

1PMT5920B Series

MAXIMUM RATINGS

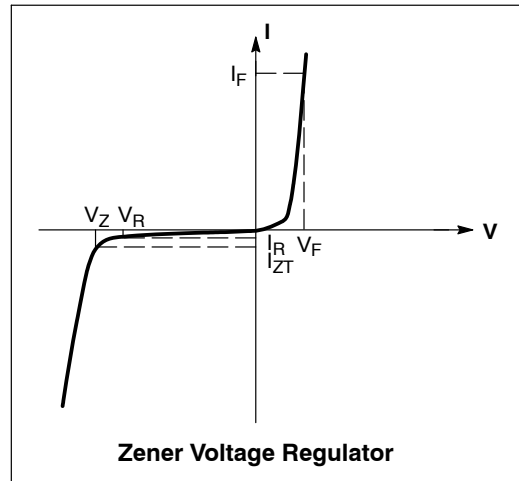
Rating	Symbol	Value	Unit
DC Power Dissipation @ $T_A = 25^\circ\text{C}$ (Note 1) Derate above 25°C	P_D	500	mW
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	4.0	$\text{mW}/^\circ\text{C}$
Thermal Resistance, Junction-to-Lead (Anode)	$R_{\theta J\text{anode}}$	248	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Lead (Anode)	$R_{\theta J\text{anode}}$	35	$^\circ\text{C}/\text{W}$
Maximum DC Power Dissipation (Note 2) Thermal Resistance from Junction-to-Tab (Cathode)	P_D $R_{\theta J\text{cathode}}$	3.2 23	W $^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. Mounted with recommended minimum pad size, PC board FR-4.
2. At Tab (Cathode) temperature, $T_{\text{tab}} = 75^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_L = 25^\circ\text{C}$ unless otherwise noted, $V_F = 1.5\text{ V Max.}$ @ $I_F = 200\text{ mAdc}$ for all types)

Symbol	Parameter
V_Z	Reverse Zener Voltage @ I_{ZT}
I_{ZT}	Reverse Current
Z_{ZT}	Maximum Zener Impedance @ I_{ZT}
I_{ZK}	Reverse Current
Z_{ZK}	Maximum Zener Impedance @ I_{ZK}
I_R	Reverse Leakage Current @ V_R
V_R	Reverse Voltage
I_F	Forward Current
V_F	Forward Voltage @ I_F



ELECTRICAL CHARACTERISTICS ($T_L = 30^\circ\text{C}$ unless otherwise noted, $V_F = 1.25\text{ Volts}$ @ 200 mA)

Device*	Device Marking	Zener Voltage (Note 3)			I_{ZT}	$I_R @ V_R$	V_R	$Z_{ZT} @ I_{ZT}$ (Note 4)	$Z_{ZK} @ I_{ZK}$ (Note 4)	I_{ZK}
		$V_Z @ I_{ZT}$ (Volts)								
		Min	Nom	Max						
1PMT5920BT1G	20B	5.89	6.2	6.51	60.5	5.0	4.0	2.0	200	1.0
1PMT5921BT1G	21B	6.46	6.8	7.14	55.1	5.0	5.2	2.5	200	1.0
1PMT5924BT1G	24B	8.64	9.1	9.56	41.2	5.0	7.0	4.0	500	0.5
1PMT5927BT1G	27B	11.4	12	12.6	31.2	1.0	9.1	6.5	550	0.25
1PMT5929BT1G	29B	14.25	15	15.75	25	1.0	11.4	9.0	600	0.25
1PMT5933BT1G	33B	20.9	22	23.1	17	1.0	16.7	17.5	650	0.25
1PMT5934BT1G	34B	22.8	24	25.2	15.6	1.0	18.2	19	700	0.25
1PMT5935BT1G	35B	25.65	27	28.35	13.9	1.0	20.6	23	700	0.25
1PMT5941BT1G	41B	44.65	47	49.35	8.0	1.0	35.8	67	1000	0.25

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

3. Zener voltage is measured with the device junction in thermal equilibrium with an ambient temperature of 25°C .
4. Zener Impedance Derivation Z_{ZT} and Z_{ZK} are measured by dividing the AC voltage drop across the device by the AC current applied. The specified limits are for $I_{Z(\text{ac})} = 0.1 I_{Z(\text{dc})}$ with the ac frequency = 60 Hz.

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TYPICAL CHARACTERISTICS

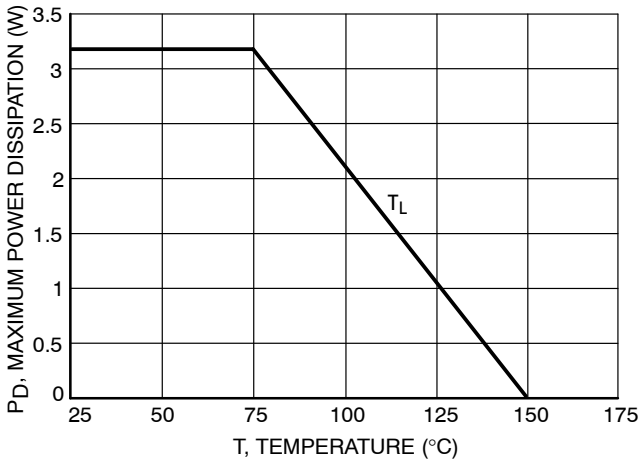


Figure 1. Steady State Power Derating

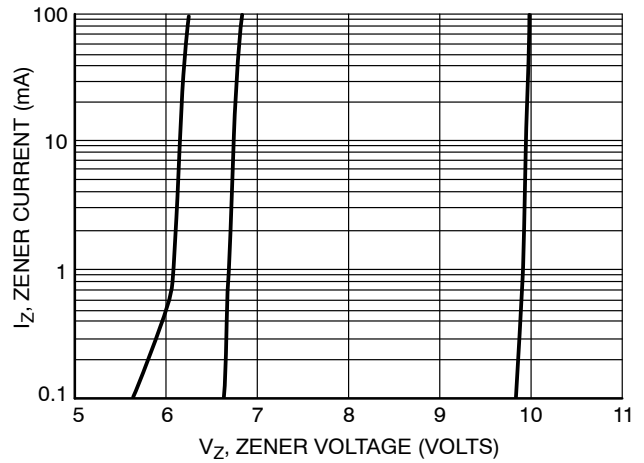


Figure 2. V_Z to 10 Volts

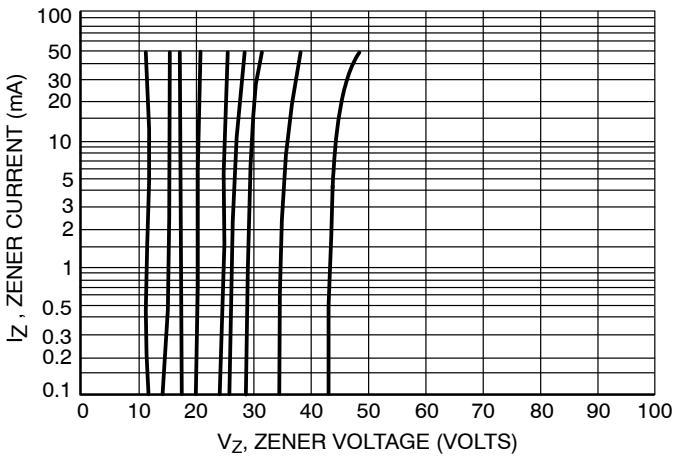


Figure 3. $V_Z = 12$ thru 47 Volts

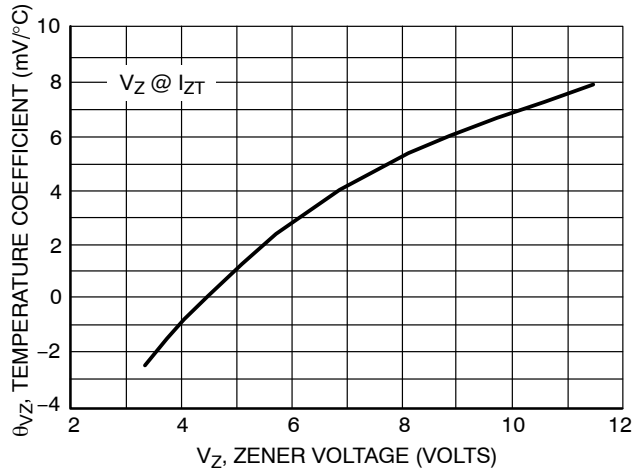


Figure 4. Zener Voltage - To 12 Volts

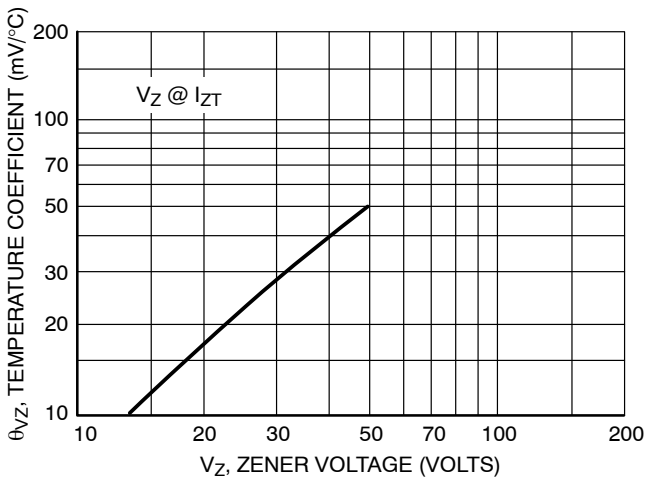


Figure 5. Zener Voltage - 14 To 47 Volts

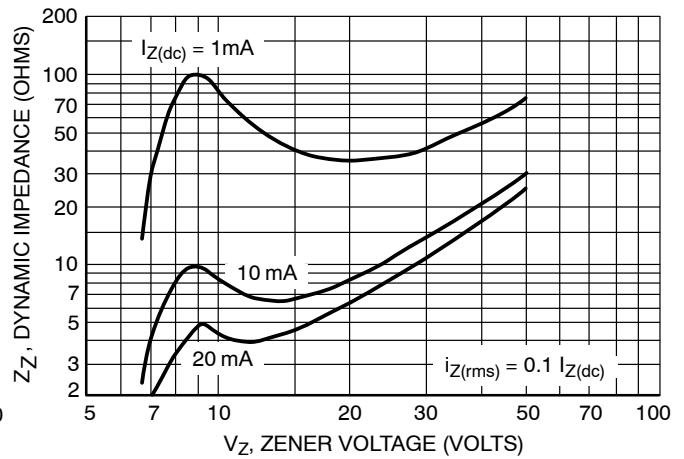


Figure 6. Effect of Zener Voltage

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TYPICAL CHARACTERISTICS

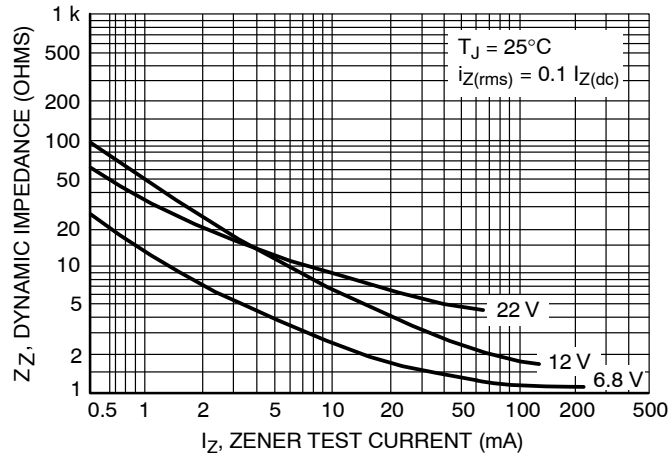


Figure 7. Effect of Zener Current

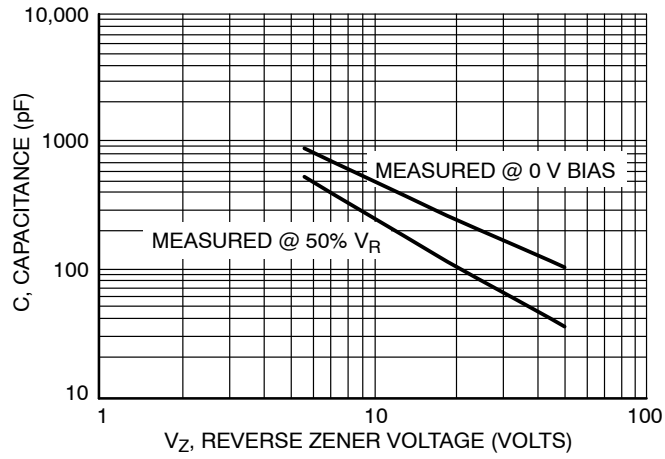
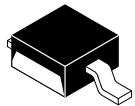


Figure 8. Capacitance versus Reverse Zener Voltage

MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS

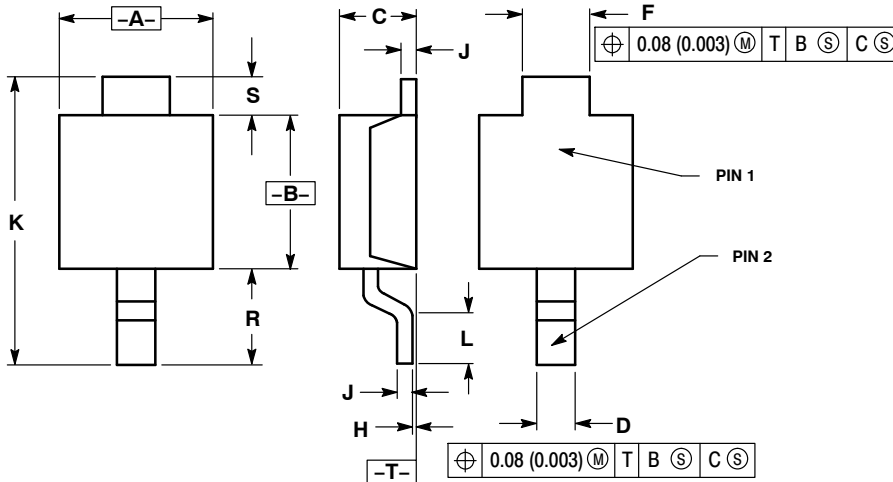
ON Semiconductor®



SCALE 4:1

POWERMITE CASE 457-04 ISSUE F

DATE 14 MAY 2013



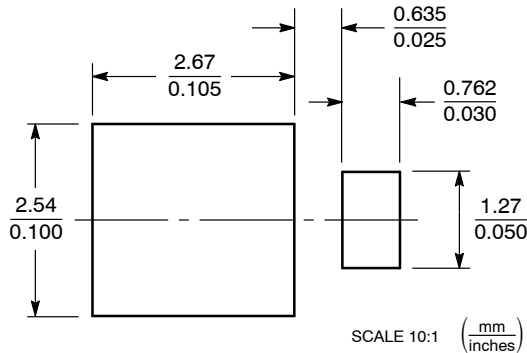
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH, PROTRUSIONS OR GATE BURRS SHALL NOT EXCEED 0.15 (0.006) PER SIDE.

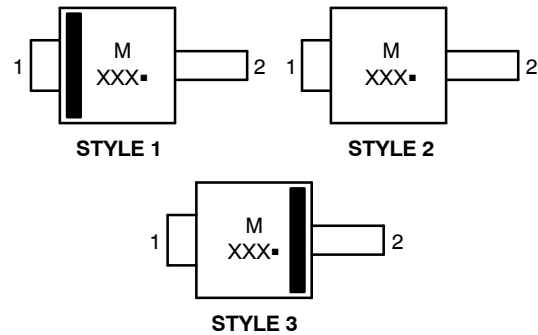
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.75	2.05	0.069	0.081
B	1.75	2.18	0.069	0.086
C	0.85	1.15	0.033	0.045
D	0.40	0.69	0.016	0.027
F	0.70	1.00	0.028	0.039
H	-0.05	+0.10	-0.002	+0.004
J	0.10	0.25	0.004	0.010
K	3.60	3.90	0.142	0.154
L	0.50	0.80	0.020	0.031
R	1.20	1.50	0.047	0.059
S	0.50 REF		0.019 REF	

- STYLE 1:
PIN 1. CATHODE
2. ANODE
- STYLE 2:
PIN 1. ANODE OR CATHODE
2. CATHODE OR ANODE
(BI-DIRECTIONAL)
- STYLE 3:
PIN 1. ANODE
2. CATHODE

SOLDERING FOOTPRINT*



GENERIC MARKING DIAGRAMS*



XXX = Specific Device Code
M = Date Code
▪ = Pb-Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present.

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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