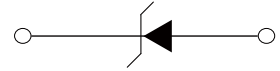


FEATURES

- | Low Zener Impedance
- | Power Dissipation of 200mW
- | High Stability and High Reliability



SOD-323



Schematic Symbol

MECHANICAL DATA

- | SOD-323 Small Outline Plastic Package
- | Color band denotes cathode end
- | Epoxy UL: 94V-0
- | Mounting Position: Any

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Forward Voltage @ $I_F=10\text{mA}$	V_F	0.9 ¹⁾	V
Power Dissipation	P_D	200 ²⁾	mW
Storage temperature range	T_{STG}	-65 to +150	°C

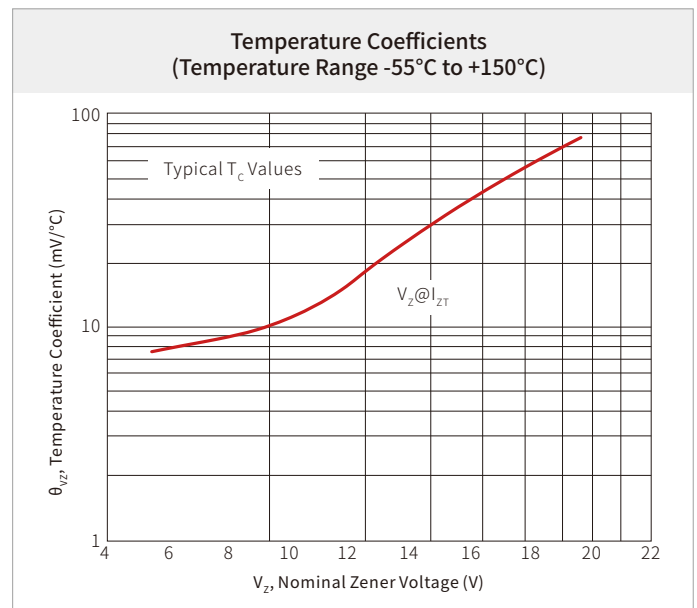
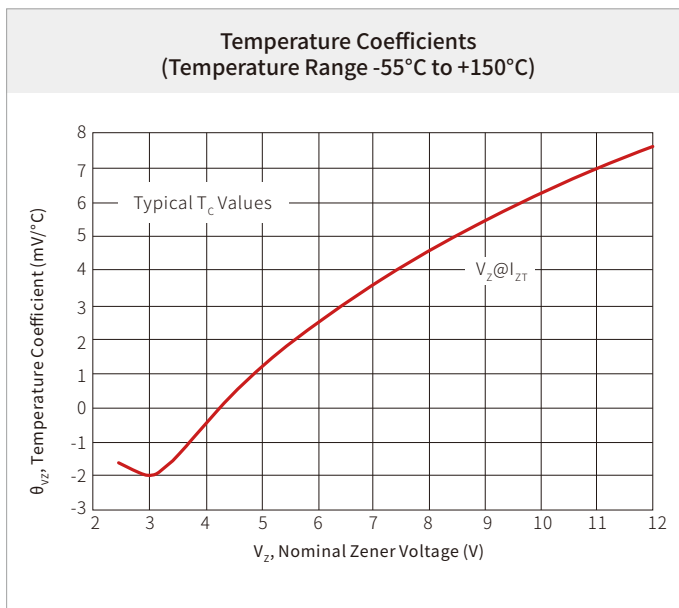
Notes: 1. Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm².
 2. Short duration test pulse used to minimize self-heating effect.

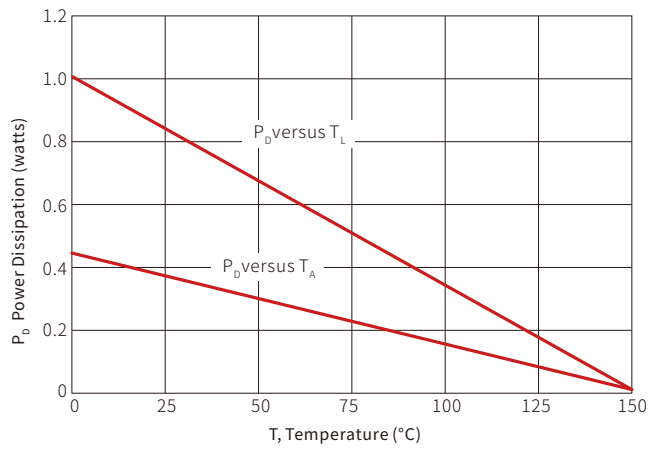
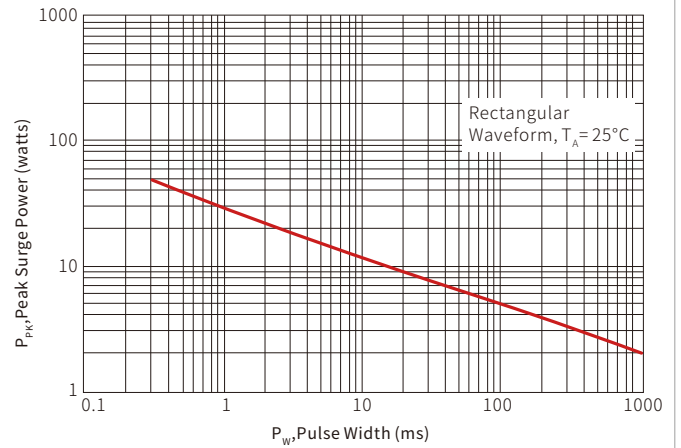
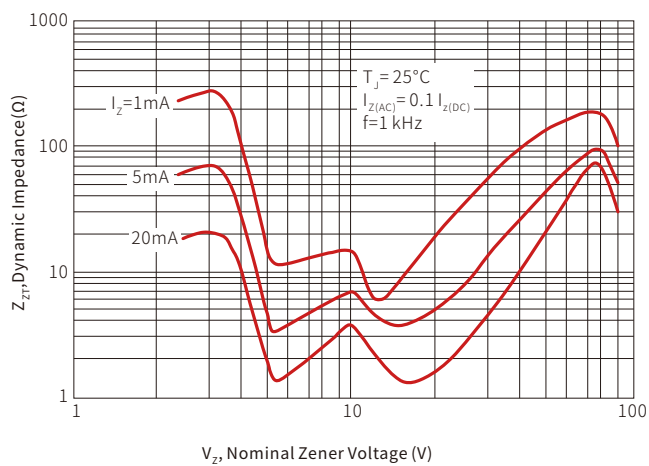
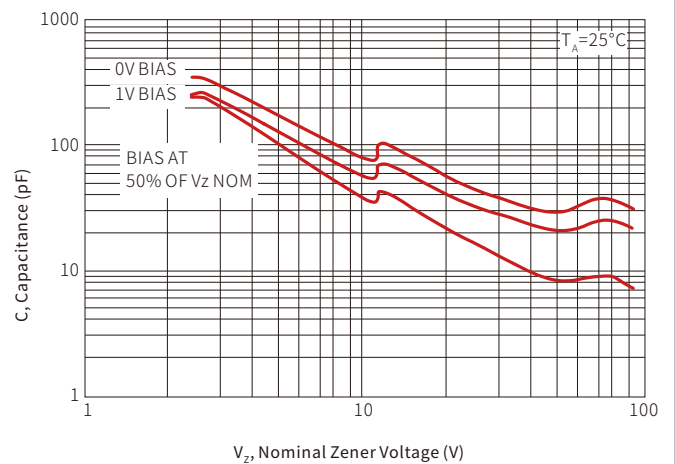
ELECTRICAL CHARACTERISTICS

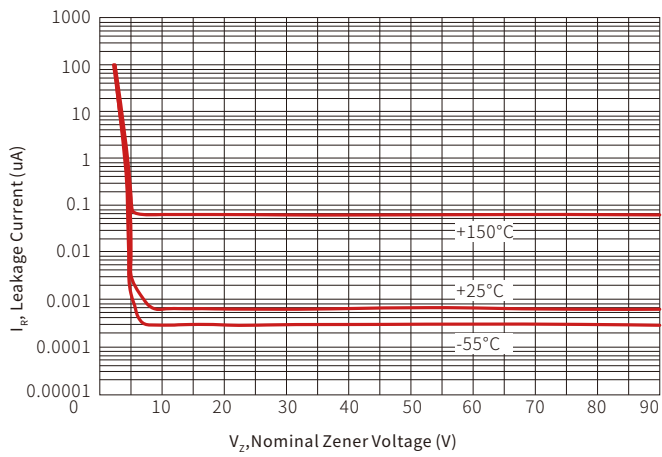
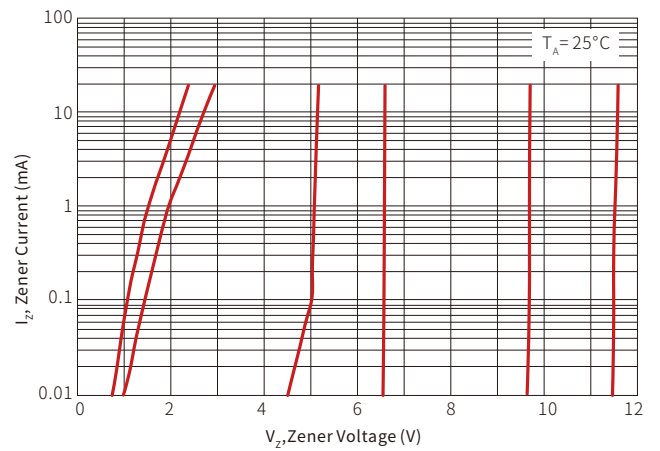
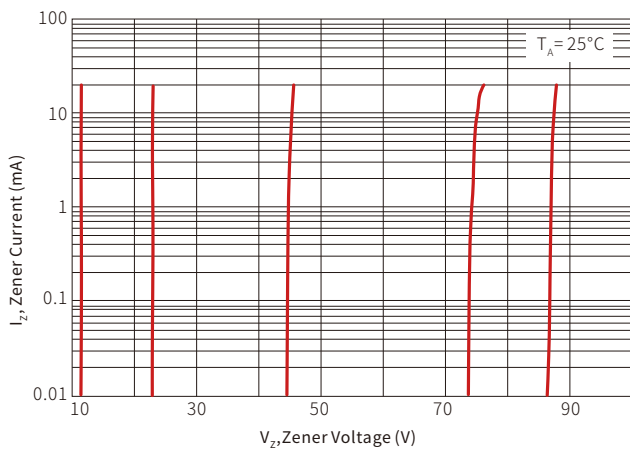
Part Number	Device Marking Code	Zener Voltage Range				Maximum Reverse Current	
		$V_Z @ I_{ZT}$			I_{ZT}	I_R	V_R
		Min.(V)	Nom.(V)	Max.(V)	uA	uA	V
MMSZ4678S	CC	1.71	1.8	1.89	50	7.5	1
MMSZ4679S	CD	1.90	2.0	2.10	50	5	1
MMSZ4680S	CE	2.09	2.2	2.31	50	4	1
MMSZ4681S	CF	2.28	2.4	2.52	50	2	1
MMSZ4682S	CH	2.57	2.7	2.84	50	1	1
MMSZ4683S	CJ	2.85	3.0	3.15	50	0.8	1
MMSZ4684S	CK	3.13	3.3	3.47	50	7.5	1.5
MMSZ4685S	CM	3.42	3.6	3.78	50	7.5	2
MMSZ4686S	CN	3.70	3.9	4.10	50	5	2
MMSZ4687S	CP	4.09	4.3	4.52	50	4	2
MMSZ4688S	CT	4.47	4.7	4.94	50	10	3
MMSZ4689S	CU	4.85	5.1	5.36	50	10	3
MMSZ4690S	CV	5.32	5.6	5.88	50	10	4
MMSZ4691S	CA	5.89	6.2	6.51	50	10	5
MMSZ4692S	CX	6.46	6.8	7.14	50	10	5.1
MMSZ4693S	CY	7.13	7.5	7.88	50	10	5.7
MMSZ4694S	CZ	7.79	8.2	8.61	50	1	6.2
MMSZ4695S	DC	8.27	8.7	9.14	50	1	6.6
MMSZ4696S	DD	8.65	9.1	9.56	50	1	6.9
MMSZ4697S	DE	9.50	10.0	10.50	50	1	7.6
MMSZ4698S	DF	10.45	11.0	11.55	50	0.05	8.4
MMSZ4699S	DH	11.40	12.0	12.60	50	0.05	9.1
MMSZ4700S	DJ	12.35	13.0	13.65	50	0.05	9.8
MMSZ4701S	DK	13.30	14.0	14.70	50	0.05	10.6
MMSZ4702S	DM	14.25	15.0	15.75	50	0.05	11.4
MMSZ4703S	DN	15.20	16.0	16.80	50	0.05	12.1
MMSZ4704S	DP	16.15	17.0	17.85	50	0.05	12.9
MMSZ4705S	DT	17.10	18.0	18.90	50	0.05	13.6
MMSZ4706S	DU	18.05	19.0	19.95	50	0.05	14.4
MMSZ4707S	DV	19.00	20.00	21.00	50	0.01	15.2
MMSZ4708S	DA	20.90	22.0	23.10	50	0.01	16.7

Part Number	Device Marking Code	Zener Voltage Range				Maximum Reverse Current	
		$V_Z@I_{ZT}$			I_{ZT}	I_R	V_R
		Min.(V)	Nom.(V)	Max.(V)	μA	μA	V
MMSZ4709S	DX	22.80	24.0	25.20	50	0.01	18.2
MMSZ4710S	DY	23.75	25.0	26.25	50	0.01	19
MMSZ4711S	EA	25.65	27.0	28.35	50	0.01	20.4
MMSZ4712S	EC	26.60	28.0	29.40	50	0.01	21.2
MMSZ4713S	ED	28.50	30.0	31.50	50	0.01	22.8
MMSZ4714S	EE	31.35	33.0	34.65	50	0.01	25
MMSZ4715S	EF	34.20	36.0	37.80	50	0.01	27.3
MMSZ4716S	EH	37.05	39.0	40.95	50	0.01	29.6
MMSZ4717S	EJ	40.85	43.0	45.15	50	0.01	32.6

CHARACTERISTIC CURVES

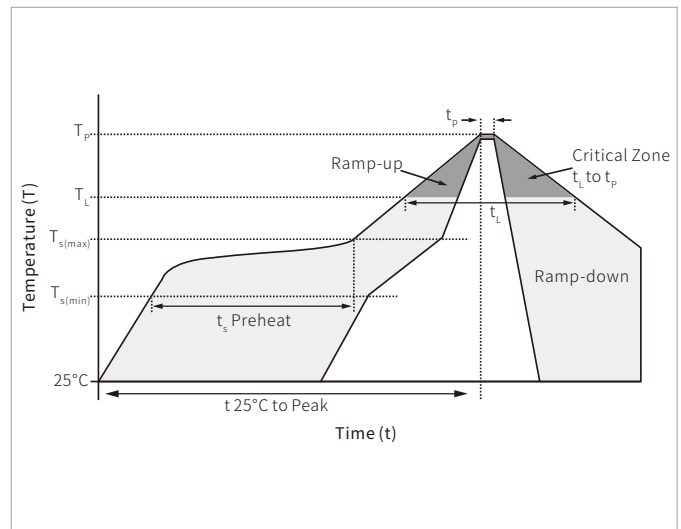


Steady State Power Derating

Maximum Nonrepetitive Surge Power

Effect of Zener Voltage on Zener Impedance

Typical Capacitance


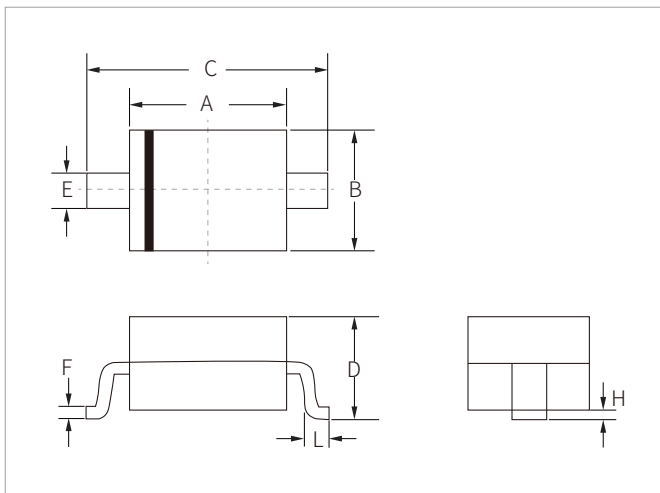
Typical Leakage Current

**Zener Voltage versus Zener Current
(V_Z Up to 12 V)**

**Zener Voltage versus Zener Current
(12V to 91 V)**


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

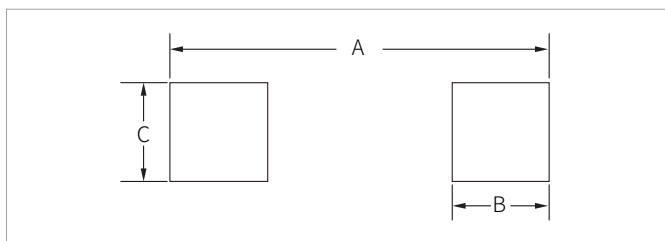


SOD-323 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.60	1.90	0.063	0.075
B	1.15	1.45	0.045	0.057
C	2.35	2.75	0.093	0.108
D	0.80	1.10	0.031	0.043
E	0.25	0.40	0.010	0.016
F	0.10	0.20	0.004	0.008
H	-	0.10	-	0.004
L	0.20	0.40	0.008	0.016

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.87	3.12	0.113	0.123
B	0.66	0.91	0.026	0.036
C	0.66	0.91	0.026	0.036

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
MMSZ4xxxS	SOD-323	3000PCS	7"

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By QR Code

Website



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