

# TZS4687-GS08 Datasheet

[www.digi-electronics.com](http://www.digi-electronics.com)



DiGi Electronics Part Number	TZS4687-GS08-DG
Manufacturer	<a href="#">Vishay General Semiconductor - Diodes Division</a>
Manufacturer Product Number	TZS4687-GS08
Description	DIODE ZENER 4.3V 500MW SOD80
Detailed Description	Zener Diode 4.3 V 500 mW ±5% Surface Mount SOD-80 QuadroMELF

<https://www.DiGi-Electronics.com>

This model TZS4687-GS08 is available at DiGi Electronics.

DiGi Electronics offers a global database of semiconductor and electronic component datasheets.

We welcome your inquiries regarding pricing, lead time, or other product-related questions.

 [Request a Quote](#)

 [Datasheet Search](#)



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.

## Purchase and inquiry

Manufacturer Product Number:

TZS4687-GS08

Series:

-

Voltage - Zener (Nom) (Vz):

4.3 V

Power - Max:

500 mW

Voltage - Forward (Vf) (Max) @ If:

1.5 V @ 100 mA

Grade:

Automotive

Mounting Type:

Surface Mount

Supplier Device Package:

SOD-80 QuadroMELF

Manufacturer:

Vishay General Semiconductor - Diodes Division

Product Status:

Active

Tolerance:

±5%

Current - Reverse Leakage @ Vr:

4 µA @ 2 V

Operating Temperature:

-65°C ~ 175°C

Qualification:

AEC-Q101

Package / Case:

SOD-80 Variant

Base Product Number:

TZS4687

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.10.0050

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99


[www.vishay.com](http://www.vishay.com)
**TZS4678 to TZS4717**

Vishay Semiconductors

## Small Signal Zener Diodes



### FEATURES

- Zener voltage specified at 50  $\mu$ A
- Maximum delta  $V_Z$  given from 10  $\mu$ A to 100  $\mu$ A
- Very high stability
- Low noise
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### DESIGN SUPPORT TOOLS

[click logo to get started](#)
**3D**  
Models  
Available

### APPLICATIONS

- Voltage stabilization

### PRIMARY CHARACTERISTICS

PARAMETER	VALUE	UNIT
$V_Z$ range nom.	1.8 to 43	V
Test current $I_{ZT}$	0.05	mA
$V_Z$ specification	Pulse current	
Circuit configuration	Single	

### ORDERING INFORMATION

DEVICE NAME	ORDERING CODE	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
TZS4678 to TZS4717	TZS4678-GS08 to TZS4717-GS08	2500 (per 7" reel)	12 500/box

### PACKAGE

PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
QuadroMELF (SOD-80)	34 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ °C}$ , unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Power dissipation	$R_{thJA} \leq 300\text{ K/W}$	$P_{tot}$	500	mW
Zener current		$I_Z$	$P_{tot}/V_Z$	mA
Junction to ambient air	On PC board 50 mm x 50 mm x 1.6 mm	$R_{thJA}$	500	K/W
Junction temperature		$T_j$	175	°C
Storage temperature range		$T_{stg}$	-65 to +175	°C
Forward voltage (max.)	$I_F = 100\text{ mA}$	$V_F$	1.5	V



ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)								
PART NUMBER	ZENER VOLTAGE RANGE			TEST CURRENT		REVERSE CURRENT <sup>(3)</sup>		VOLTAGE CHANGE <sup>(4)</sup>
	$V_Z$ at $I_{ZT1}$			$I_{ZT1}$	$I_{ZT2}$ <sup>(2)</sup>	$I_R$ at $V_R$		$\Delta V_Z$
	V			mA		$\mu\text{A}$	V	V
	MIN.	NOM. <sup>(1)</sup>	MAX.			MAX.		MAX.
TZS4678	1.71	1.8	1.89	0.05	120	7.5	1	0.7
TZS4679	1.9	2	2.1	0.05	110	5	1	0.7
TZS4680	2.09	2.2	2.31	0.05	100	4	1	0.75
TZS4681	2.28	2.4	2.52	0.05	95	2	1	0.8
TZS4682	2.565	2.7	2.835	0.05	90	1	1	0.85
TZS4683	2.85	3	3.15	0.05	85	0.8	1	0.9
TZS4684	3.135	3.3	3.465	0.05	80	7.5	1.5	0.95
TZS4685	3.42	3.6	3.78	0.05	75	7.5	2	0.95
TZS4686	3.705	3.9	4.095	0.05	70	5	2	0.97
TZS4687	4.085	4.3	4.515	0.05	65	4	2	0.99
TZS4688	4.465	4.7	4.935	0.05	60	10	3	0.99
TZS4689	4.845	5.1	5.355	0.05	55	10	3	0.97
TZS4690	5.32	5.6	5.88	0.05	50	10	4	0.96
TZS4691	5.89	6.2	6.51	0.05	45	10	5	0.95
TZS4692	6.46	6.8	7.14	0.05	35	10	5.1	0.9
TZS4693	7.125	7.5	7.875	0.05	31.8	10	5.7	0.75
TZS4694	7.79	8.2	8.61	0.05	29	1	6.2	0.5
TZS4695	8.265	8.7	9.135	0.05	27.4	1	6.6	0.1
TZS4696	8.645	9.1	9.555	0.05	26.2	1	6.9	0.08
TZS4697	9.5	10	10.5	0.05	24.8	1	7.6	0.1
TZS4698	10.45	11	11.55	0.05	21.6	0.05	8.4	0.11
TZS4699	11.4	12	12.6	0.05	20.4	0.05	9.1	0.12
TZS4700	12.35	13	13.65	0.05	19	0.05	9.8	0.13
TZS4701	13.3	14	14.7	0.05	17.5	0.05	10.6	0.14
TZS4702	14.25	15	15.75	0.05	16.3	0.05	11.4	0.15
TZS4703	15.2	16	16.8	0.05	15.4	0.05	12.1	0.16
TZS4704	16.15	17	17.85	0.05	14.5	0.05	12.9	0.17
TZS4705	17.1	18	18.9	0.05	13.2	0.05	13.6	0.18
TZS4706	18.05	19	19.95	0.05	12.5	0.05	14.4	0.19
TZS4707	19	20	21	0.05	11.9	0.01	15.2	0.2
TZS4708	20.9	22	23.1	0.05	10.8	0.01	16.7	0.22
TZS4709	22.8	24	25.2	0.05	9.9	0.01	18.2	0.24
TZS4710	23.75	25	26.25	0.05	9.5	0.01	19	0.25
TZS4711	25.65	27	28.35	0.05	8.8	0.01	20.4	0.27
TZS4712	26.6	28	29.4	0.05	8.5	0.01	21.2	0.28
TZS4713	28.5	30	31.5	0.05	7.9	0.01	22.8	0.3
TZS4714	31.35	33	34.65	0.05	7.2	0.01	25	0.33
TZS4715	34.2	36	37.8	0.05	6.6	0.01	27.3	0.36
TZS4716	37.05	39	40.95	0.05	6.1	0.01	29.6	0.39
TZS4717	40.85	43	45.15	0.05	5.5	0.01	32.6	0.43

**Notes**

- (1) Tolerancing and voltage designation ( $V_Z$ ). The type numbers shown have a standard tolerance of  $\pm 5\%$  on the nominal zener voltage.
- (2) Maximum Zener current ratings ( $I_{ZM}$ ). Maximum Zener current ratings are based on maximum Zener voltage of the individual units
- (3) Reverse leakage current ( $I_R$ ). Reverse leakage currents are guaranteed and measured at  $V_R$  as shown on the table.
- (4) Maximum voltage change ( $\Delta V_Z$ ). Voltage change is equal to the difference between  $V_Z$  at 100  $\mu\text{A}$  and  $V_Z$  at 10  $\mu\text{A}$ .



**BASIC CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

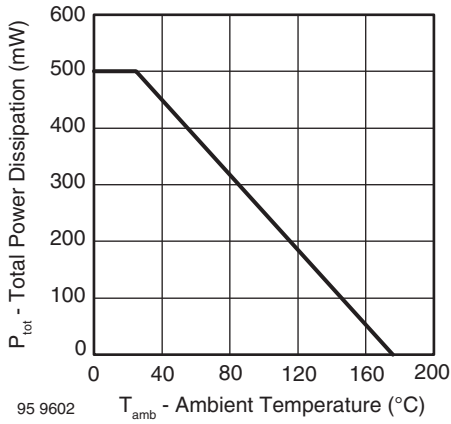


Fig. 1 - Total Power Dissipation vs. Ambient Temperature

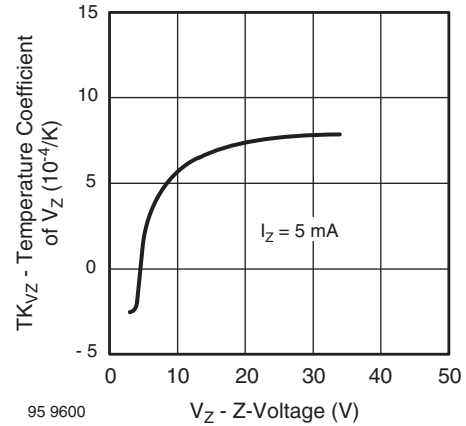


Fig. 4 - Temperature Coefficient of  $V_Z$  vs. Z-Voltage

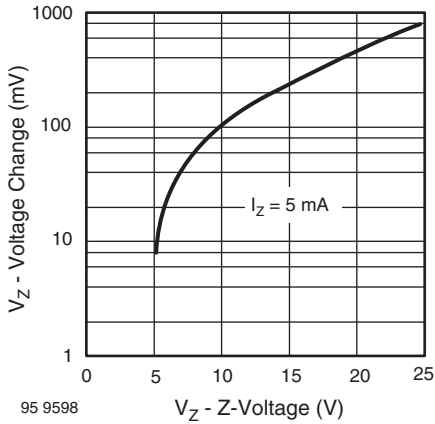


Fig. 2 - Typical Change of Working Voltage under Operating Conditions at  $T_{amb} = 25\text{ }^{\circ}\text{C}$

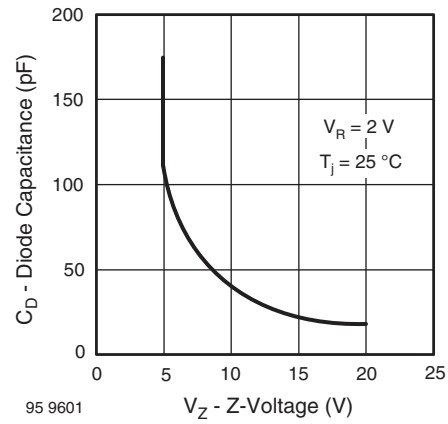


Fig. 5 - Diode Capacitance vs. Z-Voltage

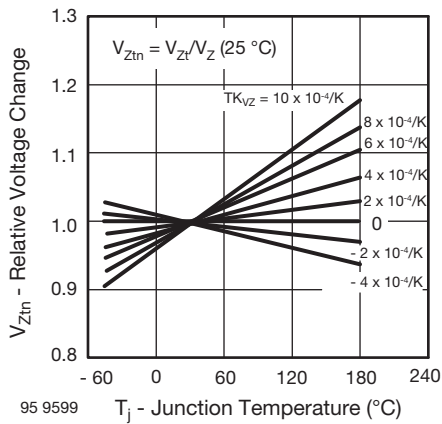


Fig. 3 - Typical Change of Working Voltage vs. Junction Temperature

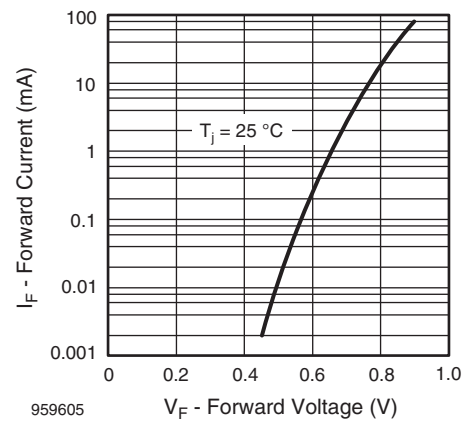


Fig. 6 - Forward Current vs. Forward Voltage

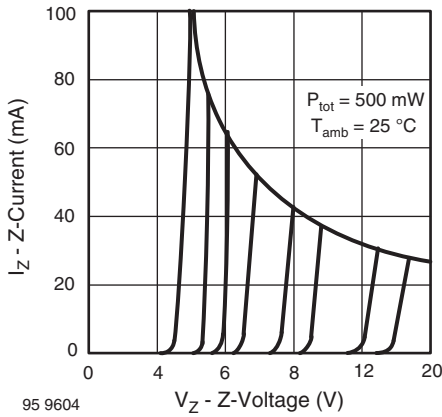


Fig. 7 - Z-Current vs. Z-Voltage

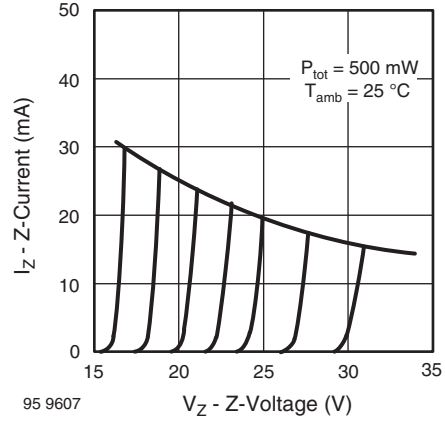


Fig. 8 - Z-Current vs. Z-Voltage

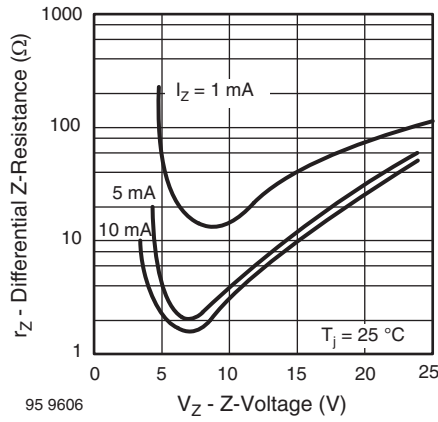


Fig. 9 - Differential Z-Resistance vs. Z-Voltage

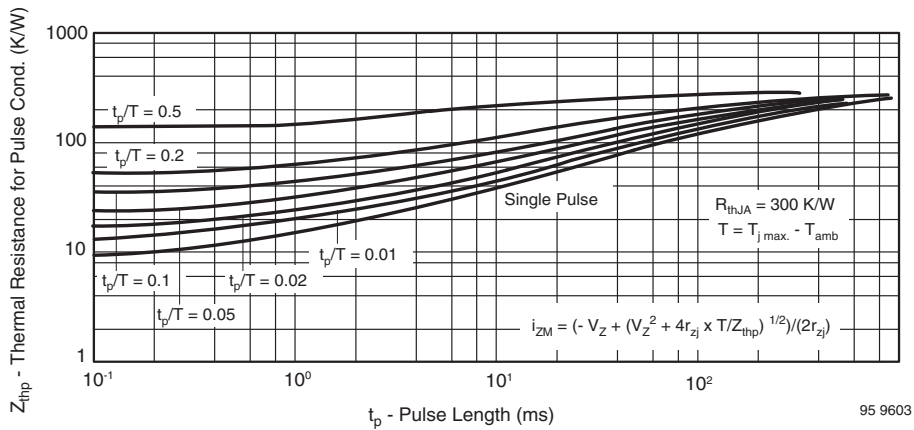


Fig. 10 - Thermal Response

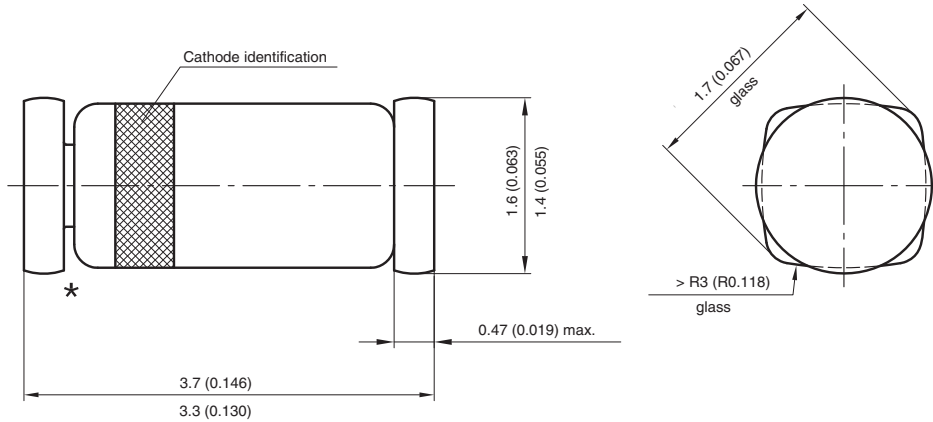


www.vishay.com

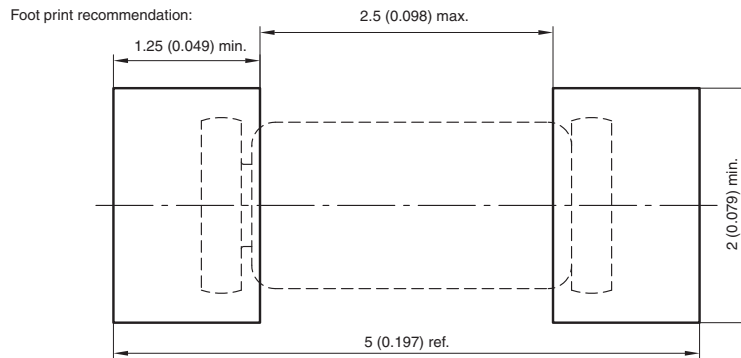
# TZS4678 to TZS4717

Vishay Semiconductors

## PACKAGE DIMENSIONS in millimeters (inches): **QuadroMELF SOD-80**



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



Created - Date: 03.November.2003  
 Rev. 11 - Date: 07.June 2006  
 Document no.:6.560-5006.01-4  
 96 12071



## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

## OUR CERTIFICATE

DiGi provide top-quality products and perfect service for customer worldwide through standardization, technological innovation and continuous improvement. DiGi through third-party certification, we strictly control the quality of products and services. Welcome your RFQ to

Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.