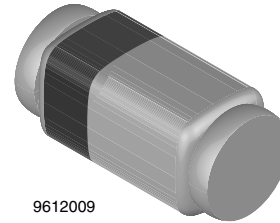
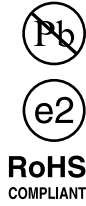


Small Signal Zener Diodes

Features

- Very sharp reverse characteristic
- Low reverse current level
- Available with tighter tolerances
- Very high stability
- Low noise
- V_Z - tolerance $\pm 5\%$
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



9612009

Applications

- Voltage stabilization

Mechanical Data

Case: QuadromELF SOD-80

Weight: approx. 34 mg

Packaging codes/options:

GS18/10K per 13" reel 10K/box

GS08/2.5K per 7" reel 12.5K/box

Absolute Maximum Ratings

$T_{amb} = 25\text{ }^\circ\text{C}$, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Power dissipation	$R_{thJA} \leq 300\text{ K/W}$	P_{tot}	500	mW
Z-current		I_Z	P_{tot}/V_Z	mA
Junction temperature		T_j	175	$^\circ\text{C}$
Storage temperature range		T_{stg}	- 65 to + 175	$^\circ\text{C}$

Thermal Characteristics

$T_{amb} = 25\text{ }^\circ\text{C}$, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Junction to ambient air	On PC board 50 mm x 50 mm x 1.6 mm	R_{thJA}	500	K/W

Electrical Characteristics

$T_{amb} = 25\text{ }^\circ\text{C}$, unless otherwise specified

Parameter	Test condition	Symbol	Min.	Typ.	Max.	Unit
Forward voltage	$I_F = 200\text{ mA}$	V_F			1.5	V

TZQ5221B to TZQ5267B



Vishay Semiconductors

Electrical Characteristics

Part number	Zener voltage	Dynamic resistance		Test current		Temperature coefficient of Zener voltage	Reverse leakage current	
	V_{Znom}	r_{zjT} at I_{ZT}	r_{zjk} at I_{ZK}	I_{ZT}	I_{ZK}	TK_{VZ}	I_R at V_R	
	V	Ω	Ω	mA	mA	%/K	μA	V
TZQ5221B	2.4	< 30	< 1200	20	0.25	< - 0.085	< 100	1
TZQ5222B	2.5	< 30	< 1250	20	0.25	< - 0.085	< 100	1
TZQ5223B	2.7	< 30	< 1300	20	0.25	< - 0.080	< 75	1
TZQ5224B	2.8	< 30	< 1400	20	0.25	< - 0.080	< 75	1
TZQ5225B	3	< 29	< 1600	20	0.25	< - 0.075	< 50	1
TZQ5226B	3.3	< 28	< 1600	20	0.25	< - 0.070	< 25	1
TZQ5227B	3.6	< 24	< 1700	20	0.25	< - 0.065	< 15	1
TZQ5228B	3.9	< 23	< 1900	20	0.25	< - 0.060	< 10	1
TZQ5229B	4.3	< 22	< 2000	20	0.25	< \pm 0.055	< 5	1
TZQ5230B	4.7	< 19	< 1900	20	0.25	< \pm 0.030	< 5	2
TZQ5231B	5.1	< 17	< 1600	20	0.25	< \pm 0.030	< 5	2
TZQ5232B	5.6	< 11	< 1600	20	0.25	< + 0.038	< 5	3
TZQ5233B	6	< 7	< 1600	20	0.25	< + 0.038	< 5	3.5
TZQ5234B	6.2	< 7	< 1000	20	0.25	< + 0.045	< 5	4
TZQ5235B	6.8	< 5	< 750	20	0.25	< + 0.050	< 3	5
TZQ5236B	7.5	< 6	< 500	20	0.25	< + 0.058	< 3	6
TZQ5237B	8.2	< 8	< 500	20	0.25	< + 0.062	< 3	6.5
TZQ5238B	8.7	< 8	< 600	20	0.25	< + 0.065	< 3	6.5
TZQ5239B	9.1	< 10	< 600	20	0.25	< + 0.068	< 3	7
TZQ5240B	10	< 17	< 600	20	0.25	< + 0.075	< 3	8
TZQ5241B	11	< 22	< 600	20	0.25	< + 0.076	< 2	8.4
TZQ5242B	12	< 30	< 600	20	0.25	< + 0.077	< 1	9.1
TZQ5243B	13	< 13	< 600	9.5	0.25	< + 0.079	< 0.5	9.9
TZQ5244B	14	< 15	< 600	9	0.25	< + 0.082	< 0.1	10
TZQ5245B	15	< 16	< 600	8.5	0.25	< + 0.082	< 0.1	11
TZQ5246B	16	< 17	< 600	7.8	0.25	< + 0.083	< 0.1	12
TZQ5247B	17	< 19	< 600	7.4	0.25	< + 0.084	< 0.1	13
TZQ5248B	18	< 21	< 600	7	0.25	< + 0.085	< 0.1	14
TZQ5249B	19	< 23	< 600	6.6	0.25	< + 0.086	< 0.1	14
TZQ5250B	20	< 25	< 600	6.2	0.25	< + 0.086	< 0.1	15
TZQ5251B	22	< 29	< 600	5.6	0.25	< + 0.087	< 0.1	17
TZQ5252B	24	< 33	< 600	5.2	0.25	< + 0.088	< 0.1	18
TZQ5253B	25	< 35	< 600	5	0.25	< + 0.089	< 0.1	19
TZQ5254B	27	< 41	< 600	4.6	0.25	< + 0.090	< 0.1	21
TZQ5255B	28	< 44	< 600	4.5	0.25	< + 0.091	< 0.1	21
TZQ5256B	30	< 49	< 600	4.2	0.25	< + 0.091	< 0.1	23
TZQ5257B	33	< 58	< 700	3.8	0.25	< + 0.092	< 0.1	25
TZQ5258B	36	< 70	< 700	3.4	0.25	< + 0.093	< 0.1	27
TZQ5259B	39	< 80	< 800	3.2	0.25	< + 0.094	< 0.1	30
TZQ5260B	43	< 93	< 900	3	0.25	< + 0.095	< 0.1	33
TZQ5261B	47	< 105	< 1000	2.7	0.25	< + 0.095	< 0.1	36
TZQ5262B	51	< 125	< 1100	2.5	0.25	< + 0.096	< 0.1	39
TZQ5263B	56	< 150	< 1300	2.2	0.25	< + 0.096	< 0.1	43
TZQ5264B	60	< 170	< 1400	2.1	0.25	< + 0.097	< 0.1	46
TZQ5265B	62	< 185	< 1400	2	0.25	< + 0.097	< 0.1	47
TZQ5266B	68	< 230	< 1600	1.8	0.25	< + 0.097	< 0.1	52
TZQ5267B	75	< 270	< 1700	1.7	0.25	< + 0.098	< 0.1	56

¹⁾ Based on dc measurement at thermal equilibrium; case temperature maintained at 30 °C \pm 2 °C.

Typical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

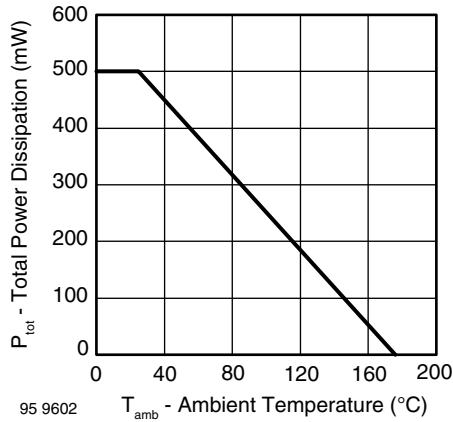


Figure 1. Total Power Dissipation vs. Ambient Temperature

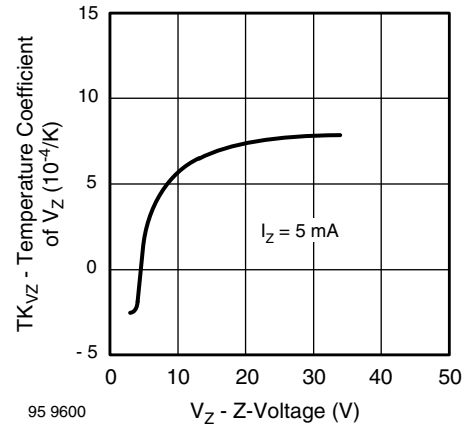


Figure 4. Temperature Coefficient of V_Z vs. Z-Voltage

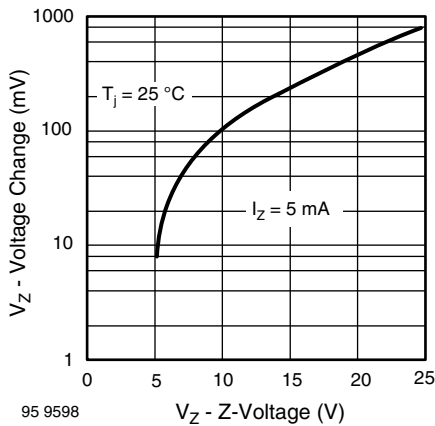


Figure 2. Typical Change of Working Voltage under Operating Conditions at $T_{amb} = 25\text{ }^{\circ}\text{C}$

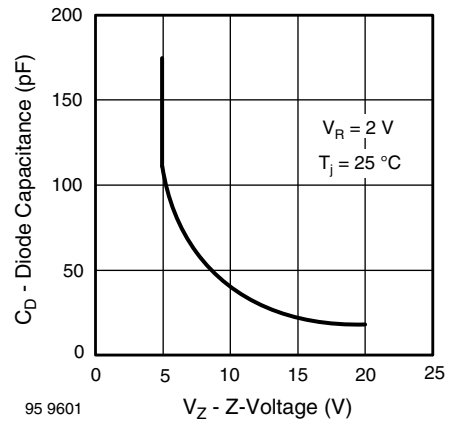


Figure 5. Diode Capacitance vs. Z-Voltage

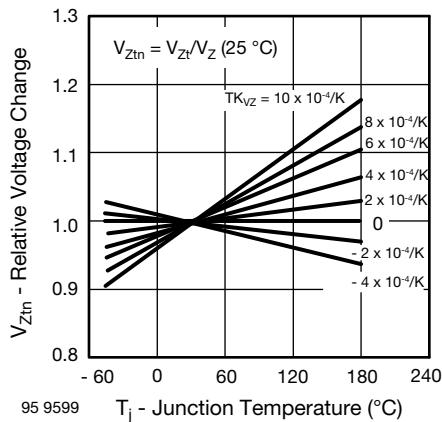


Figure 3. Typical Change of Working Voltage vs. Junction Temperature

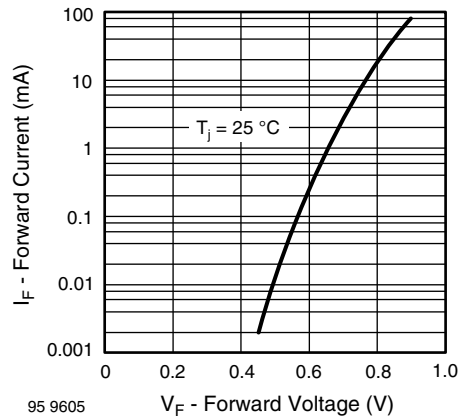


Figure 6. Forward Current vs. Forward Voltage

TZQ5221B to TZQ5267B

Vishay Semiconductors

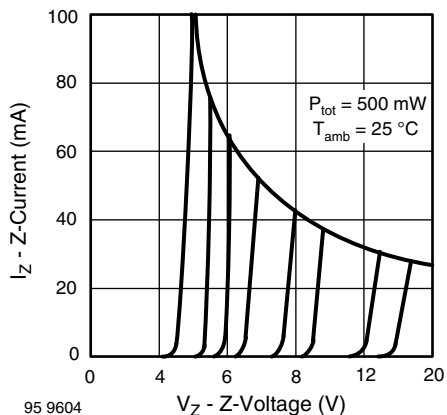


Figure 7. Z-Current vs. Z-Voltage

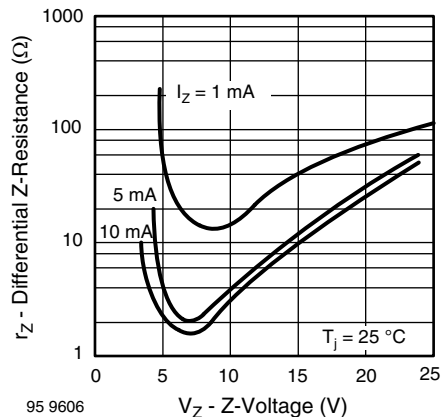


Figure 9. Differential Z-Resistance vs. Z-Voltage

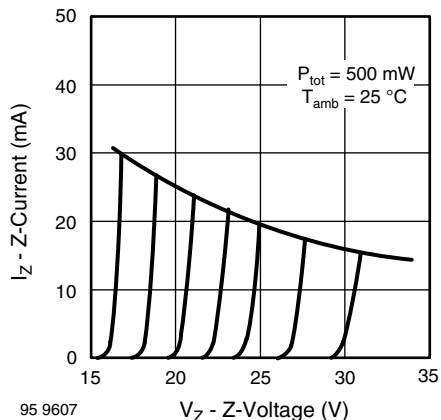


Figure 8. Z-Current vs. Z-Voltage

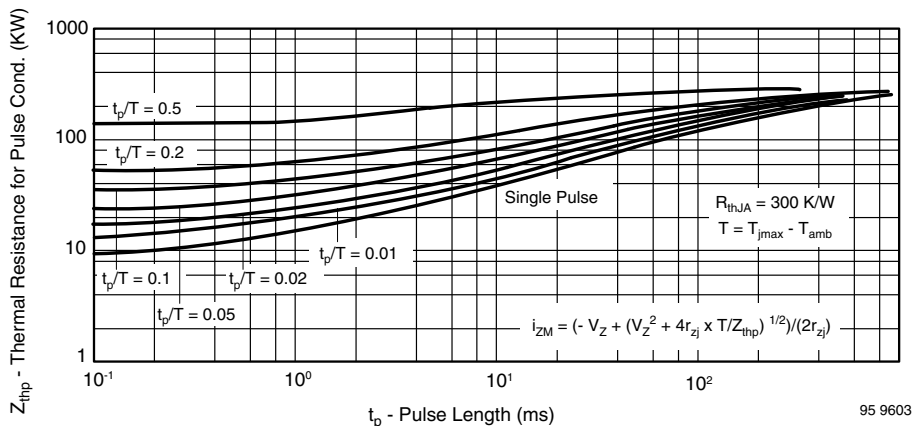
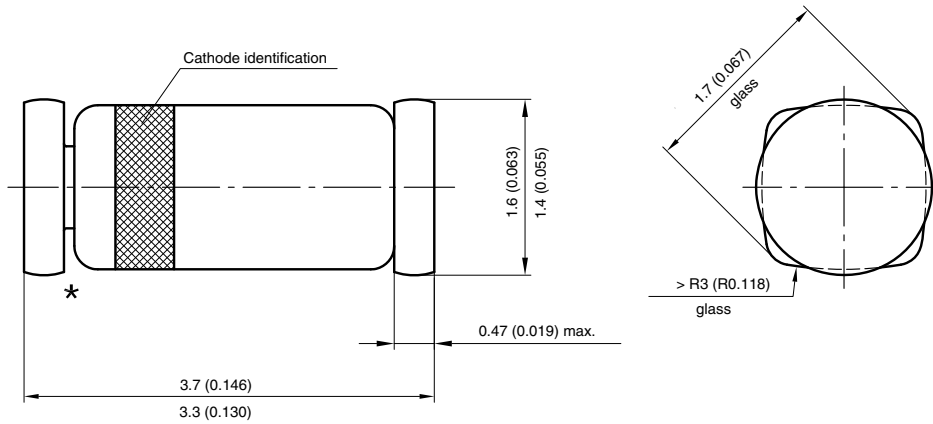
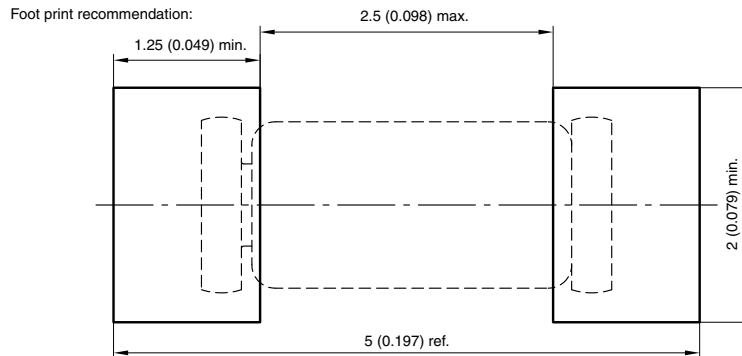


Figure 10. Thermal Response

Package Dimensions in millimeters (inches): QuadroMELF SOD-80



★ The gap between plug and glass can be either on cathode or anode side



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 Rev. 11 - Date: 07.June 2006
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 96 12071



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