

### 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 $\Delta V_Z$ (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	$\mu\text{A}$	Volts	%/°C	mA	Amps	
1N4954	6.8	175	1.0	1000	0.7	150	5.2	.05	700	29.3
1N4955	7.5	175	1.5	800	0.7	100	5.7	.06	630	26.4
1N4956	8.2	150	1.5	600	0.7	50	6.2	.06	580	24.0
1N4957	9.1	150	2.0	400	0.7	25	6.9	.06	520	22.0
1N4958	10.0	125	2.0	125	0.8	25	7.6	.07	475	20.0
1N4959	11.0	125	2.5	130	0.8	10	8.4	.07	430	19.0
1N4960	12.0	100	2.5	140	0.8	10	9.1	.07	395	18.0
1N4961	13.0	100	3.0	145	0.9	10	9.9	.08	365	16.0
1N4962	15.0	75	3.5	150	1.0	5	11.4	.08	315	12.0
1N4963	16.0	75	3.5	155	1.1	5	12.2	.08	294	10.0
1N4964	18.0	65	4.0	160	1.2	5	13.7	.085	264	9.0
1N4965	20.0	65	4.5	165	1.5	2	15.2	.085	237	8.0
1N4966	22.0	50	5.0	170	1.8	2	16.7	.085	216	7.0
1N4967	24.0	50	5.0	175	2.0	2	18.2	.090	198	6.5
1N4968	27.0	50	6.0	180	2.0	2	20.6	.090	176	6.0
1N4969	30.0	40	8	190	2.5	2	22.8	.090	158	5.5
1N4970	33.0	40	10	200	2.8	2	25.1	.095	144	5.0
1N4971	36.0	30	11	220	3.0	2	27.4	.095	132	4.5
1N4972	39.0	30	14	230	3.0	2	29.7	.095	122	4.0
1N4973	43.0	30	20	240	3.3	2	32.7	.095	110	3.5
1N4974	47.0	25	25	250	3.5	2	35.8	.095	100	3.2
1N4975	51.0	25	27	270	4.0	2	38.8	.095	92	3.0

# 1N4954-1N4996

## 5 WATT GLASS ZENER DIODE

### 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 $\Delta V_Z$ (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	$\mu\text{A}$	Volts	%/°C	mA	Amps	
1N4976	56.0	20	35	320	4.4	2	42.6	.095	84	2.8
1N4977	62.0	20	42	400	5.0	2	47.1	.100	76	2.5
1N4978	68.0	20	50	500	5.5	2	51.7	.100	70	2.2
1N4979	75.0	20	55	620	6.0	2	56.0	.100	63.0	2.0
1N4980	82.0	15	80	720	6.6	2	62.2	.100	58.0	1.8
1N4981	91.0	15	90	760	7.5	2	69.2	.100	52.5	1.6
1N4982	100.0	12	110	800	8.0	2	76.0	.100	47.5	1.4
1N4983	110.0	12	125	1000	9.0	2	83.6	.100	43.0	1.2
1N4984	120.0	10	170	1150	10	2	91.2	.100	39.5	1.00
1N4985	130.0	10	190	1250	11	2	98.8	.105	36.6	0.80
1N4986	150.0	8	330	1500	13	2	114.0	.105	31.6	0.75
1N4987	160.0	8	350	1650	14	2	121.6	.105	29.4	0.70
1N4988	180.0	5	450	1750	16	2	136.8	.110	26.4	0.60
1N4989	200.0	5	500	1850	18	2	152	.110	23.6	0.50
1N4990	220.0	5	550	2000	19	2	167	.115	21.6	0.50
1N4991	240.0	5	650	2050	22	2	182	.115	19.8	0.40
1N4992	270.0	5	800	2100	25	2	206	.120	17.5	0.35
1N4993	300.0	4	950	2150	28	2	228	.120	15.6	0.30
1N4994	330.0	4	1175	2200	32	2	251	.120	14.4	0.25
1N4995	360.0	3	1400	2300	35	2	274	.120	13.0	0.22
1N4996	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  $\pm 1\%$ .

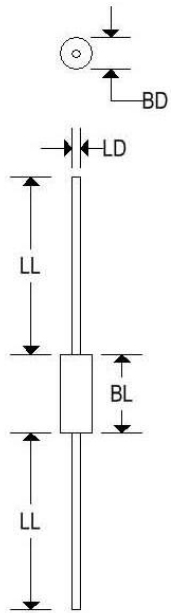
Note 1: Maximum voltage change  $\Delta V_Z$  between 10% of  $I_{ZM}$  and 50% of  $I_{ZM}$ .

# 1N4954-1N4996

5 WATT GLASS ZENER DIODE

## MECHANICAL CHARACTERISTICS

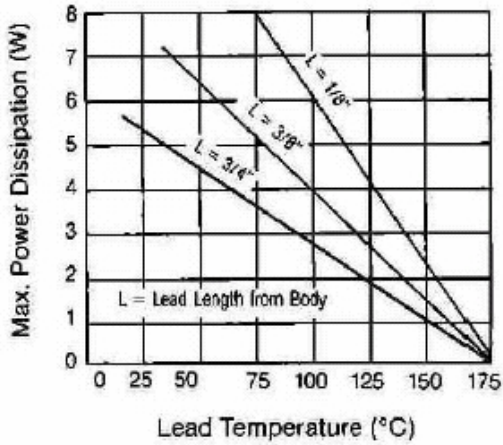
<b>Case:</b>	Digi F
<b>Marking:</b>	Body painted, alpha-numeric
<b>Polarity:</b>	Cathode band



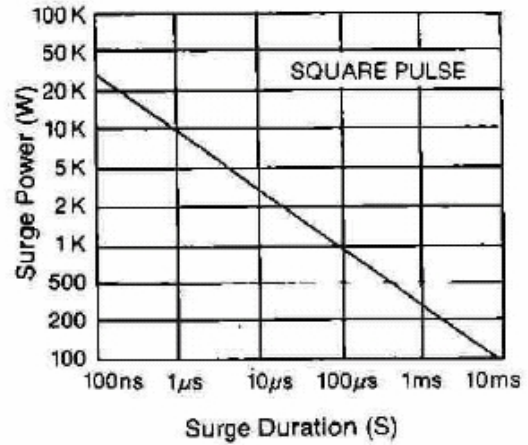
	Digi F			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	-	0.135	-	3.429
BL	-	0.180	-	4.572
LD	0.038	0.042	0.965	1.067
LL	1.000	-	25.400	-

# 1N4954-1N4996

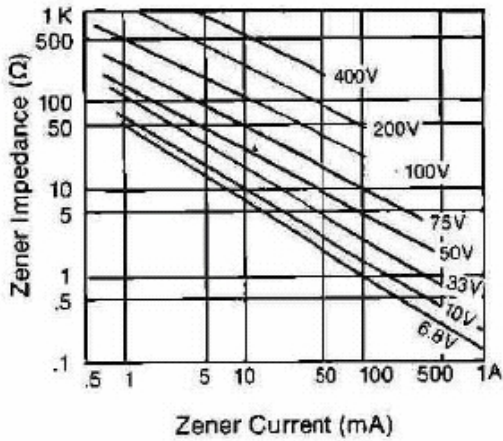
5 WATT GLASS ZENER DIODE



**FIGURE 1**  
POWER DISSIPATION vs. LEAD  
TEMPERATURE DERATING CURVE



**FIGURE 2**  
SURGE POWER vs.  
SURGE DURATION



**FIGURE 3**  
TYPICAL ZENER IMPEDANCE vs.  
ZENER CURRENT