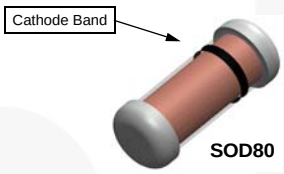
FAIRCHILD SEMICONDUCTOR®

April 2013

FLZ2V2 - FLZ39V
Zener Diodes



Color Band Marking

Tolerance	1st Band
A	Black
B	Black
C	Black
D	Black

Ordering Information

Device Marking	Device	Package	Reel Size	Tape Width	Quantity
Color Band Marking Per Tolerance	Refer to Product table list	SOD-80	7”	8 mm	2,500

Absolute Maximum Ratings(1)

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value	Units
P_D	Power Dissipation	500	mW
T_{STG}	Storage Temperature Range	-65 to +175	°C
T_J	Junction Operating Temperature Range	-65 to +175	°C
I_{ZM}	Maximum Regulator Current	P_D/V_Z	mA

Note:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.

Thermal Characteristics(2)

Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	300	°C/W

Note:
2. Device mounted on FR-4 PCB with 3” × 4.5” × 0.06 with only signal trace.

Electrical Characteristics

Values are at T_A=25°C unless otherwise noted.

Symbol	Parameter / Test condition	Min.	Typ.	Max.	Unit
V_F	Forward Voltage / I_F=200 mA			1.2	V

Electrical Characteristics

Values are at T_A = 25°C unless otherwise noted.

Product Group	Product Name	V_Z[3] (V) @ I_{ZT}			Z_{ZT}(Ω) @ I_{ZT}	I_{ZT} (mA)	Z_{ZK}(Ω) @ I_{ZK}	I_{ZK} (mA)	I_R(μA) @ V_R	V_R(V)
		Min.	Typ.	Max.	Max.	-	Max.	-	Max	-
FLZ2V2	FLZ2V2A	2.12	2.21	2.30	35	20	400	1	55	0.7
	FLZ2V2B	2.22	2.32	2.41	35	20	400	1	55	0.7
FLZ2V4	FLZ2V4A	2.33	2.42	2.52	35	20	400	1	84	1
	FLZ2V4B	2.43	2.53	2.63	35	20	400	1	84	1
FLZ2V7	FLZ2V7A	2.54	2.64	2.75	35	20	450	1	70	1
	FLZ2V7B	2.69	2.80	2.91	35	20	450	1	70	1
FLZ3V0	FLZ3V0A	2.85	2.96	3.07	35	20	450	1	35	1
	FLZ3V0B	3.01	3.12	3.22	35	20	450	1	35	1
FLZ3V3	FLZ3V3A	3.16	3.27	3.38	35	20	450	1	14	1
	FLZ3V3B	3.32	3.43	3.53	35	20	450	1	14	1
FLZ3V6	FLZ3V6A	3.455	3.57	3.695	48	20	850	1	2.8	1
	FLZ3V6B	3.60	3.73	3.845	48	20	850	1	2.8	1
FLZ3V9	FLZ3V9A	3.74	3.88	4.01	40	20	850	1	1.4	1
	FLZ3V9B	3.89	4.03	4.16	40	20	850	1	1.4	1
FLZ4V3	FLZ4V3A	4.04	4.15	4.29	32	20	850	1	0.47	1
	FLZ4V3B	4.17	4.30	4.43	32	20	850	1	0.47	1
	FLZ4V3C	4.30	4.44	4.57	32	20	850	1	0.47	1
FLZ4V7	FLZ4V7A	4.44	4.56	4.68	21	20	770	1	0.19	1
	FLZ4V7B	4.55	4.68	4.80	21	20	770	1	0.19	1
	FLZ4V7C	4.68	4.81	4.93	21	20	770	1	0.19	1
FLZ5V1	FLZ5V1A	4.81	4.94	5.07	17	20	685	1	0.19	1.5
	FLZ5V1B	4.94	5.08	5.20	17	20	685	1	0.19	1.5
	FLZ5V1C	5.09	5.23	5.37	17	20	685	1	0.19	1.5
FLZ5V6	FLZ5V6A	5.28	5.41	5.55	10.5	20	425	1	0.75	2.5
	FLZ5V6B	5.45	5.58	5.73	10.5	20	425	1	0.75	2.5
	FLZ5V6C	5.61	5.76	5.91	10.5	20	425	1	0.75	2.5
FLZ6V2	FLZ6V2A	5.78	5.94	6.09	8.5	20	255	1	3.3	3
	FLZ6V2B	5.96	6.12	6.27	8.5	20	255	1	3.3	3
	FLZ6V2C	6.12	6.28	6.44	8.5	20	255	1	3.3	3
FLZ6V8	FLZ6V8A	6.29	6.45	6.63	6.6	20	123	0.5	1.1	3.5
	FLZ6V8B	6.49	6.66	6.83	6.6	20	123	0.5	1.1	3.5
	FLZ6V8C	6.66	6.83	7.01	6.6	20	123	0.5	1.1	3.5
FLZ7V5	FLZ7V5A	6.85	7.04	7.22	6.6	20	95	0.5	0.3	4.0
	FLZ7V5B	7.07	7.26	7.45	6.6	20	95	0.5	0.3	4.0
	FLZ7V5C	7.29	7.49	7.67	6.6	20	95	0.5	0.3	4.0
FLZ8V2	FLZ8V2A	7.53	7.73	7.92	6.6	20	95	0.5	0.3	5
	FLZ8V2B	7.78	7.99	8.19	6.6	20	95	0.5	0.3	5
	FLZ8V2C	8.03	8.24	8.45	6.6	20	95	0.5	0.3	5

Electrical Characteristics (Continued) Values are at T_A = 25°C unless otherwise noted.

Product Group	Product Name	V_Z[3] (V) @ I_{ZT}			Z_{ZT}(Ω) @ I_{ZT}	I_{ZT} (mA)	Z_{ZK}(Ω) @ I_{ZK}	I_{ZK} (mA)	I_R(μA) @ V_R	V_R(V)
		Min.	Typ.	Max.	Max.	-	Max.	-	Max	-
FLZ9V1	FLZ9V1A	8.29	8.51	8.73	6.6	20	95	0.5	0.3	6
	FLZ9V1B	8.57	8.80	9.01	6.6	20	95	0.5	0.3	6
	FLZ9V1C	8.83	9.09	9.30	6.6	20	95	0.5	0.3	6
FLZ10V	FLZ10VA	9.12	9.39	9.59	6.6	20	95	0.5	0.11	7
	FLZ10VB	9.41	9.69	9.90	6.6	20	95	0.5	0.11	7
	FLZ10VC	9.70	10.06	10.20	6.6	20	95	0.5	0.11	7
FLZ11V	FLZ11VA	10.18	10.41	10.71	8.5	10	95	0.5	0.133	8
	FLZ11VB	10.50	10.73	11.05	8.5	10	95	0.5	0.133	8
	FLZ11VC	10.82	11.04	11.38	8.5	10	95	0.5	0.133	8
FLZ12V	FLZ12VA	11.13	11.38	11.71	9.5	10	95	0.5	0.133	9
	FLZ12VB	11.44	11.71	12.03	9.5	10	95	0.5	0.133	9
	FLZ12VC	11.74	12.05	12.35	9.5	10	95	0.5	0.133	9
FLZ13V	FLZ13VA	12.11	12.45	12.75	11.4	10	95	0.5	0.133	10
	FLZ13VB	12.55	12.87	13.21	11.4	10	95	0.5	0.133	10
	FLZ13VC	12.99	13.33	13.66	11.4	10	95	0.5	0.133	10
FLZ15V	FLZ15VA	13.44	13.79	14.13	13.3	10	95	0.5	0.133	11
	FLZ15VB	13.89	14.26	14.62	13.3	10	95	0.5	0.133	11
	FLZ15VC	14.35	14.72	15.09	13.3	10	95	0.5	0.133	11
FLZ16V	FLZ16VA	14.80	15.19	15.57	15.2	10	132	0.5	0.133	12
	FLZ16VB	15.25	15.65	16.04	15.2	10	132	0.5	0.133	12
	FLZ16VC	15.69	16.14	16.51	15.2	10	132	0.5	0.133	12
FLZ18V	FLZ18VA	16.22	16.70	17.06	19.4	10	123	0.5	0.133	13
	FLZ18VB	16.82	17.29	17.70	19.4	10	123	0.5	0.133	13
	FLZ18VC	17.42	17.90	18.33	19.4	10	123	0.5	0.133	13
FLZ20V	FLZ20VA	18.02	18.52	18.96	23.5	10	170	0.5	0.133	15
	FLZ20VB	18.63	19.13	19.59	23.5	10	170	0.5	0.133	15
	FLZ20VC	19.23	19.80	20.22	23.5	10	170	0.5	0.133	15
	FLZ20VD	19.72	20.30	20.72	23.5	10	170	0.5	0.133	15
FLZ22V	FLZ22VA	20.15	20.66	21.20	25.6	5	170	0.5	0.133	17
	FLZ22VB	20.64	21.21	21.71	25.6	5	170	0.5	0.133	17
	FLZ22VC	21.08	21.66	22.17	25.6	5	170	0.5	0.133	17
	FLZ22VD	21.52	22.15	22.63	25.6	5	170	0.5	0.133	17
FLZ24V	FLZ24VA	22.05	22.69	23.18	29.0	5	170	0.5	0.133	19
	FLZ24VB	22.61	23.24	23.77	29.0	5	170	0.5	0.133	19
	FLZ24VC	23.12	23.78	24.31	29.0	5	170	0.5	0.133	19
	FLZ24VD	23.63	24.31	24.85	29.0	5	170	0.5	0.133	19

Electrical Characteristics (Continued) Values are at T_A = 25°C unless otherwise noted.

Product Group	Product Name	V_Z[3] (V) @ I_{ZT}			Z_{ZT}(Ω) @ I_{ZT}	I_{ZT} (mA)	Z_{ZK}(Ω) @ I_{ZK}	I_{ZK} (mA)	I_R(μA) @ V_R	V_R(V)
		Min.	Typ.	Max.	Max.	-	Max.	-	Max	-
FLZ27V	FLZ27VA	24.26	24.89	25.52	38	5	210	0.5	0.133	21
	FLZ27VB	24.97	25.62	26.26	38	5	210	0.5	0.133	21
	FLZ27VC	25.63	26.29	26.95	38	5	210	0.5	0.133	21
	FLZ27VD	26.29	26.97	27.64	38	5	210	0.5	0.133	21
FLZ30V	FLZ30VA	26.99	27.69	28.39	46	5	210	0.5	0.133	23
	FLZ30VB	27.70	28.41	29.13	46	5	210	0.5	0.133	23
	FLZ30VC	28.36	29.09	29.82	46	5	210	0.5	0.133	23
	FLZ30VD	29.02	29.77	30.51	46	5	210	0.5	0.133	23
FLZ33V	FLZ33VA	29.68	30.45	31.22	55	5	210	0.5	0.133	25
	FLZ33VB	30.32	31.10	31.88	55	5	210	0.5	0.133	25
	FLZ33VC	30.90	31.70	32.50	55	5	210	0.5	0.133	25
	FLZ33VD	31.49	32.30	33.11	55	5	210	0.5	0.133	25
FLZ36V	FLZ36VA	32.14	32.96	33.79	63	5	210	0.5	0.133	27
	FLZ36VB	32.79	33.63	34.49	63	5	210	0.5	0.133	27
	FLZ36VC	33.40	34.27	35.13	63	5	210	0.5	0.133	27
	FLZ36VD	34.01	34.89	35.77	63	5	210	0.5	0.133	27
FLZ39V	FLZ39VA	34.68	35.57	36.47	72	5	210	0.5	0.133	30
	FLZ39VB	35.36	36.26	37.19	72	5	210	0.5	0.133	30
	FLZ39VC	36.00	36.92	37.85	72	5	210	0.5	0.133	30
	FLZ39VD	36.63	37.58	38.52	72	5	210	0.5	0.133	30

Note:

3. Zener Voltage(V_Z): The zener voltage is measured with the device junction in the thermal equilibrium at the lead temperature (TL) at 30°C ± 1°C and 3/8” lead length.

Typical Performance Characteristics

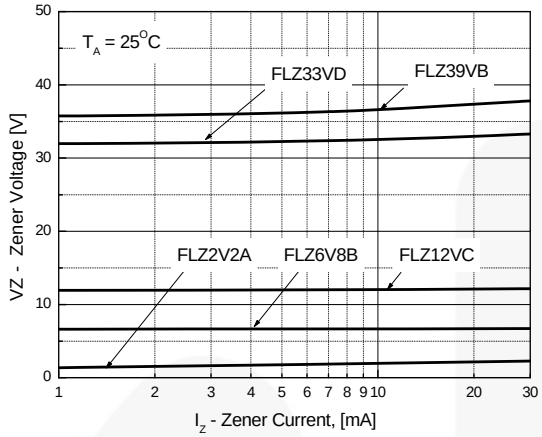


Figure 1. Zener current vs. Zener Voltage

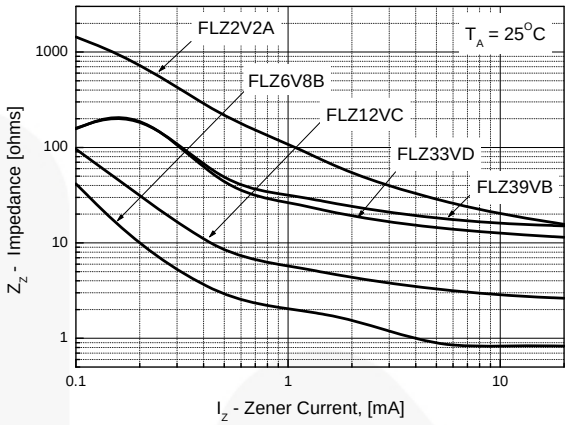


Figure 2. Zener current vs. Zener Impedence

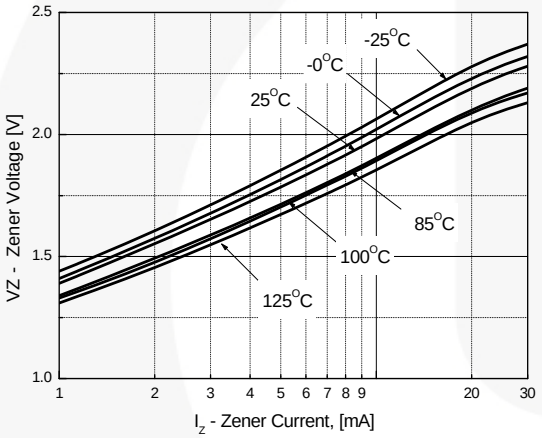


Figure 3. FLZ2V2A Zener current vs. Zener Voltage

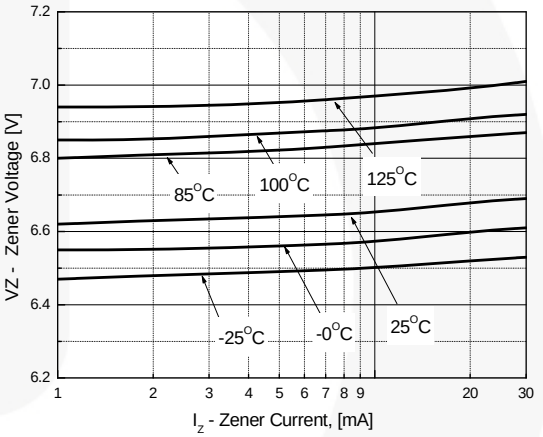


Figure 4. FLZ6V8B Zener current vs. Zener Voltage

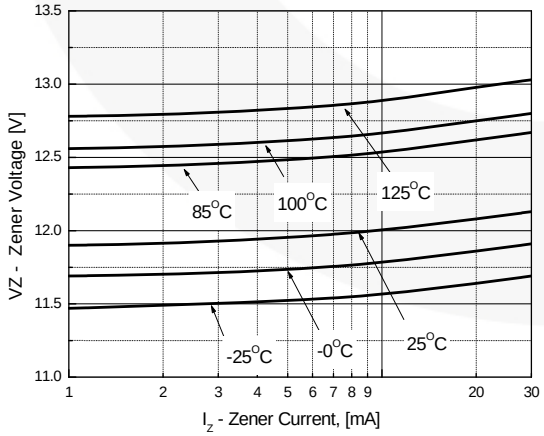


Figure 5. FLZ12VC Zener current vs. Zener Voltage

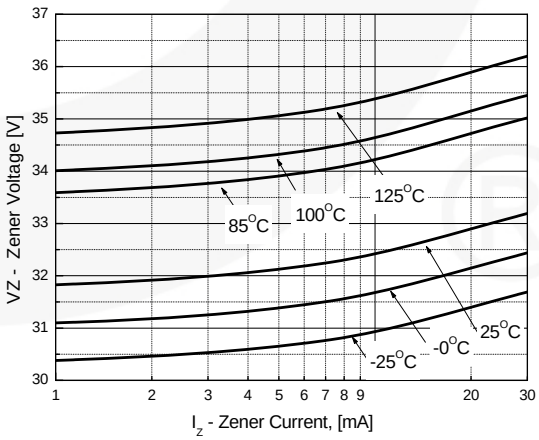


Figure 6. FLZ33VD Zener current vs. Zener Voltage

Typical Performance Characteristics (Continued)

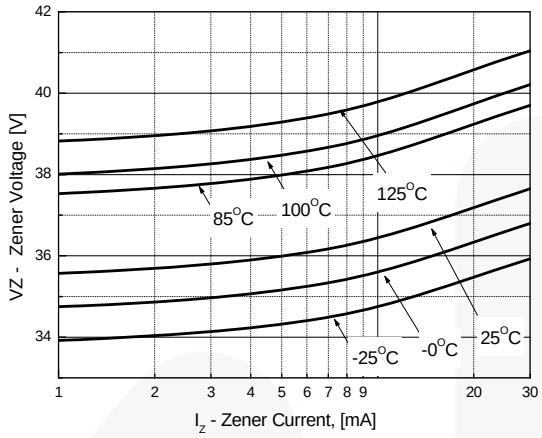


Figure 7. FLZ39VB
Zener current vs. Zener Voltage

Physical Dimensions

SOD-80

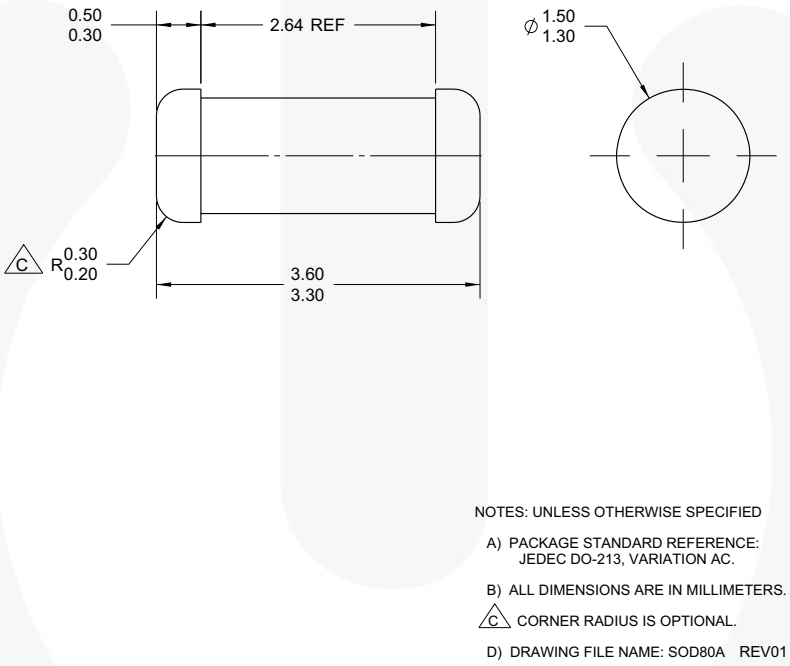


Figure 8. 2-TERMINAL, SOD-80, JEDEC DO-213AC, MINI-MELF

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