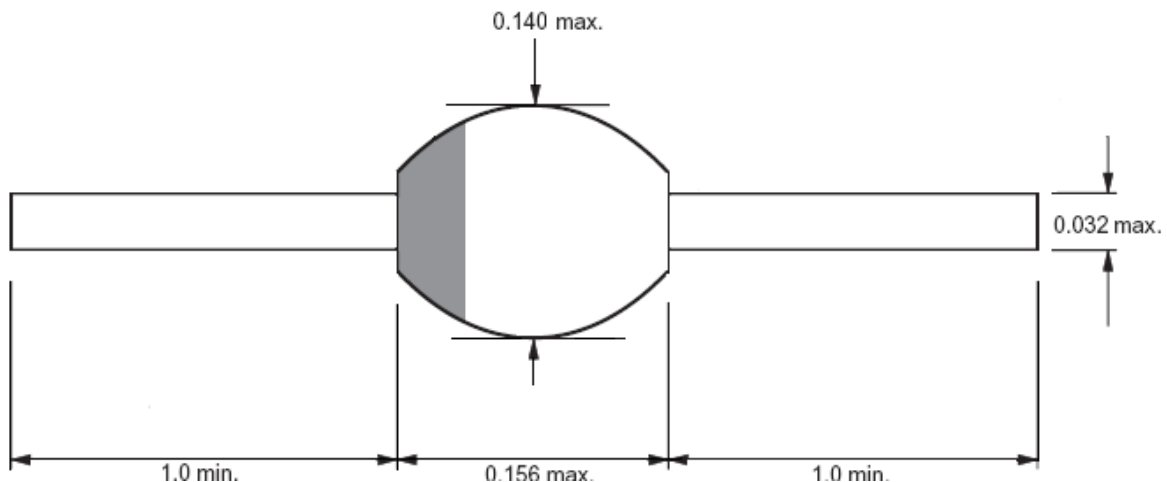
ELECTRICAL CHARACTERISTICS

Forward Voltage	1.2V	V_F	$I_F=0.5A$
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THERMAL CHARACTERISTICS

Storage Temperature	-65°C to +175°C	T_{STG}	$I=10mm$, $T_L=$ Constant on PC board w/ 25mm spacing
Junction Ambient (typical)	46 K/W	R_{THJA}	
	100 K/W	R_{THJA}	

MECHANICAL CHARACTERISTICS



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Part Number	Zener Voltage Range			Dynamic Resistance		Test Current	Temperature Coefficient of Zener Voltage		Reverse Leakage Current		Clamping		Stand-off	
	$V_Z @ I_{ZT}$			r_{zj} and $TK_{VZ} @ I_Z$			I_{ZT}	$TC_{VZ} @ I_{ZT}$		$I_R @ V_R$		$V_{(CL)R}^{(1)} @ I_{RMS}$		$I_R @ V_R^{(2)}$
	min	typ	max	typ	max	mA	%K		μA	V	V	A	μA	V
PZ101	5.8	6.2	6.6	1	2	100	0	0.07	1500	4.7	9.3	34.0	3000	5.1
PZ102	6.4	6.8	7.2	1	2	100	0	0.07	1000	5.1	10.2	31.0	2000	5.6
PZ103	7	7.5	7.9	1	2	100	0	0.07	750	5.6	11.3	26.5	1500	6.2
PZ104	7.7	8.2	8.7	1	2	100	0.03	0.08	600	6.2	12.3	24.4	1200	6.8
PZ105	8.5	9.1	9.6	2	4	50	0.03	0.08	20	6.8	13.3	22.7	50	7.5
PZ106	9.4	10	10.6	2	4	50	0.05	0.09	10	7.5	14.8	20.3	20	8.2
PZ107	10.4	11	11.6	4	7	50	0.05	0.1	4	8.2	15.7	19.1	5	9.1
PZ108	11.4	12	12.7	4	7	50	0.05	0.1	3	9.1	17.0	17.7	5	10
PZ109	12.4	13	14.1	5	10	50	0.05	0.1	2	10	18.9	15.9	5	11
PZ110	13.8	15	15.6	5	10	50	0.05	0.1	1	11	20.9	14.4	5	12
PZ111	15.3	16	17.1	6	15	25	0.06	0.11	1	12	22.9	13.1	5	13
PZ112	16.8	18	19.1	6	15	25	0.06	0.11	1	13	25.6	11.7	5	15
PZ113	18.8	20	21.2	6	15	25	0.06	0.11	1	15	28.4	10.6	5	16
PZ114	20.8	22	23.3	6	15	25	0.06	0.11	1	16	31.0	9.7	5	18
PZ115	22.8	24	25.6	7	15	25	0.06	0.11	1	18	33.8	8.9	5	20
PZ116	25.1	27	28.9	7	15	25	0.06	0.11	1	20	38.1	7.9	5	22
PZ117	28	30	32	8	15	25	0.06	0.11	1	22	42.2	7.1	5	24
PZ118	31	33	35	8	15	25	0.06	0.11	1	24	46.2	6.5	5	27
PZ119	34	36	38	21	40	10	0.06	0.11	1	27	50.1	6.0	5	30
PZ120	37	39	41	21	40	10	0.06	0.11	1	30	54.1	5.5	5	33
PZ121	40	43	46	24	45	10	0.07	0.12	1	33	60.7	4.9	5	36
PZ122	44	47	50	24	45	10	0.07	0.12	1	36	65.5	4.6	5	39
PZ123	48	51	54	25	60	10	0.07	0.12	1	39	70.8	4.2	5	43
PZ124	52	56	60	25	60	10	0.07	0.12	1	43	78.6	3.8	5	47
PZ125	58	62	66	25	80	10	0.08	0.13	1	47	86.5	3.5	5	51
PZ126	64	68	72	25	80	10	0.08	0.13	1	51	94.4	3.2	5	56
PZ127	70	75	79	30	100	10	0.08	0.13	1	56	103.5	2.9	5	62
PZ128	77	82	87	30	100	10	0.08	0.13	1	62	114	2.6	5	68
PZ129	85	91	96	60	200	5	0.09	0.13	1	68	126	2.4	5	75
PZ130	94	100	106	60	200	5	0.09	0.13	1	75	139	2.2	5	82
PZ131	104	110	116	80	250	5	0.09	0.13	1	82	152	2.0	5	91
PZ132	114	120	127	80	250	5	0.09	0.13	1	91	167	1.8	5	100
PZ133	124	130	141	110	300	5	0.09	0.13	1	100	185	1.6	5	110
PZ134	138	150	156	130	300	5	0.09	0.13	1	110	204	1.5	5	120
PZ135	153	160	171	150	350	5	0.09	0.13	1	120	224	1.3	5	130
PZ136	168	180	191	180	400	5	0.09	0.13	1	130	249	1.2	5	150
PZ137	188	200	212	200	500	5	0.09	0.13	1	150	276	1.1	5	160
PZ138	208	220	233	350	750	2	0.09	0.13	1	160	305	1.0	5	180
PZ139	228	240	256	400	850	2	0.09	0.13	1	180	336	0.9	5	200
PZ140	251	270	289	450	1000	2	0.09	0.13	1	200	380	0.8	5	220
PZ141	280	300	320	450	1000	2	0.09	0.13	1	220	419	0.72	5	240

¹⁾ 10/1000 exp. falling pulse $t_p = 1000 \mu s$ down to 50 %

²⁾ Stand-off voltage = recommended supply voltage

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	$V_Z @ I_{ZT}$			r_{zj} and $TK_{VZ} @ I_Z$			I_{ZT}	$TC_{VZ} @ I_{ZT}$		$I_R @ V_R$		$V_{(CL)R}^{(1)} @ I_{RMS}$		$I_R @ V_R^{(2)}$
	V			Ω		mA	%K		μA	V	V	A	μA	V
	min	typ	max	typ	max		min	max	max		max		max	
PZ142	5.6	6.2	6.8	1	2	100	0	0.07	1500	4.4	9.5	34.0	3000	4.8
PZ143	6.1	6.8	7.5	1	2	100	0	0.07	1000	4.8	10.5	31.0	2000	5.3
PZ144	6.75	7.5	8.25	1	2	100	0	0.07	750	5.3	11.6	26.5	1500	5.9
PZ145	7.4	8.2	9	1	2	100	0.03	0.08	600	5.9	12.6	24.4	1200	6.5
PZ146	8.2	9.1	10	2	4	50	0.03	0.08	20	6.5	13.7	22.7	50	7.1
PZ147	9	10	11	2	4	50	0.05	0.09	10	7.1	15.2	20.3	20	7.9
PZ148	9.9	11	12.1	4	7	50	0.05	0.1	4	7.9	16.2	19.1	5	8.6
PZ149	10.8	12	13.2	4	7	50	0.05	0.1	3	8.6	17.5	17.7	5	9.3
PZ150	11.7	13	14.3	5	10	50	0.05	0.1	2	9.3	19.1	15.9	5	10.6
PZ151	13.5	15	16.5	5	10	50	0.05	0.1	1	10.6	21.8	14.4	5	11.6
PZ152	14.4	16	17.6	6	15	25	0.06	0.11	1	11.6	23.4	13.1	5	12.6
PZ153	16.2	18	19.8	6	15	25	0.06	0.11	1	12.6	26.3	11.7	5	14.4
PZ154	18	20	22	6	15	25	0.06	0.11	1	14.4	29.2	10.6	5	15.8
PZ155	29.8	22	24.2	6	15	25	0.06	0.11	1	15.8	31.9	9.7	5	17.2
PZ156	21.6	24	26.4	7	15	25	0.06	0.11	1	17.2	34.6	8.9	5	19.4
PZ157	24.3	27	29.7	7	15	25	0.06	0.11	1	19.4	39	7.9	5	21.5
PZ158	27	30	33	8	15	25	0.06	0.11	1	21.5	43.5	7.1	5	23.5
PZ159	29.7	33	36.3	8	15	25	0.06	0.11	1	23.5	47.5	6.5	5	25.8
PZ160	32.4	36	39.6	21	40	10	0.06	0.11	1	25.8	51.5	6.0	5	28
PZ161	35.1	39	42.9	21	40	10	0.06	0.11	1	28	56	5.5	5	31
PZ162	38.7	43	47.3	24	45	10	0.07	0.12	1	31	62	4.9	5	33.5
PZ163	42.3	47	51.7	24	45	10	0.07	0.12	1	33.5	67.5	4.6	5	36.5
PZ164	45.9	51	56.1	25	60	10	0.07	0.12	1	36.5	73	4.2	5	40
PZ165	50.4	56	61.6	25	60	10	0.07	0.12	1	40	81	3.8	5	44.5
PZ166	55.8	62	68.2	25	80	10	0.08	0.13	1	44.5	89	3.5	5	49
PZ167	61.2	68	74.8	25	80	10	0.08	0.13	1	49	97	3.2	5	54
PZ168	67.5	75	82.5	30	100	10	0.08	0.13	1	54	107	2.9	5	59
PZ169	73.8	82	90.2	30	100	10	0.08	0.13	1	59	117	2.6	5	65
PZ170	81.9	91	100	60	200	5	0.09	0.13	1	65	130	2.4	5	71
PZ171	90	100	110	60	200	5	0.09	0.13	1	71	143	2.2	5	79
PZ172	99	110	121	80	250	5	0.09	0.13	1	79	157	2.0	5	86
PZ173	108	120	132	80	250	5	0.09	0.13	1	86	172	1.8	5	93
PZ174	117	130	143	110	300	5	0.09	0.13	1	93	187	1.6	5	106
PZ175	135	150	165	130	300	5	0.09	0.13	1	106	213	1.5	5	116
PZ176	144	160	176	150	350	5	0.09	0.13	1	116	229	1.3	5	126
PZ177	162	180	198	180	400	5	0.09	0.13	1	126	256	1.2	5	144
PZ178	180	200	220	200	500	5	0.09	0.13	1	144	284	1.1	5	158
PZ179	198	220	242	350	750	2	0.09	0.13	1	158	314	1.0	5	172
PZ180	216	240	264	400	850	2	0.09	0.13	1	172	364	0.9	5	194
PZ181	243	270	297	450	1000	2	0.09	0.13	1	194	388	0.8	5	215

¹⁾ 10/1000 exp. falling pulse $t_p = 1000 \mu s$ down to 50 % ²⁾ Stand-off voltage = recommended supply voltage