

GSZM47xxx Series

Silicon Planar Zener Diodes

Vz Range: 3V to 75V Power Dissipation: 1W

Features

- Lead free
- Standard zener voltage tolerance is $\pm 10\%$
- Add suffix "A" for $\pm 5\%$ tolerance and suffix "B" for $\pm 2\%$ tolerance
- For use in stabilizing and clipping circuits with high power rating



MELF

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Power Dissipation ¹	P _D	1	W
Max. Thermal Resistance Junction to Ambient ¹	R _{θJA}	150	°C/W
Operating Junction Temperature	T _J	175	°C
Storage Temperature Range	T _{STG}	-65 to +175	°C

Note:

1. Valid provided that electrodes are kept at ambient temperature.

Electrical Characteristics (T_A=25°C, V_F max=1.2V at I_F=200mA)

Type	Zener Voltage ³				Dynamic Resistance ¹			Reverse Current		Maximum Surge Current ⁴	Maximum Regulator Current ²
	V _Z			at I _{ZT}	Z _{YT} at I _{ZT}	Z _{ZK}	at I _{ZK}	I _R	at V _R	at T _A =25°C	
	Nom. (V)	Min. (V)	Max. (V)	(mA)	Max. (Ω)	Max. (Ω)	(mA)	Max. (μA)	(V)	I _{ZSM} (mA)	I _{ZM} (mA)
GSZM4727PF	3	2.70	3.30	83	10	400	1	150	1	1375	275
GSZM4728PF	3.3	2.97	3.63	76	10	400	1	150	1	1375	275
GSZM4729PF	3.6	3.24	3.96	69	10	400	1	100	1	1260	252
GSZM4730PF	3.9	3.51	4.29	64	9	400	1	100	1	1190	234
GSZM4731PF	4.3	3.87	4.73	58	9	400	1	50	1	1070	217
GSZM4732PF	4.7	4.23	5.17	53	8	500	1	10	1	970	193
GSZM4733PF	5.1	4.59	5.61	49	7	550	1	10	1	890	178
GSZM4734PF	5.6	5.04	6.16	45	5	600	1	10	2	810	162
GSZM4735PF	6.2	5.58	6.82	41	2	700	1	10	3	730	146
GSZM4736PF	6.8	6.12	7.48	37	3.5	700	1	10	4	660	133
GSZM4737PF	7.5	6.75	8.25	34	4	700	0.5	10	5	605	121
GSZM4738PF	8.2	7.38	9.02	31	4.5	700	0.5	10	6	550	110
GSZM4739PF	9.1	8.19	10.01	28	5	700	0.5	10	7	500	100
GSZM4740PF	10	9.00	11.00	25	7	700	0.25	10	7.6	454	91
GSZM4741PF	11	9.90	12.10	23	8	700	0.25	5	8.4	414	83
GSZM4742PF	12	10.80	13.20	21	9	700	0.25	5	9.1	380	76
GSZM4743PF	13	11.70	14.30	19	10	700	0.25	5	9.9	344	69
GSZM4744PF	15	13.50	16.50	17	14	700	0.25	5	11.4	304	61
GSZM4745PF	16	14.40	17.60	15.5	16	700	0.25	5	12.2	285	57
GSZM4746PF	18	16.20	19.80	14	20	750	0.25	5	13.7	250	50
GSZM4747PF	20	18.00	22.00	12.5	22	750	0.25	5	15.2	225	45
GSZM4748PF	22	19.80	24.20	11.5	23	750	0.25	5	16.7	205	41
GSZM4749PF	24	21.60	26.40	10.5	25	750	0.25	5	18.2	190	38
GSZM4750PF	27	24.30	29.70	9.5	35	750	0.25	5	20.6	170	34
GSZM4751PF	30	27.00	33.00	8.5	40	1000	0.25	5	22.8	150	30
GSZM4752PF	33	29.70	36.30	7.5	45	1000	0.25	5	25.1	135	27
GSZM4753PF	36	32.40	39.60	7	50	1000	0.25	5	27.4	125	25
GSZM4754PF	39	35.10	42.90	6.5	60	1000	0.25	5	29.7	115	23
GSZM4755PF	43	38.70	47.30	6	70	1500	0.25	5	32.7	110	22
GSZM4756PF	47	42.30	51.70	5.5	80	1500	0.25	5	35.8	95	19
GSZM4757PF	51	45.90	56.10	5	95	1500	0.25	5	38.8	90	18
GSZM4758PF	56	50.40	61.60	4.5	110	2000	0.25	5	42.6	80	16
GSZM4759PF	62	55.80	68.20	4	125	2000	0.25	5	47.1	70	14
GSZM4760PF	68	61.20	74.80	3.7	150	2000	0.25	5	51.7	65	13
GSZM4761PF	75	67.50	82.50	3.3	175	2000	0.25	5	56	60	12

Note:

1. The dynamic resistance is derived from the 60Hz AC voltage which results when an AC current having an RMS value equal to 10% of the Zener Current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK}. Dynamic resistance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units.
2. Valid provided that electrodes are kept at ambient temperature.
3. Tested with pulses t_p=20ms.
4. The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current I_{ZT}.

Electrical Characteristics (T_A=25°C, V_F max=1.2V at I_F=200mA)

Type	Zener Voltage ³				Dynamic Resistance ¹			Reverse Current		Maximum Surge Current ⁴	Maximum Regulator Current ²
	V _Z			at I _{ZT}	Z _{YT} at I _{ZT}	Z _{ZK}	at I _{ZK}	I _R	at V _R	at T _A =25°C	
	Nom. (V)	Min. (V)	Max. (V)	(mA)	Max. (Ω)	Max. (Ω)	(mA)	Max. (μA)	(V)	I _{ZSM} (mA)	I _{ZM} (mA)
GSZM4727APF	3	2.85	3.15	83	10	400	1	150	1	1375	275
GSZM4728APF	3.3	3.14	3.47	76	10	400	1	150	1	1375	275
GSZM4729APF	3.6	3.42	3.78	69	10	400	1	100	1	1260	252
GSZM4730APF	3.9	3.71	4.10	64	9	400	1	100	1	1190	234
GSZM4731APF	4.3	4.09	4.52	58	9	400	1	50	1	1070	217
GSZM4732APF	4.7	4.47	4.94	53	8	500	1	10	1	970	193
GSZM4733APF	5.1	4.85	5.36	49	7	550	1	10	1	890	178
GSZM4734APF	5.6	5.32	5.88	45	5	600	1	10	2	810	162
GSZM4735APF	6.2	5.89	6.51	41	2	700	1	10	3	730	146
GSZM4736APF	6.8	6.46	7.14	37	3.5	700	1	10	4	660	133
GSZM4737APF	7.5	7.13	7.88	34	4	700	0.5	10	5	605	121
GSZM4738APF	8.2	7.79	8.61	31	4.5	700	0.5	10	6	550	110
GSZM4739APF	9.1	8.65	9.56	28	5	700	0.5	10	7	500	100
GSZM4740APF	10	9.50	10.50	25	7	700	0.25	10	7.6	454	91
GSZM4741APF	11	10.45	11.55	23	8	700	0.25	5	8.4	414	83
GSZM4742APF	12	11.40	12.60	21	9	700	0.25	5	9.1	380	76
GSZM4743APF	13	12.35	13.65	19	10	700	0.25	5	9.9	344	69
GSZM4744APF	15	14.25	15.75	17	14	700	0.25	5	11.4	304	61
GSZM4745APF	16	15.20	16.80	15.5	16	700	0.25	5	12.2	285	57
GSZM4746APF	18	17.10	18.90	14	20	750	0.25	5	13.7	250	50
GSZM4747APF	20	19.00	21.00	12.5	22	750	0.25	5	15.2	225	45
GSZM4748APF	22	20.90	23.10	11.5	23	750	0.25	5	16.7	205	41
GSZM4749APF	24	22.80	25.20	10.5	25	750	0.25	5	18.2	190	38
GSZM4750APF	27	25.65	28.35	9.5	35	750	0.25	5	20.6	170	34
GSZM4751APF	30	28.50	31.50	8.5	40	1000	0.25	5	22.8	150	30
GSZM4752APF	33	31.35	34.65	7.5	45	1000	0.25	5	25.1	135	27
GSZM4753APF	36	34.20	37.80	7	50	1000	0.25	5	27.4	125	25
GSZM4754APF	39	37.05	40.95	6.5	60	1000	0.25	5	29.7	115	23
GSZM4755APF	43	40.85	45.15	6	70	1500	0.25	5	32.7	110	22
GSZM4756APF	47	44.65	49.35	5.5	80	1500	0.25	5	35.8	95	19
GSZM4757APF	51	48.45	53.55	5	95	1500	0.25	5	38.8	90	18
GSZM4758APF	56	53.20	58.80	4.5	110	2000	0.25	5	42.6	80	16
GSZM4759APF	62	58.90	65.10	4	125	2000	0.25	5	47.1	70	14
GSZM4760APF	68	64.60	71.40	3.7	150	2000	0.25	5	51.7	65	13
GSZM4761APF	75	71.25	78.75	3.3	175	2000	0.25	5	56	60	12

Note:

1. The dynamic resistance is derived from the 60Hz AC voltage which results when an AC current having an RMS value equal to 10% of the Zener Current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK}. Dynamic resistance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units.
2. Valid provided that electrodes are kept at ambient temperature.
3. Tested with pulses t_p=20ms.
4. The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current I_{ZT}.

Electrical Characteristics (T_A=25°C, V_F max=1.2V at I_F=200mA)

Type	Zener Voltage ³				Dynamic Resistance ¹			Reverse Current		Maximum Surge Current ⁴	Maximum Regulator Current ²
	V _Z			at I _{ZT}	Z _{ZT} at I _{ZT}	Z _{ZK}	at I _{ZK}	I _R	at V _R	at T _A =25°C	
	Nom. (V)	Min. (V)	Max. (V)	(mA)	Max. (Ω)	Max. (Ω)	(mA)	Max. (μA)	(V)	I _{ZSM} (mA)	I _{ZM} (mA)
GSZM4727BPF	3	2.94	3.06	83	10	400	1	150	1	1375	275
GSZM4728BPF	3.3	3.23	3.37	76	10	400	1	150	1	1375	275
GSZM4729BPF	3.6	3.53	3.67	69	10	400	1	100	1	1260	252
GSZM4730BPF	3.9	3.82	3.98	64	9	400	1	100	1	1190	234
GSZM4731BPF	4.3	4.21	4.39	58	9	400	1	50	1	1070	217
GSZM4732BPF	4.7	4.61	4.79	53	8	500	1	10	1	970	193
GSZM4733BPF	5.1	5.00	5.20	49	7	550	1	10	1	890	178
GSZM4734BPF	5.6	5.49	5.71	45	5	600	1	10	2	810	162
GSZM4735BPF	6.2	6.08	6.32	41	2	700	1	10	3	730	146
GSZM4736BPF	6.8	6.66	6.94	37	3.5	700	1	10	4	660	133
GSZM4737BPF	7.5	7.35	7.65	34	4	700	0.5	10	5	605	121
GSZM4738BPF	8.2	8.04	8.36	31	4.5	700	0.5	10	6	550	110
GSZM4739BPF	9.1	8.92	9.28	28	5	700	0.5	10	7	500	100
GSZM4740BPF	10	9.80	10.20	25	7	700	0.25	10	7.6	454	91
GSZM4741BPF	11	10.78	11.22	23	8	700	0.25	5	8.4	414	83
GSZM4742BPF	12	11.76	12.24	21	9	700	0.25	5	9.1	380	76
GSZM4743BPF	13	12.74	13.26	19	10	700	0.25	5	9.9	344	69
GSZM4744BPF	15	14.70	15.30	17	14	700	0.25	5	11.4	304	61
GSZM4745BPF	16	15.68	16.32	15.5	16	700	0.25	5	12.2	285	57
GSZM4746BPF	18	17.64	18.36	14	20	750	0.25	5	13.7	250	50
GSZM4747BPF	20	19.60	20.40	12.5	22	750	0.25	5	15.2	225	45
GSZM4748BPF	22	21.56	22.44	11.5	23	750	0.25	5	16.7	205	41
GSZM4749BPF	24	23.52	24.48	10.5	25	750	0.25	5	18.2	190	38
GSZM4750BPF	27	26.46	27.54	9.5	35	750	0.25	5	20.6	170	34
GSZM4751BPF	30	29.40	30.60	8.5	40	1000	0.25	5	22.8	150	30
GSZM4752BPF	33	32.34	33.66	7.5	45	1000	0.25	5	25.1	135	27
GSZM4753BPF	36	35.28	36.72	7	50	1000	0.25	5	27.4	125	25
GSZM4754BPF	39	38.22	39.78	6.5	60	1000	0.25	5	29.7	115	23
GSZM4755BPF	43	42.14	43.86	6	70	1500	0.25	5	32.7	110	22
GSZM4756BPF	47	46.06	47.94	5.5	80	1500	0.25	5	35.8	95	19
GSZM4757BPF	51	49.98	52.02	5	95	1500	0.25	5	38.8	90	18
GSZM4758BPF	56	54.88	57.12	4.5	110	2000	0.25	5	42.6	80	16
GSZM4759BPF	62	60.76	63.24	4	125	2000	0.25	5	47.1	70	14
GSZM4760BPF	68	66.64	69.36	3.7	150	2000	0.25	5	51.7	65	13
GSZM4761BPF	75	73.50	76.50	3.3	175	2000	0.25	5	56	60	12

Note:

1. The dynamic resistance is derived from the 60Hz AC voltage which results when an AC current having an RMS value equal to 10% of the Zener Current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK}. Dynamic resistance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units.
2. Valid provided that electrodes are kept at ambient temperature.
3. Tested with pulses t_p=20ms.
4. The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current I_{ZT}.

Electrical Characteristic Curves

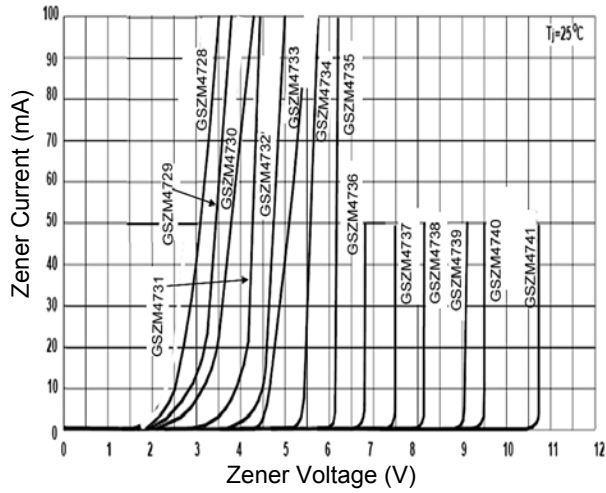


Figure 1. Zener Characteristics Curve

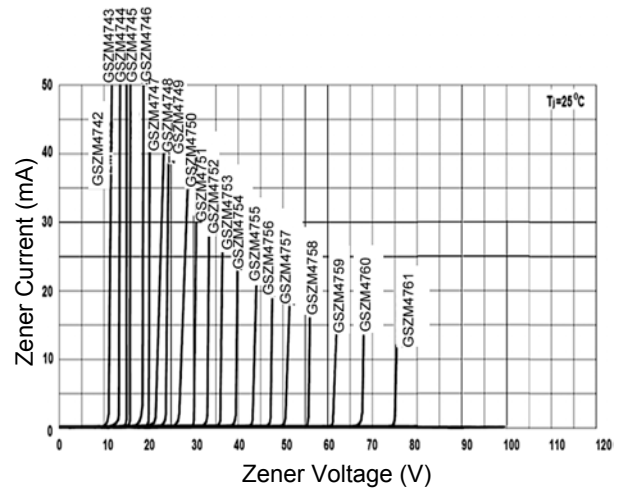


Figure 2. Zener Characteristics Curve

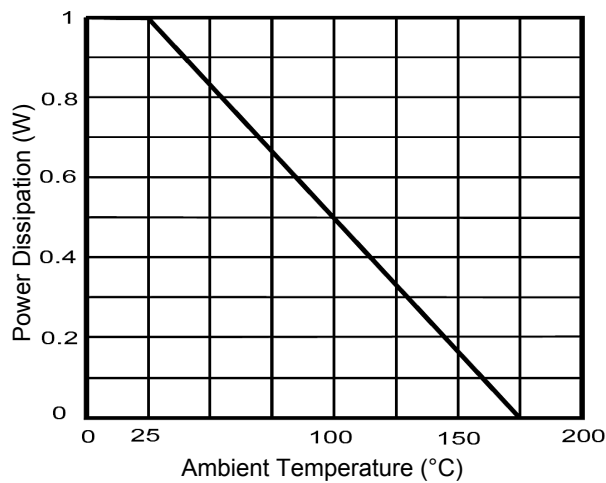
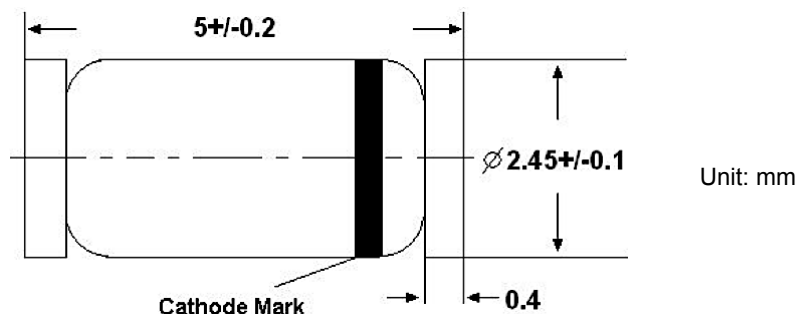


Figure 3. Power Derating Curve

Package Outline Dimensions (MELF)



Order Information

Device	Package	Carrier	Quantity
GSZM47xxx	MELF	Tape & Reel	5,000 Pcs / Reel