



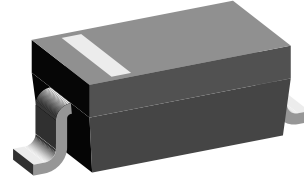
## Small Signal Zener Diodes

### Features

- Silicon planar Zener diodes
- Standard Zener voltage tolerance is  $\pm 5\%$
- High temperature soldering guaranteed:  
260 °C/4 x 10 s set terminals
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC



**RoHS**  
COMPLIANT  
**GREEN**  
(5-2008)\*\*



17431

### Mechanical Data

**Case:** SOD-123

**Weight:** approx. 10.3 mg

#### Packaging codes/options:

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 mm tape), 15K/box

### Absolute Maximum Ratings

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

Parameter	Test conditions	Symbol	Value	Unit
Zener current (see Table "Characteristics")				
Power dissipation	$T_L = 75\text{ °C}$	$P_{tot}$	500 <sup>1)</sup>	mW

#### Note

<sup>1)</sup> On FR - 4 or FR - 5 board with minimum recommended solder pad layout

### Thermal Characteristics

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

Parameter	Test conditions	Symbol	Value	Unit
Thermal resistance junction to ambient air		$R_{thJA}$	340 <sup>1)</sup>	K/W
Maximum junction temperature		$T_j$	150	°C
Storage temperature range		$T_{stg}$	- 55 to + 150	°C

#### Note

<sup>1)</sup> On FR - 4 or FR - 5 board with minimum recommended solder pad layout

\*\* Please see document "Vishay Material Category Policy": [www.vishay.com/doc?99902](http://www.vishay.com/doc?99902)

# MMSZ4681-V-G to MMSZ4717-V-G



Vishay Semiconductors

## Electrical Characteristics

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

Maximum  $V_F = 0.9\text{ V}$  at  $I_F = 10\text{ mA}$

Part number	Marking code	Zener voltage <sup>1)</sup>			Max. reverse current	Test voltage
		$V_Z$ at $I_{ZT} = 50\text{ }\mu\text{A}$			$I_R$	at $V_R$
		V			$\mu\text{A}$	V
		typ.	min.	max.	max.	
MMSZ4681-V-G	TF	2.4	2.28	2.52	2	1
MMSZ4682-V-G	TH	2.7	2.57	2.84	1	1
MMSZ4683-V-G	TJ	3	2.85	3.15	0.8	1
MMSZ4684-V-G	TK	3.3	3.14	3.47	7.5	1.5
MMSZ4685-V-G	TM	3.6	3.42	3.78	7.5	2
MMSZ4686-V-G	TN	3.9	3.71	4.1	5	2
MMSZ4687-V-G	TP	4.3	4.09	4.52	4	2
MMSZ4688-V-G	TT	4.7	4.47	4.94	10	3
MMSZ4689-V-G	TU	5.1	4.85	5.36	10	3
MMSZ4690-V-G	TV	5.6	5.32	5.88	10	4
MMSZ4691-V-G	TA	6.2	5.89	6.51	10	5
MMSZ4692-V-G	TX	6.8	6.46	7.14	10	5.1
MMSZ4693-V-G	TY	7.5	7.13	7.88	10	5.7
MMSZ4694-V-G	TZ	8.2	7.79	8.61	1	6.2
MMSZ4695-V-G	UC	8.7	8.27	9.14	1	6.6
MMSZ4696-V-G	UD	9.1	8.65	9.56	1	6.9
MMSZ4697-V-G	UE	10	9.5	10.5	1	7.6
MMSZ4698-V-G	UF	11	10.5	11.6	0.05	8.4
MMSZ4699-V-G	UH	12	11.4	12.6	0.05	9.1
MMSZ4700-V-G	UJ	13	12.4	13.7	0.05	9.8
MMSZ4701-V-G	UK	14	13.3	14.7	0.05	10.6
MMSZ4702-V-G	UM	15	14.3	15.8	0.05	11.4
MMSZ4703-V-G	UN	16	15.2	16.8	0.05	12.1
MMSZ4704-V-G	UP	17	16.2	17.9	0.05	12.9
MMSZ4705-V-G	UT	18	17.1	18.9	0.05	13.6
MMSZ4706-V-G	UU	19	18.1	20	0.05	14.4
MMSZ4707-V-G	UV	20	19	21	0.01	15.2
MMSZ4708-V-G	UA	22	20.9	23.1	0.01	16.7
MMSZ4709-V-G	UZ	24	22.8	25.2	0.01	18.2
MMSZ4710-V-G	UY	25	23.8	26.3	0.01	19
MMSZ4711-V-G	ZA	27	25.7	28.4	0.01	20.4
MMSZ4712-V-G	ZC	28	26.6	29.4	0.01	21.2
MMSZ4713-V-G	ZD	30	28.5	31.5	0.01	22.8
MMSZ4714-V-G	ZE	33	31.4	34.7	0.01	25
MMSZ4715-V-G	ZF	36	34.2	37.8	0.01	27.3
MMSZ4716-V-G	ZH	39	37.1	41	0.01	29.6
MMSZ4717-V-G	ZJ	43	40.9	45.2	0.01	32.6

**Note**

<sup>1)</sup> Measured with device junction in thermal equilibrium

## Typical Characteristics

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

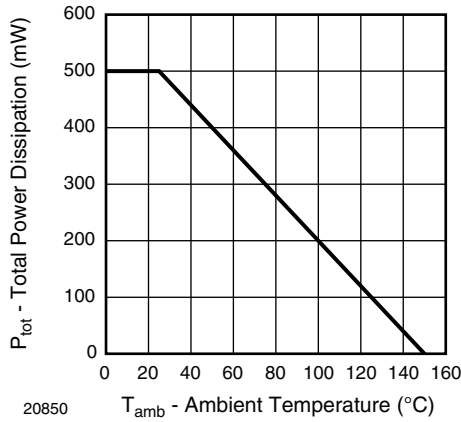


Figure 1. Total Power Dissipation vs. Ambient Temperature

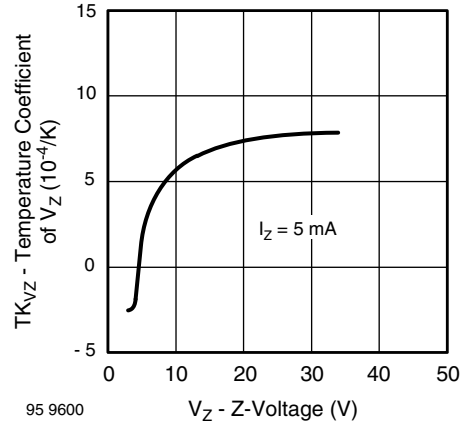


Figure 4. Temperature Coefficient of  $V_Z$  vs. Z-Voltage

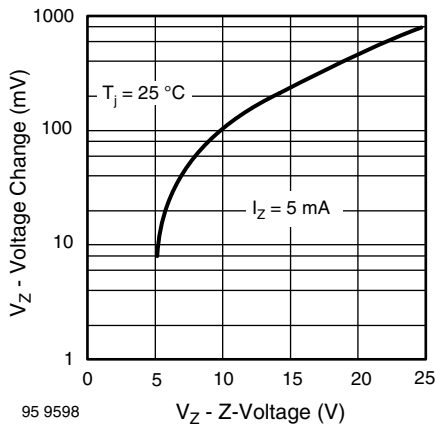


Figure 2. Typical Change of Working Voltage under Operating Conditions at  $T_{amb} = 25\text{ }^{\circ}\text{C}$

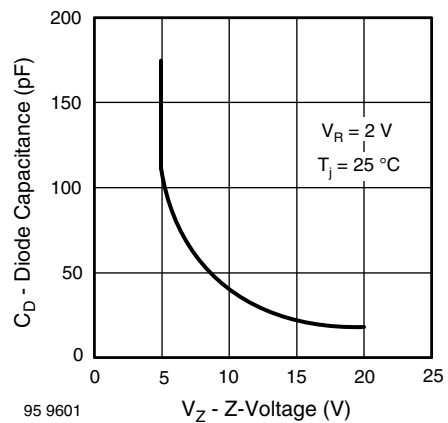


Figure 5. Diode Capacitance vs. Z-Voltage

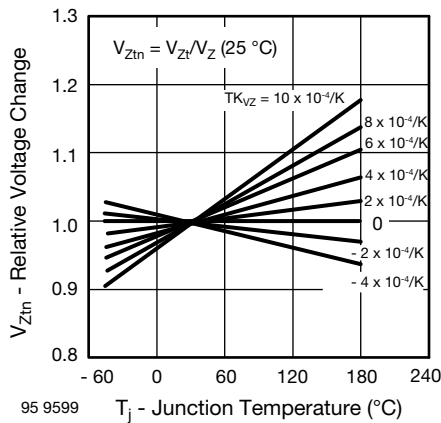


Figure 3. Typical Change of Working Voltage vs. Junction Temperature

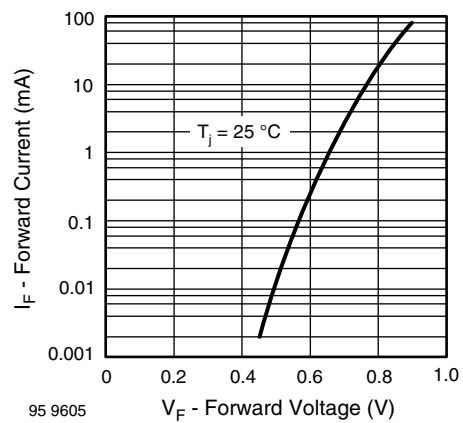


Figure 6. Forward Current vs. Forward Voltage

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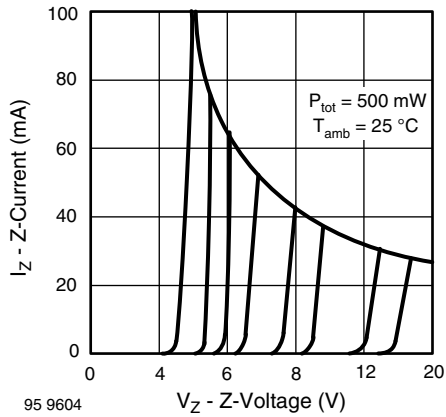


Figure 7. Z-Current vs. Z-Voltage

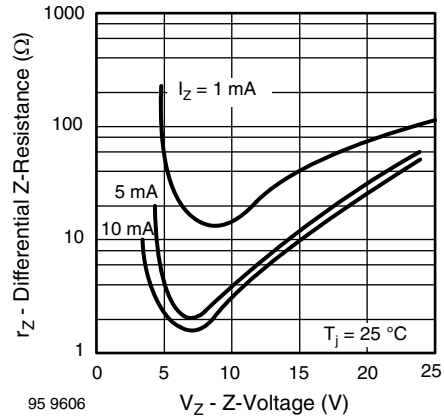


Figure 9. Differential Z-Resistance vs. Z-Voltage

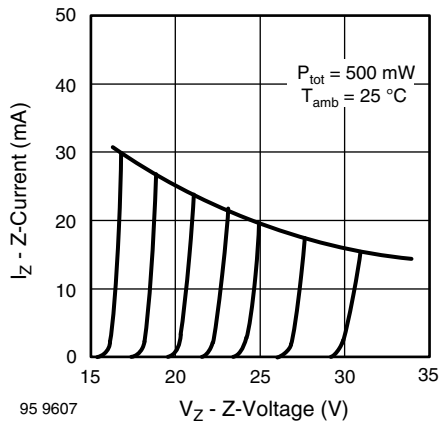


Figure 8. Z-Current vs. Z-Voltage

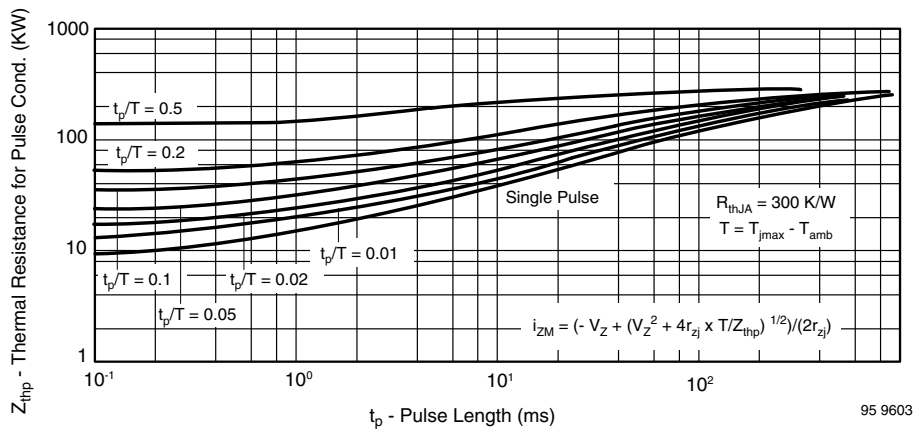


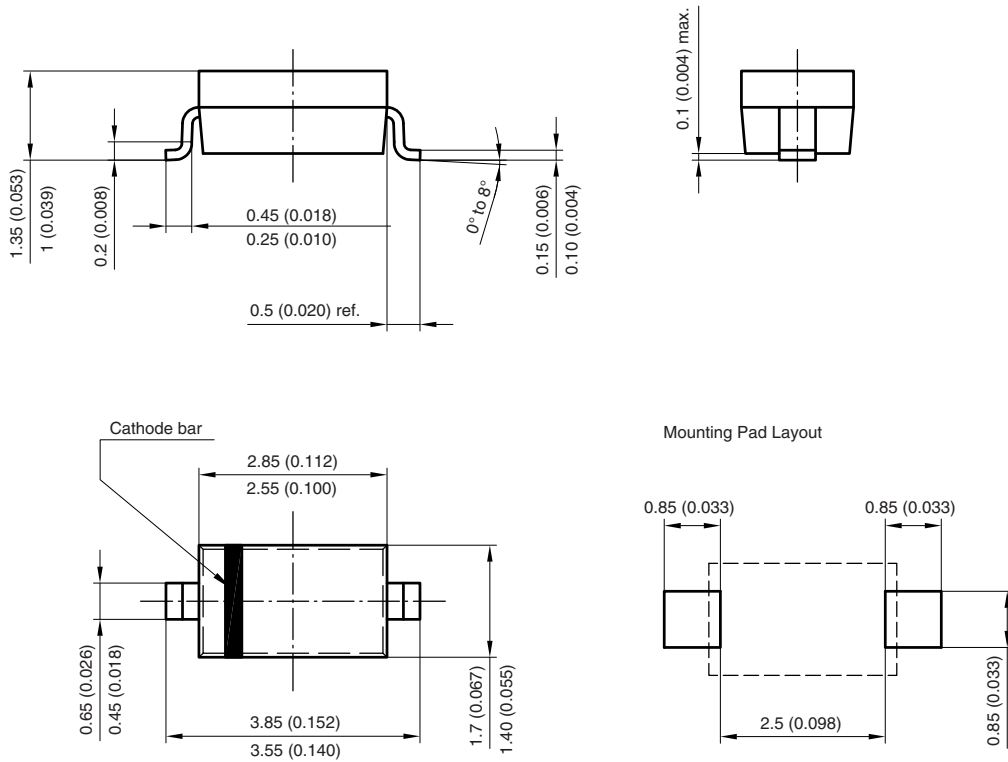
Figure 10. Thermal Response



# MMSZ4681-V-G to MMSZ4717-V-G

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Package Dimensions in millimeters (inches): SOD-123



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