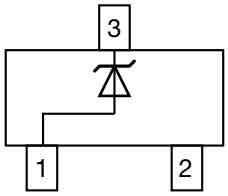
Small Signal Zener Diodes





FEATURES

- Silicon planar Zener diodes
- Standard Zener voltage tolerance is ± 5 %. Other tolerances are available upon request
- These diodes are also available in DO-35 case with the type designation 1N4681 to 1N4717 and SOD-123 case with the type designation MMSZ4681-V to MMSZ4717-V
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

Pb-free

e3

RoHS COMPLIANT

PRIMARY CHARACTERISTICS		
PARAMETER	VALUE	UNIT
V_Z range nom.	2.4 to 43	V
Test current I_{ZT}	0.05	mA
V_Z specification	Pulse current	
Int. construction	Single	

ORDERING INFORMATION			
DEVICE NAME	ORDERING CODE	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
MMBZ4681-V to MMBZ4717-V	MMBZ4681-V to MMBZ4717-V-series-GS18	10 000 (8 mm tape on 13" reel)	10 000/box
MMBZ4681-V to MMBZ4717-V	MMBZ4817-V to MMBZ4717-V-series-GS08	3000 (8 mm tape on 7" reel)	15 000/box

PACKAGE				
PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
SOT-23	8.8 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Power dissipation	On FR - 5 board using recommended solder pad layout	P_{tot}	350	mW
Zener current	See table “Characteristics”			
Junction to ambient air	On FR - 5 board using recommended solder pad layout	R_{thJA}	420	K/W
Junction temperature, maximum		T_j	150	°C
Storage temperature range		T_{stg}	- 55 to + 150	°C

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ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

PART NUMBER	MARKING CODE	ZENER VOLTAGE RANGE (1)			TEST CURRENT	REVERSE CURRENT		VOLTAGE CHANGE (2)
		V_Z at I_{ZT1}			I_{ZT1}	I_R at V_R		ΔV_Z
		V			mA	µA	V	V
		MIN.	NOM.	MAX.		MAX.		MAX.
MMBZ4681-V	CF	2.28	2.4	2.52	0.05	2	1	0.8
MMBZ4682-V	CH	2.57	2.7	2.84	0.05	1	1	0.85
MMBZ4683-V	CJ	2.85	3	3.15	0.05	0.8	1	0.9
MMBZ4684-V	CK	3.14	3.3	3.47	0.05	7.5	1.5	0.95
MMBZ4685-V	CM	3.42	3.6	3.78	0.05	7.5	2	0.95
MMBZ4686-V	CN	3.71	3.9	4.1	0.05	5	2	0.97
MMBZ4687-V	CP	4.09	4.3	4.52	0.05	4	2	0.99
MMBZ4688-V	CT	4.47	4.7	4.94	0.05	10	3	0.99
MMBZ4689-V	CU	4.85	5.1	5.36	0.05	10	3	0.97
MMBZ4690-V	CV	5.32	5.6	5.88	0.05	10	4	0.96
MMBZ4691-V	CA	5.89	6.2	6.51	0.05	10	5	0.95
MMBZ4692-V	CX	6.46	6.8	7.14	0.05	10	5.1	0.9
MMBZ4693-V	CY	7.13	7.5	7.88	0.05	10	5.7	0.75
MMBZ4694-V	CZ	7.79	8.2	8.61	0.05	1	6.2	0.5
MMBZ4695-V	DC	8.27	8.7	9.14	0.05	1	6.6	0.1
MMBZ4696-V	DD	8.65	9.1	9.56	0.05	1	6.9	0.08
MMBZ4697-V	DE	9.5	10	10.5	0.05	1	7.6	0.1
MMBZ4698-V	DF	10.5	11	11.6	0.05	0.05	8.4	0.11
MMBZ4699-V	DH	11.4	12	12.6	0.05	0.05	9.1	0.12
MMBZ4700-V	DJ	12.4	13	13.7	0.05	0.05	9.8	0.13
MMBZ4701-V	DK	13.3	14	14.7	0.05	0.05	10.6	0.14
MMBZ4702-V	DM	14.3	15	15.8	0.05	0.05	11.4	0.15
MMBZ4703-V	DN	15.2	16	16.8	0.05	0.05	12.1	0.16
MMBZ4704-V	DP	16.2	17	17.9	0.05	0.05	12.9	0.17
MMBZ4705-V	DT	17.1	18	18.9	0.05	0.05	13.6	0.18
MMBZ4706-V	DU	18.1	19	20	0.05	0.05	14.4	0.19
MMBZ4707-V	DV	19	20	21	0.05	0.01	15.2	0.2
MMBZ4708-V	DA	20.9	22	23.1	0.05	0.01	16.7	0.22
MMBZ4709-V	DZ	22.8	24	25.2	0.05	0.01	18.2	0.24
MMBZ4710-V	DY	23.8	25	26.3	0.05	0.01	19	0.25
MMBZ4711-V	EA	25.7	27	28.4	0.05	0.01	20.4	0.27
MMBZ4712-V	EC	26.6	28	29.4	0.05	0.01	21.2	0.28
MMBZ4713-V	ED	28.5	30	31.5	0.05	0.01	22.8	0.3
MMBZ4714-V	EE	31.4	33	34.7	0.05	0.01	25	0.33
MMBZ4715-V	EF	34.2	36	3.7.8	0.05	0.01	27.3	0.36
MMBZ4716-V	EH	37.1	39	41	0.05	0.01	29.6	0.39
MMBZ4717-V	EJ	40.9	43	45.2	0.05	0.01	32.6	0.43

Notes

- Maximum V_F = 0.9 V, at I_F = 10 mA

(1) Tested with pulse test current

(2) Maximum voltage change (V_Z). Voltage change is equal to the difference between V_Z at 100 µA and V_Z at 10 µA.

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BASIC CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

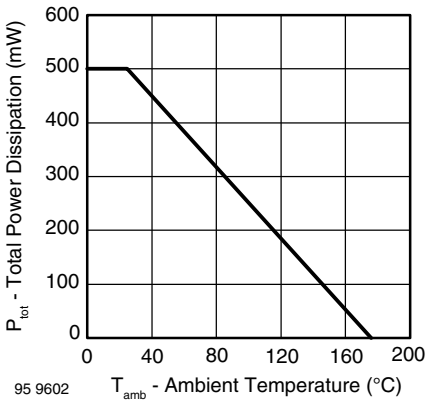


Fig. 1 - Total Power Dissipation vs. Ambient Temperature

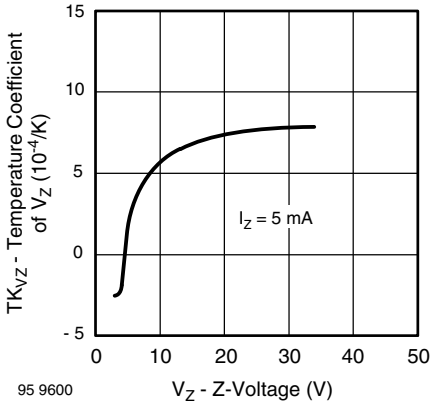


Fig. 4 - Temperature Coefficient of V_Z vs. Z-Voltage

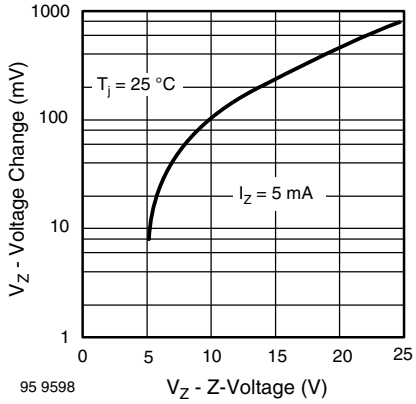


Fig. 2 - Typical Change of Working Voltage under Operating Conditions at T_{amb} = 25 °C

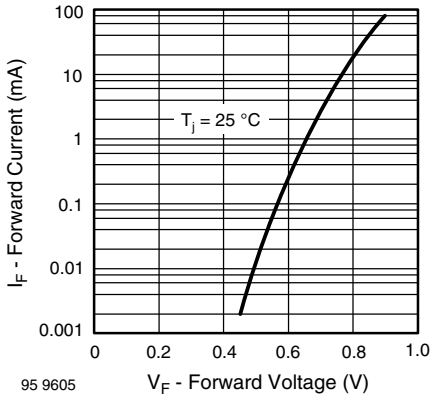


Fig. 5 - Forward Current vs. Forward Voltage

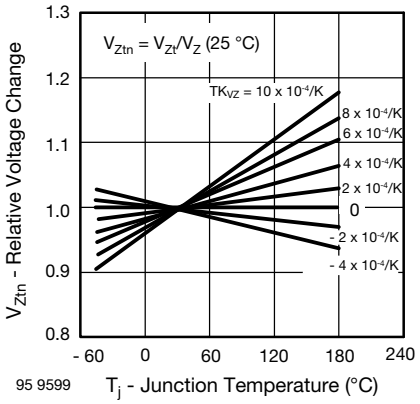


Fig. 3 - Typical Change of Working Voltage vs. Junction Temperature

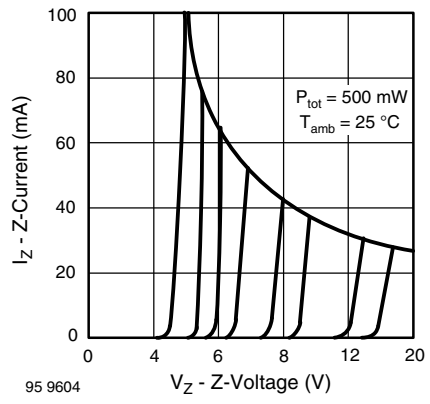


Fig. 6 - Z-Current vs. Z-Voltage

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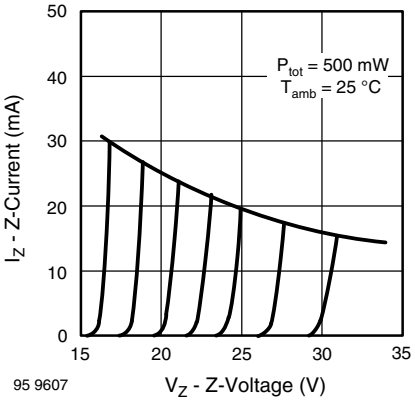


Fig. 7 - Z-Current vs. Z-Voltage

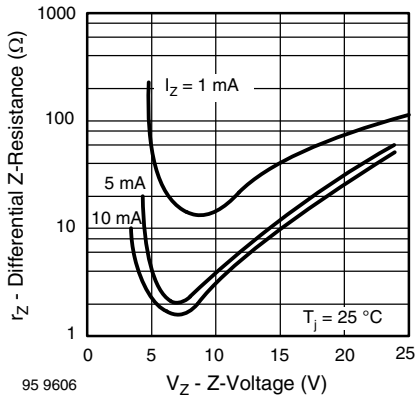
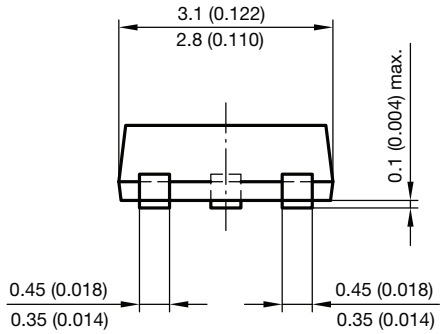
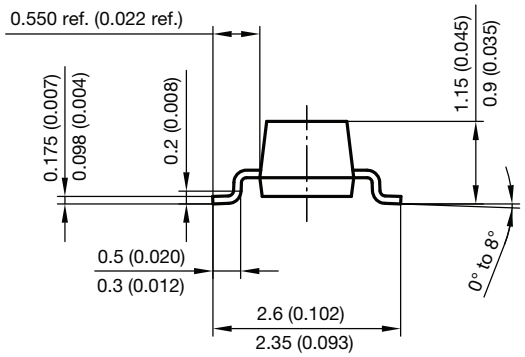
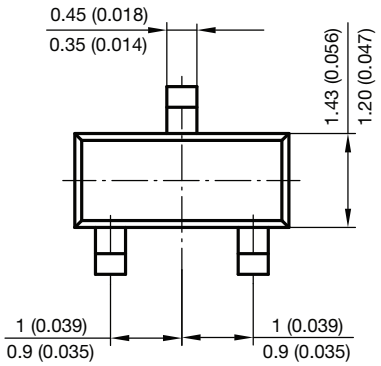


Fig. 8 - Differential Z-Resistance vs. Z-Voltage

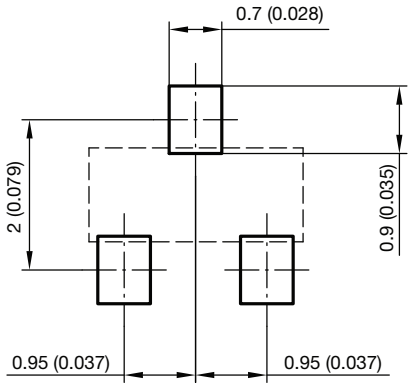
PACKAGE DIMENSIONS in millimeters (inches): **SOT-23**







Foot print recommendation:



Document no.: 6.541-5014.01-4
Rev. 8 - Date: 23.Sept.2009
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