

Silicon Z-Diode

ZPD15

15V/500mW

DATASHEET

OEM – Fairchild

Source: Fairchild Databook 1978

ZPD3,3 – ZPD33

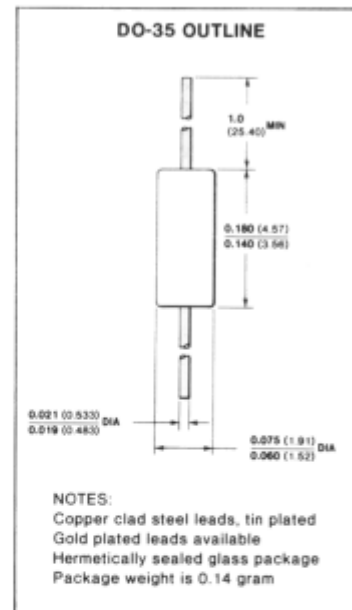
500 mW SILICON ZENER DIODES

ABSOLUTE MAXIMUM RATINGS (Note 1)**Temperatures**

Storage Temperature Range	-65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor	3.3 mW/°C

**ELECTRICAL CHARACTERISTICS** (25°C Ambient unless otherwise listed)

SYMBOL	V _Z			Z _Z		V _R	I _{ZM}		TC	
	Zener Voltage @I _Z = 5 mA			Max Zener	Impedance	Minimum Reverse Voltage @I _R = 100 nA	Maximum Zener Current		Temperature Coefficient of V _Z	
	MIN	NOM	MAX	I _Z = 5 mA f = 1 kHz	I _Z = 1 mA f = 1 kHz		25°C	45°C	MIN	MAX
UNIT	V	V	V	Ω	Ω	V	mA	mA	%/°C	%/°C
ZPD3,3	3.1	3.3	3.5	90	500	—	130	109	-0.080	-0.030
ZPD3,6	3.4	3.6	3.8	90	500	—	120	101	-0.080	-0.030
ZPD3,9	3.7	3.9	4.1	90	500	—	110	92	-0.070	-0.030
ZPD4,3	4.0	4.3	4.6	90	500	—	100	85	-0.060	-0.010
ZPD4,7	4.4	4.7	5.0	78	500	—	90	76	-0.050	+0.020
ZPD5,1	4.8	5.1	5.4	60	480	0.8	80	67	-0.030	+0.040
ZPD5,6	5.2	5.6	6.0	40	400	1.0	70	59	-0.020	+0.060
ZPD6,2	5.8	6.2	6.6	10	200	2.0	64	54	-0.010	+0.070
ZPD6,8	6.4	6.8	7.2	8.0	150	3.0	58	49	+0.020	+0.070
ZPD7,5	7.0	7.5	7.9	7.0	50	5.0	53	44	+0.030	+0.070
ZPD8,2	7.7	8.2	8.7	7.0	50	6.0	47	40	+0.040	+0.070
ZPD9,1	8.5	9.1	9.6	10	50	7.0	43	36	+0.050	+0.080
ZPD10	9.4	10.0	10.6	15	70	7.5	40	33	+0.050	+0.080
ZPD11	10.4	11.0	11.6	20	70	8.5	36	30	+0.050	+0.090
ZPD12	11.4	12.0	12.7	20	90	9.0	32	28	+0.060	+0.090
ZPD13	12.4	13.0	14.1	25	110	10.0	29	25	+0.070	+0.090

NOTES:

- These ratings are limiting values above which the serviceability of the diode may be impaired.
- These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
- V_F = 1.0 V (max) @I_F = 100 mA for all types.
- For product family characteristic curves, refer to Chapter 4, D13.

FAIRCHILD • ZPD SERIES

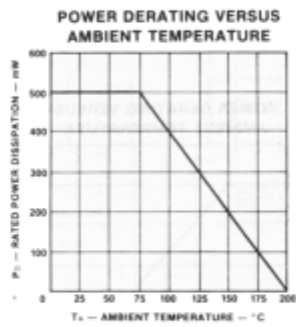
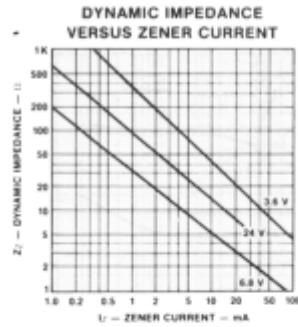
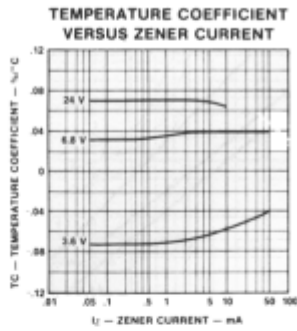
ELECTRICAL CHARACTERISTICS (25°C Ambient unless otherwise listed)

SYMBOL	V _Z			Z _Z		V _R	I _{ZM}		TC	
	Zener Voltage @I _Z = 5 mA			Max Zener	Impedance	Minimum Reverse Voltage @I _R = 100 nA	Maximum Zener Current		Temperature Coefficient of V _Z	
	MIN	NOM	MAX	I _Z = 5 mA f = 1 kHz	I _Z = 1 mA f = 1 kHz		25°C	45°C	MIN	MAX
UNIT	V	V	V	Ω	Ω	V	mA	mA	%/°C	%/°C
ZPD15	13.8	15.0	15.6	30	110	11.0	27	23	+0.070	+0.090
ZPD16	15.3	16.0	17.1	40	170	12.0	24	20	+0.080	+0.095
ZPD18	16.8	18.0	19.1	50	170	14.0	21	18	+0.080	+0.095
ZPD20	18.8	20.0	21.2	50	220	15.0	20	17	+0.080	+0.100
ZPD22	20.8	22.0	23.3	55	220	17.0	18	16	+0.080	+0.100
ZPD24	22.8	24.0	25.6	80	220	18.0	16	13	+0.080	+0.100
ZPD27	25.1	27.0	28.9	80	250	20.0	14	12	+0.080	+0.100
ZPD30	28.0	30.0	32.0	80	250	22.5	13	10	+0.080	+0.100
ZPD33	31.0	33.0	35.0	80	250	25.0	12	9	+0.080	+0.100

CURVE SET NUMBER D13

500 mW ZENER

**TYPICAL ELECTRICAL CHARACTERISTICS
AT 25°C AMBIENT TEMPERATURE**



NOISE DENSITY MEASUREMENT CIRCUIT
1N4099 — 1N4121
1N4620 — 1N4627

