DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

1N4728(A)-1N4764(A)

1 WATT ZENER DIODES

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

Characteristics	Value
Power dissipation @ 25°C	1W
Junction temperature	175°C
Operating and storage temperature range	-65 to +175°C
Maximum thermal resistance, junction to lead @ 3/8 inch lead length from body	80°C/W
Maximum thermal resistance, junction to ambient when mounted on FR4 PC board with 4mm2 copper pads and track width 1mm, length 25mm	140°C/W
Steady state power @ 3/8 inch lead length from body when mounted on FR4 PC board with 4mm2 copper pads and track width 1mm, length 25mm	 1.0W @ $T_L \le 95°C$ 1.0W @ $T_A \le 35°C$
Forward voltage @ 200mA	1.2 volts maximum
Solder temperatures	260°C for 10 s maximum

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Type Number	Zener Voltage[4] (V_Z)	Test Current (I_{ZT})	Maximum Dynamic Impedance[2] (Z_{ZT} @ I_{ZT})	Maximum Reverse Current (I_R @ V_R)	Test Voltage (V_R)	Maximum Regulator Current (I_{ZM}) T_A = 50°C	Maximum Knee Impedance[2] (Z_{ZK} @ I_{ZK})	Test Current (I_{ZK})	Maximum (Surge) Current[3] (I_S)
	VOLTS	mA	OHMS	µA	VOLTS	mA	OHMS	mA	mA
1N4728	3.3	76	10	100	1	276	400	1.0	1380
1N4729	3.6	69	10	100	1	252	400	1.0	1260
1N4730	3.9	64	9.0	50	1	234	400	1.0	1190
1N4731	4.3	58	9.0	10	1	217	400	1.0	1070
1N4732	4.7	53	8.0	10	1	193	500	1.0	970
1N4733	5.1	49	7.0	10	1	178	550	1.0	890
1N4734	5.6	45	5.0	10	2	162	600	1.0	810
1N4735	6.2	41	2.0	10	3	146	700	1.0	730
1N4736	6.8	37	3.5	10	4	133	700	1.0	660
1N4737	7.5	34	4.0	10	5	121	700	0.5	605
1N4738	8.2	31	4.5	10	6	110	700	0.5	550
1N4739	9.1	28	5.0	10	7	100	700	0.5	500
1N4740	10	25	7.0	10	7.6	91	700	0.25	454
1N4741	11	23	8.0	5	8.4	83	700	0.25	414
1N4742	12	21	9.0	5	9.1	76	700	0.25	380
1N4743	13	19	10	5	9.9	69	700	0.25	344
1N4744	15	17	14	5	11.4	61	700	0.25	304

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ELECTRICAL CHARACTERISTICS (continued)

Type Number	Zener Voltage[4] (V_Z)	Test Current (I_{ZT})	Maximum Dynamic Impedance[2] (Z_{ZT} @ I_{ZT})	Maximum Reverse Current (I_R @ V_R)	Test Voltage (V_R)	Maximum Regulator Current (I_{ZM}) T_A = 50°C	Maximum Knee Impedance[2] (Z_{ZK} @ I_{ZK})	Test Current (I_{ZK})	Maximum (Surge) Current[3] (I_S)
	VOLTS	mA	OHMS	µA	VOLTS	mA	OHMS	mA	mA
1N4745	16	15.5	16	5	12.2	57	700	0.25	285
1N4746	18	14	20	5	13.7	50	750	0.25	250
1N4747	20	12.5	22	5	15.2	45	750	0.25	225
1N4748	22	11.5	23	5	16.7	41	750	0.25	205
1N4749	24	10.5	25	5	18.2	38	750	0.25	190
1N4750	27	9.5	35	5	20.6	34	750	0.25	170
1N4751	30	8.5	40	5	22.8	30	1000	0.25	150
1N4752	33	7.5	45	5	25.1	27	1000	0.25	135
1N4753	36	7.0	50	5	27.4	25	1000	0.25	125
1N4754	39	6.5	60	5	29.7	23	1000	0.25	115
1N4755	43	6.0	70	5	32.7	22	1500	0.25	110
1N4756	47	5.5	80	5	35.8	19	1500	0.25	95
1N4757	51	5.0	95	5	38.8	18	1500	0.25	90
1N4758	56	4.5	110	5	42.6	16	2000	0.25	80
1N4759	62	4.0	125	5	47.1	14	2000	0.25	70
1N4760	68	3.7	150	5	51.7	13	2000	0.25	65
1N4761	75	3.3	175	5	56.0	12	2000	0.25	60
1N4762	82	3.0	200	5	62.2	11	3000	0.25	55
1N4763	91	2.8	250	5	69.2	10	3000	0.25	50
1N4764	100	2.5	350	5	76.0	9	3000	0.25	45

Note 1: Zener voltage tolerance on ''A'' suffix is ± 5%. No suffix denotes ±10% tolerance. ''C'' suffix denotes ± 2% and ''D'' suffix denotes ± 1%.
Note 2: Zener impedance is derived from the 60Hz ac voltage that results when an ac current having an rms value equal to 10% of the dc Zener current is superimposed on I_{ZT} or I_{ZK}. Zener impedance is measured at two points to ensure a sharp knee on the breakdown curve and eliminate unstable units.
Note 3: The reverse surge current is measured at 25°C ambient using a ½ square wave or equivalent sine wave pulse 1/120 second duration superimposed on I_{ZT}.
Note 4: Zener voltage (V_Z) is measured at T_L = 25°C (+8, -2°C) and 90 seconds after application of dc current.

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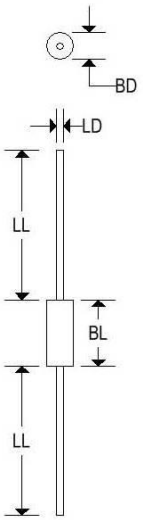
MECHANICAL CHARACTERISTICS

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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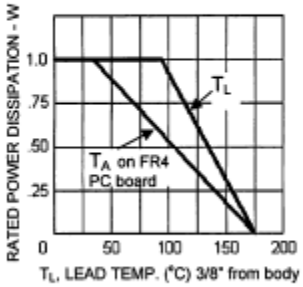

FIGURE 1
Power Derating Curve

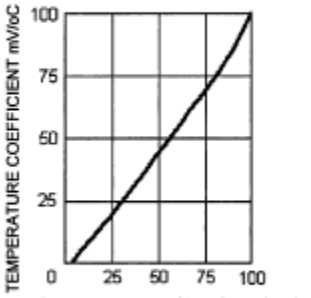

FIGURE 2
Temp. Coeff. vs. Zener Voltage

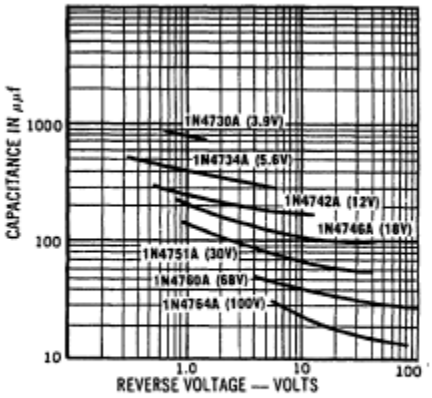

FIGURE 3
Capacitance vs. Voltage for Representative Types