

1N4954P-1N4996P

5 WATT PLASTIC ZENER DIODE

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

Operating Temperature:	-65 to +175°C
Storage Temperature:	-65 to +175°C
Power Dissipation:	5 Watts @ $T_L = 65^\circ\text{C}$ at 3/8" from body, derate linearly to zero @ 175°C.
Thermal Resistance:	22°C/W junction to lead at 3/8" from body
Thermal Impedance @ 10ms:	1.8°C/W
Forward Voltage:	1.50 V @ 1.0A

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Type	Electrical Specifications @ 25°C							Maximum Ratings		
	Nominal Zener Voltage $V_Z @ I_{ZT}$	Test Current I_{ZT}	Maximum Zener Impedance		Voltage Regulation ΔV_Z (note 1)	Maximum Reverse Leakage Current Voltage		Maximum Temperature Coeff. $\alpha_{V_Z} @ I_{ZT}$	Maximum Continuous Current I_{ZM}	Surge Current I_{ZSM} 8.3ms square wave
			$Z_Z @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$ 1mA		I_R	V_R			
Volts	mA	OHMS	OHMS	Volts	μA	Volts	%/°C	mA	Amps	
1N4954P	6.8	175	1.0	1000	0.7	150	5.2	.05	700	29.3
1N4955P	7.5	175	1.5	800	0.7	100	5.7	.06	630	26.4
1N4956P	8.2	150	1.5	600	0.7	50	6.2	.06	580	24.0
1N4957P	9.1	150	2.0	400	0.7	25	6.9	.06	520	22.0
1N4958P	10.0	125	2.0	125	0.8	25	7.6	.07	475	20.0
1N4959P	11.0	125	2.5	130	0.8	10	8.4	.07	430	19.0
1N4960P	12.0	100	2.5	140	0.8	10	9.1	.07	395	18.0
1N4961P	13.0	100	3.0	145	0.9	10	9.9	.08	365	16.0
1N4962P	15.0	75	3.5	150	1.0	5	11.4	.08	315	12.0
1N4963P	16.0	75	3.5	155	1.1	5	12.2	.08	294	10.0
1N4964P	18.0	65	4.0	160	1.2	5	13.7	.085	264	9.0
1N4965P	20.0	65	4.5	165	1.5	2	15.2	.085	237	8.0
1N4966P	22.0	50	5.0	170	1.8	2	16.7	.085	216	7.0
1N4967P	24.0	50	5.0	175	2.0	2	18.2	.090	198	6.5
1N4968P	27.0	50	6.0	180	2.0	2	20.6	.090	176	6.0
1N4969P	30.0	40	8	190	2.5	2	22.8	.090	158	5.5
1N4970P	33.0	40	10	200	2.8	2	25.1	.095	144	5.0
1N4971P	36.0	30	11	220	3.0	2	27.4	.095	132	4.5
1N4972P	39.0	30	14	230	3.0	2	29.7	.095	122	4.0
1N4973P	43.0	30	20	240	3.3	2	32.7	.095	110	3.5
1N4974P	47.0	25	25	250	3.5	2	35.8	.095	100	3.2
1N4975P	51.0	25	27	270	4.0	2	38.8	.095	92	3.0

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	Nominal Zener Voltage $V_Z @ I_{ZT}$	Test Current I_{ZT}	Maximum Zener Impedance		Voltage Regulation ΔV_Z (note 1)	Maximum Reverse Leakage Current Voltage		Maximum Temperature Coeff. $\alpha_{V_Z} @ I_{ZT}$	Maximum Continuous Current I_{ZM}	Surge Current I_{ZSM}
			$Z_Z @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$ 1mA		I_R	V_R			8.3ms square wave Amps
Volts	mA	OHMS	OHMS	Volts	μA	Volts	%/°C	mA	Amps	
1N4976P	56.0	20	35	320	4.4	2	42.6	.095	84	2.8
1N4977P	62.0	20	42	400	5.0	2	47.1	.100	76	2.5
1N4978P	68.0	20	50	500	5.5	2	51.7	.100	70	2.2
1N4979P	75.0	20	55	620	6.0	2	56.0	.100	63.0	2.0
1N4980P	82.0	15	80	720	6.6	2	62.2	.100	58.0	1.8
1N4981P	91.0	15	90	760	7.5	2	69.2	.100	52.5	1.6
1N4982P	100.0	12	110	800	8.0	2	76.0	.100	47.5	1.4
1N4983P	110.0	12	125	1000	9.0	2	83.6	.100	43.0	1.2
1N4984P	120.0	10	170	1150	10	2	91.2	.100	39.5	1.00
1N4985P	130.0	10	190	1250	11	2	98.8	.105	36.6	0.80
1N4986P	150.0	8	330	1500	13	2	114.0	.105	31.6	0.75
1N4987P	160.0	8	350	1650	14	2	121.6	.105	29.4	0.70
1N4988P	180.0	5	450	1750	16	2	136.8	.110	26.4	0.60
1N4989P	200.0	5	500	1850	18	2	152	.110	23.6	0.50
1N4990P	220.0	5	550	2000	19	2	167	.115	21.6	0.50
1N4991P	240.0	5	650	2050	22	2	182	.115	19.8	0.40
1N4992P	270.0	5	800	2100	25	2	206	.120	17.5	0.35
1N4993P	300.0	4	950	2150	28	2	228	.120	15.6	0.30
1N4994P	330.0	4	1175	2200	32	2	251	.120	14.4	0.25
1N4995P	360.0	3	1400	2300	35	2	274	.120	13.0	0.22
1N4996P	390.0	3	1800	2500	40	2	297	.120	12.0	0.20

Standard voltage tolerances are $\pm 5\%$ with no suffix, suffix C $\pm 2\%$ and D suffix is $\pm 1\%$.

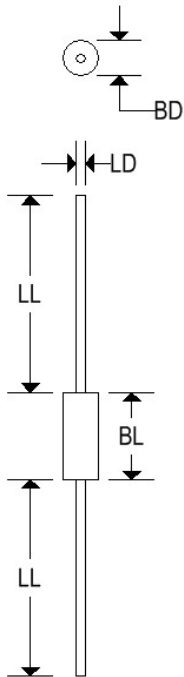
Note 1: Maximum voltage change ΔV_Z between 10% of I_{ZM} and 50% of I_{ZM} .

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MECHANICAL CHARACTERISTICS

Case:	DO-41
Marking:	Body painted, alpha-numeric
Polarity:	Cathode band



	DO-41			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	-	0.107	-	2.720
BL	-	0.205	-	5.207
LD	0.028	0.034	0.711	0.864
LL	1.000	-	25.400	-

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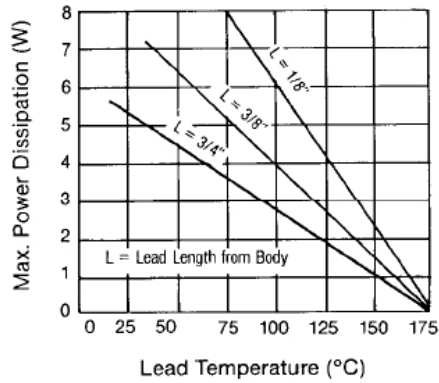


FIGURE 1
POWER DISSIPATION VS. LEAD
TEMPERATURE DERATING CURVE

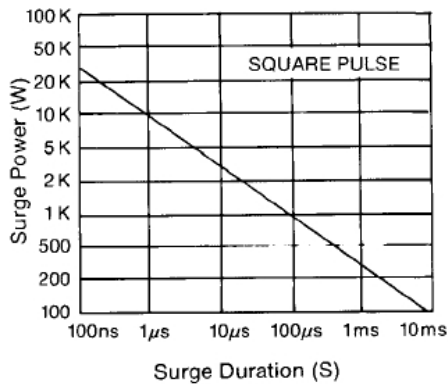


FIGURE 2
SURGE POWER
VS. SURGE DURATION

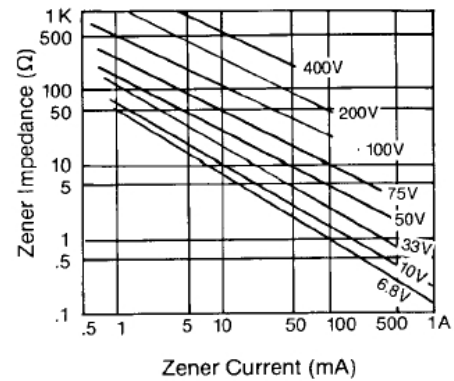


FIGURE 3
TYPICAL ZENER IMPEDANCE
VS. ZENER CURRENT