

POWERMITE®

LOW NOISE 1 WATT Zener Diodes

**1PMT4614 thru 1PMT4627
and
1PMT4099 thru 1PMT4135**

Description

In Microsemi's Powermite® surface mount package, these zener diodes provide power-handling capabilities found in larger packages. In addition to its size advantages, Powermite® package features include a full metallic bottom that eliminates the possibility of solder flux entrapment during assembly, and a unique locking tab acts as an integral heat sink. Its innovative design makes this device ideal for use with automatic insertion equipment.

Features

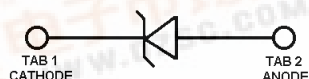
- Surface Mount Packaging
- Integral Heat Sink Locking Tabs
- Compatible with automatic insertion equipment
- Full metallic bottom eliminates flux entrapment
- Zener voltage 1.8 to 100V
- Low noise
- Low reverse leakage current
- Tight tolerance available

Maximum Ratings

- Junction and storage temperatures: -55°C to +150°C
- DC power dissipation: 1 watt
- Forward voltage:
@ 200 mA 1.1 volts



DO-216



CIRCUIT DIAGRAM

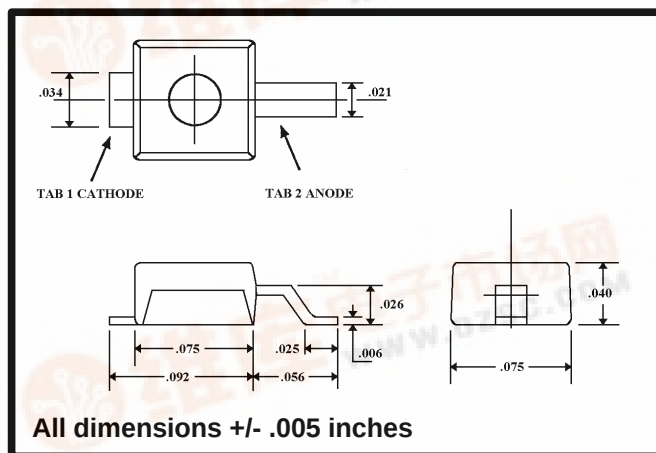
Mechanical Characteristics

- Cathode designated by TAB 1
- Mounting position any way
- Molded package
- Weight: 0.016 gram (approximate)
- Thermal resistance 30°C/W junction to TAB 1

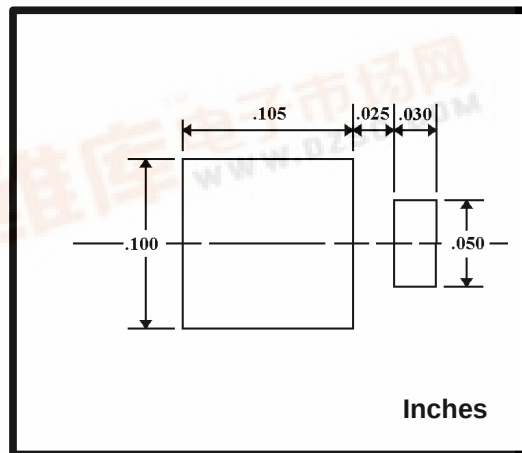
Packaging

- Tape & Reel EIA Standard 481

Mechanical Specifications

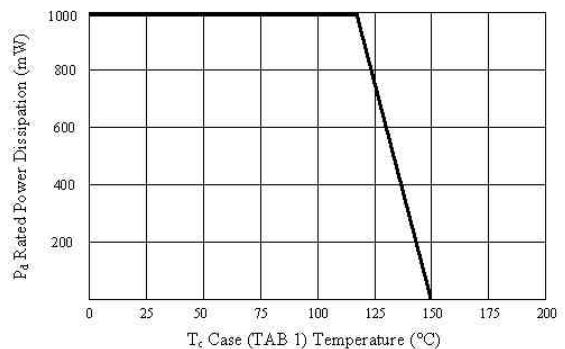
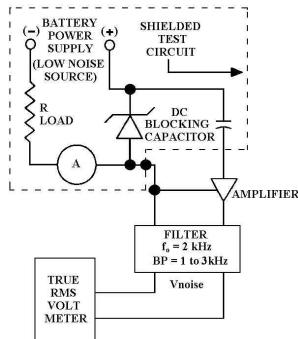


Mounting Pad Dimensions



Electrical Characteristics @ 25°C

MICROSEMI NUMBER	DEVICE MARKING	NOMINAL ZENER VOLTAGE (1) $V_Z @ I_{ZT}$	ZENER TEST CURRENT I_{ZT}	MAXIMUM ZENER IMPEDANCE (2) Z_{ZT}	MAXIMUM REVERSE CURRENT $I_Z @ V_R$		MAXIMUM NOISE DENSITY $N_D @ I_{ZT}$	MAXIMUM ZENER CURRENT (3) I_{ZM}	TYPICAL TEMPERATURE COEFFICIENT OF ZENER VOLTAGE α_{VZ}
		VOLTS	μA	OHMS	μA	VOLTS	$\mu V/ \sqrt{HZ}$	mA	%/°C
1PMT4614	614	1.8	250	1200	7.5	1.0	1	262.4	-0.075
1PMT4615	615	2.0	250	1250	5.0	1.0	1	240.6	-0.075
1PMT4616	616	2.2	250	1300	4.0	1.0	1	218.7	-0.075
1PMT4617	617	2.4	250	1400	2.0	1.0	1	207.8	-0.075
1PMT4618	618	2.7	250	1500	1.0	1.0	1	196.8	-0.075
1PMT4619	619	3.0	250	1600	0.8	1.0	1	190.3	-0.075
1PMT4620	620	3.3	250	1650	7.5	1.5	1	185.9	-0.075
1PMT4621	621	3.6	250	1700	7.5	2.0	1	181.5	-0.065
1PMT4622	622	3.9	250	1650	5.0	2.0	1	174.9	-0.060
1PMT4623	623	4.3	250	1600	4.0	2.0	1	168.4	-0.050
1PMT4624	624	4.7	250	1550	10	3.0	1	164.0	-0.040 +0.020
1PMT4625	625	5.1	250	1500	10	3.0	2	153.1	-0.045 +0.030
1PMT4626	626	5.6	250	1400	10	4.0	4	142.2	-0.020 +0.040
1PMT4627	627	6.2	250	1200	10	5.0	5	133.4	-0.010 +0.050
1PMT4099	099	6.8	250	200	10	5.17	40	122.5	0.040
1PMT4100	100	7.5	250	200	10	5.70	40	111.5	0.045
1PMT4101	101	8.2	250	200	1.0	6.24	40	100.6	0.048
1PMT4102	102	8.7	250	200	1.0	6.61	40	96.2	0.049
1PMT4103	103	9.1	250	200	1.0	6.92	40	91.9	0.050
1PMT4104	104	10	250	200	1.0	7.60	40	83.1	0.055
1PMT4105	105	11	250	200	.05	8.44	40	76.5	0.060
1PMT4106	106	12	250	200	.05	9.12	40	69.9	0.065
1PMT4107	107	13	250	200	.05	9.87	40	63.4	0.065
1PMT4108	108	14	250	200	.05	10.65	40	59.0	0.070
1PMT4109	109	15	250	100	.05	11.40	40	54.8	0.070
1PMT4110	110	16	250	100	.05	12.15	40	52.5	0.070
1PMT4111	111	17	250	100	.05	12.92	40	48.1	0.075
1PMT4112	112	18	250	100	.05	13.37	40	45.9	0.075
1PMT4113	113	19	250	150	.05	14.44	40	43.7	0.075
1PMT4114	114	20	250	150	.01	15.20	40	41.6	0.075
1PMT4115	115	22	250	150	.01	16.72	40	37.2	0.080
1PMT4116	116	24	250	150	.01	18.25	40	34.9	0.080
1PMT4117	117	25	250	150	.01	19.00	40	32.8	0.080
1PMT4118	118	27	250	150	.01	20.45	40	30.6	0.085
1PMT4119	119	28	250	200	.01	21.28	40	30.6	0.085
1PMT4120	120	30	250	200	.01	22.80	40	28.4	0.085
1PMT4121	121	33	250	200	.01	25.08	40	26.2	0.085
1PMT4122	122	36	250	200	.01	27.38	40	24.0	0.090
1PMT4123	123	39	250	200	.01	29.65	40	21.4	0.090
1PMT4124	124	43	250	250	.01	32.65	40	19.5	0.090
1PMT4125	125	47	250	250	.01	35.75	40	17.7	0.090
1PMT4126	126	51	250	300	.01	38.76	40	16.4	0.090
1PMT4127	127	56	250	300	.01	42.60	40	14.7	0.090
1PMT4128	128	60	250	400	.01	45.60	40	13.9	0.090
1PMT4129	129	62	250	500	.01	47.10	40	13.3	0.090
1PMT4130	130	68	250	700	.01	51.68	40	12.2	0.095
1PMT4131	131	75	250	700	.01	57.00	40	11.2	0.095
1PMT4132	132	82	250	800	.01	62.32	40	10.1	0.095
1PMT4133	133	87	250	1000	.01	66.12	40	9.6	0.095
1PMT4134	134	91	250	1200	.01	69.16	40	9.2	0.095
1PMT4135	135	100	250	1500	.01	76.00	40	8.3	0.095



NOTE 1: Product shown has a standard tolerance of $\pm 5\%$ on the nominal zener voltage. Also available in 2% and 1% tolerance with suffix C and D respectively. V_Z is measured at I_{ZT} with T_c (TAB 1) at 30°C.

NOTE 2: Zener impedance is derived by superimposing on I_{ZT} a 60 Hz rms ac current equal to 10% of I_{ZT} (25 μA ac.).

NOTE 3: Based upon 1 W maximum power dissipation. Allowance has been made for the higher voltage associated with operation at higher currents and temperature. For determination of voltage change with current deviations from I_{ZT} see Micro Note 202