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## POWERMITE®

3.0 WATT  
Zener Diodes

1PMT5913B  
thru  
1PMT5956B

### DESCRIPTION

In Microsemi's Powermite® surface mount package, these zener diodes provide power-handling capabilities (**3.0 WATTS**) 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

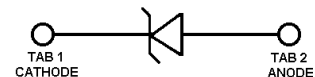
- Surface Mount Packaging
- Integral Heat Sink Locking Tabs
- Compatible with automatic insertion equipment
- Full metallic bottom eliminates flux entrapment
- Zener voltage 3.3 to 200 Volts
- Low reverse leakage
- Tight tolerance available
- ESD Rating of >16kV per human body model

### MAXIMUM RATINGS

- Junction and storage temperatures: -55°C to +150°C
- DC power dissipation: 3.0 watt with TAB 1 @ 60°C
- Forward voltage:  
@ 200 mA 1.2 volts



DO-216



CIRCUIT DIAGRAM

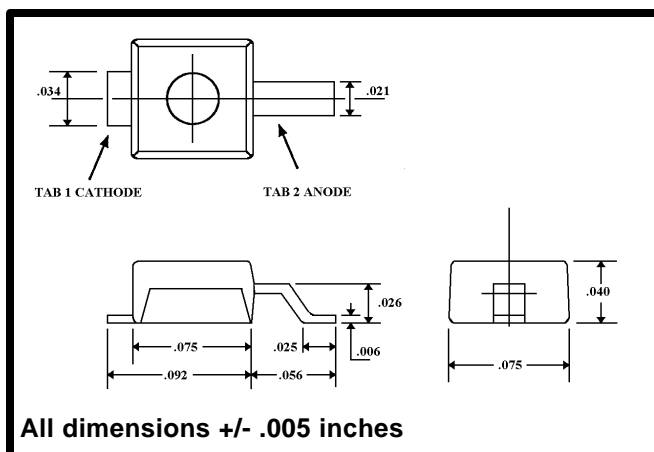
### MECHANICAL CHARACTERISTICS

- Cathode designated by TAB 1
- Mounting position any way
- Molded package
- Weight: 0.016 gram (approximate)
- Thermal resistance 30°C/W junction to TAB1

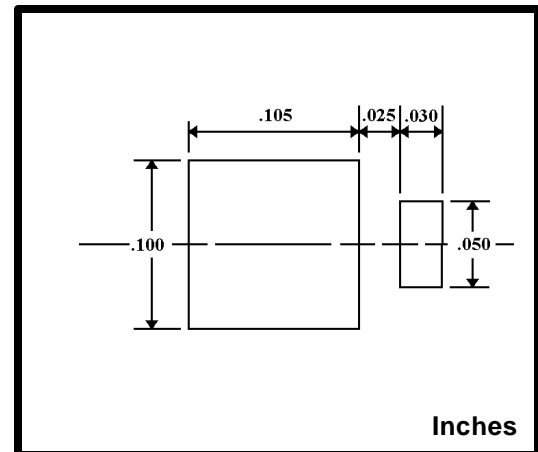
### PACKAGING

- Tape & Reel EIA Standard 481
- 7 inch 3,000 pieces
- 13 inch 12,000 pieces

### Mechanical Specifications

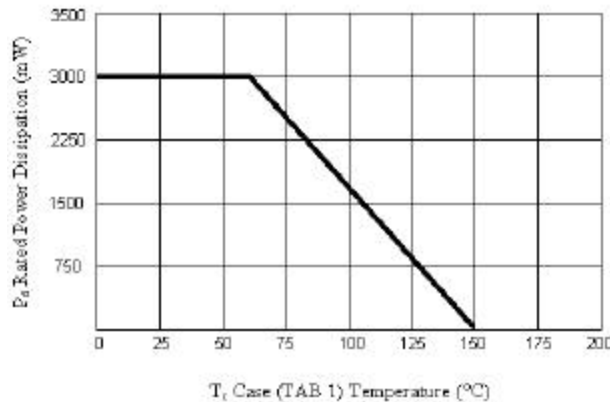


### Mounting Pad Dimensions



Electrical Characteristics @ T<sub>L</sub> = 30° C

MICROSEMI NUMBER	DEVICE MARKING	ZENER VOLTAGE (1) V <sub>Z</sub>	TEST CURRENT I <sub>ZT</sub>	DYNAMIC IMPEDANCE (2) Z <sub>ZT</sub>	KNEE CURRENT I <sub>ZK</sub>	KNEE IMPEDANCE Z <sub>ZK</sub>	REVERSE CURRENT I <sub>R</sub> (MAX)	REVERSE VOLTAGE V <sub>R</sub>	MAX ZENER CURRENT (3) I <sub>ZM</sub>
		VOLTS	mA	OHMS	mA	OHMS	μ Adc	VOLTS	mA
1PMT5913B	913	3.3	113.6	10	1.0	500	100	1.0	749.1
1PMT5914B	914	3.6	104.2	9.0	1.0	500	75	1.0	686.4
1PMT5915B	915	3.9	96.1	7.5	1.0	500	25	1.0	633.6
1PMT5916B	916	4.3	87.2	6.0	1.0	500	5	1.0	547.2
1PMT5917B	917	4.7	79.8	5.0	1.0	500	5	1.5	526.4
1PMT5918B	918	5.1	73.5	4.0	1.0	350	5	2.0	481.8
1PMT5919B	919	5.6	66.9	2.0	1.0	250	5	3.0	432.3
1PMT5920B	920	6.2	60.5	2.0	1.0	200	5	4.0	397.7
1PMT5921B	921	6.8	55.1	2.5	1.0	200	5	5.2	363.0
1PMT5922B	922	7.5	50	3.0	0.5	400	5	6.0	330.0
1PMT5923B	923	8.2	45.7	3.5	0.5	400	5	6.5	300.3
1PMT5924B	924	9.1	41.2	4.0	0.5	500	5	7.0	270.6
1PMT5925B	925	10	37.5	4.5	0.25	500	5	8.0	247.5
1PMT5926B	926	11	34.1	5.5	0.25	550	1	8.4	224.4
1PMT5927B	927	12	31.2	6.5	0.25	550	1	9.1	206.2
1PMT5928B	928	13	28.8	7.0	0.25	550	1	9.9	189.8
1PMT5929B	929	15	25	9.0	0.25	600	1	11.4	165.0
1PMT5930B	930	16	23.4	10	0.25	600	1	12.2	153.5
1PMT5931B	931	18	20.8	12	0.25	650	1	13.7	68.5
1PMT5932B	932	20	18.7	14	0.25	650	1	15.2	123.8
1PMT5933B	933	22	17	17.5	0.25	650	1	16.7	112.2
1PMT5934B	934	24	15.6	19	0.25	700	1	18.2	102.3
1PMT5935B	935	27	13.9	23	0.25	700	1	20.6	90.8
1PMT5936B	936	30	12.5	28	0.25	750	1	22.8	82.5
1PMT5937B	937	33	11.4	33	0.25	800	1	25.1	74.3
1PMT5938B	938	36	10.4	38	0.25	850	1	27.4	67.7
1PMT5939B	939	39	9.6	45	0.25	900	1	29.7	62.7
1PMT5940B	940	43	8.7	53	0.25	950	1	32.7	56.1
1PMT5941B	941	47	8.0	67	0.25	1000	1	35.8	51.2
1PMT5942B	942	51	7.3	70	0.25	1100	1	38.8	47.9
1PMT5943B	943	56	6.7	86	0.25	1300	1	42.6	42.9
1PMT5944B	944	62	6.0	100	0.25	1500	1	47.1	38.6
1PMT5945B	945	68	5.5	120	0.25	1700	1	51.2	36.3
1PMT5946B	946	75	5.0	140	0.25	2000	1	56	33.0
1PMT5947B	947	82	4.6	160	0.25	2500	1	62.2	29.7
1PMT5948B	948	91	4.1	200	0.25	3000	1	69.2	26.4
1PMT5949B	949	100	3.7	250	0.25	3100	1	76	24.8
1PMT5950B	950	110	3.4	300	0.25	4000	1	83.6	21.5
1PMT5951B	951	120	3.1	380	0.25	4500	1	91.2	19.8
1PMT5952B	952	130	2.9	450	0.25	5000	1	98.8	18.1
1PMT5953B	953	150	2.5	600	0.25	6000	1	114	16.5
1PMT5954B	954	160	2.3	700	0.25	6500	1	121.6	14.9
1PMT5955B	955	180	2.1	900	0.25	7000	1	136.8	13.2
1PMT5956B	956	200	1.9	1200	0.25	8000	1	152	11.6



**NOTE 1:** Product shown has a standard tolerance of ±5% on the nominal zener voltage. Also available in 2% and 1% tolerance with suffix C and D respectively. V<sub>Z</sub> is measured at I<sub>ZT</sub> with T<sub>c</sub> (TAB 1) 30° C . Voltage measurement to be performed 20 seconds after application of dc current.

**NOTE 2:** Zener impedance is derived by superimposing on I<sub>ZT</sub> a 60Hz rms ac current equal to 10% of I<sub>ZT</sub>.

**NOTE 3:** Based upon 3 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<sub>ZT</sub> see Micro Note 202.