

SZMM5Zx-Q1 Zener Voltage Regulator Diode in SOD-523

1 Features

- Low I/O capacitance
 - 75pF (max)
- Low leakage current
 - <500nA (max)
- AEC-Q101 qualified
- Temperature range: –55°C to +150°C
- Leaded package used for automatic optical inspection (AOI)

2 Applications

- Voltage regulation
- Over-voltage protection

3 Description

The SZMM5Zx-Q1 is a single channel Zener diode in a SOD-523 package.

Package Information

PART NUMBER	PACKAGE ⁽¹⁾	PACKAGE SIZE ⁽²⁾
SZMM5Zx-Q1	DYA (SOD-523, 2)	1.60mm × 0.80mm

- (1) For more information, see [Section 9](#).
- (2) The package size (length × width) is a nominal value and includes pins, where applicable.

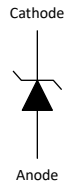


Figure 3-1. Functional Block Diagram



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ADVANCE INFORMATION

4 Pin Configuration and Functions

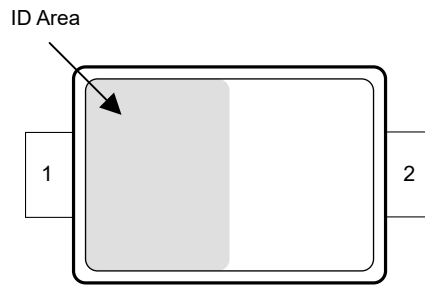


Figure 4-1. DYA Package, 2-Pin SOD-523 (Top View)

Table 4-1. Pin Functions

PIN		DESCRIPTION
NAME	NO.	
C	1	Cathode
A	2	Anode

5 Specifications

5.1 Absolute Maximum Ratings

over operating free-air temperature range (unless otherwise noted) ⁽¹⁾

		MIN	MAX	UNIT
T _A	Ambient Operating Temperature	-55	150	°C
T _{stg}	Storage Temperature	-65	155	°C

- (1) Operation outside the Absolute Maximum Ratings may cause permanent device damage. Absolute maximum ratings do not imply functional operation of the device at these or any other conditions beyond those listed under Recommended Operating Conditions. If briefly operating outside the Recommended Operating Conditions but within the Absolute Maximum Ratings, the device may not sustain damage, but it may not be fully functional. Operating the device in this manner may affect device reliability, functionality, performance, and shorten the device lifetime.

5.2 Recommended Operating Conditions

over operating free-air temperature range (unless otherwise noted)

		MIN	NOM	MAX	UNIT
V _f	Forward Voltage	IF = 10mA		0.9	V
T _A	Operating free-air temperature	-55		150	°C

5.3 Electrical Characteristics_8.2v

At TA=25°C (unless otherwise noted) ⁽¹⁾

PARAMETER		TEST CONDITION	MIN	TYP	MAX	UNIT
V _Z	Zener Voltage	@I _{ZT} 5mA	7.79	8.2	8.61	V
Z _{ZT}	Zener Impedance	@I _{ZT} 5mA		2	10	Ω
I _R	Leakage Current	IR @ VR 5.75v			500	nA
Θ _{VZ}	Temp Coeff.	@I _{ZT} 5mA	3.2		6.2	mV/C
CD	Diode capacitance	VR=0, f=1MHz			75	pF

- (1) Typical parameters are measured at 25°C

6 Application and Implementation

Note

Information in the following applications sections is not part of the TI component specification, and TI does not warrant its accuracy or completeness. TI's customers are responsible for determining suitability of components for their purposes, as well as validating and testing their design implementation to confirm system functionality.

6.1 Application Information

The SZMM5Zx-Q1 is a single channel Zener diode that can be used for applications such as voltage regulation and over-voltage protection.

7 Device and Documentation Support

7.1 Documentation Support

7.2 Receiving Notification of Documentation Updates

To receive notification of documentation updates, navigate to the device product folder on [ti.com](https://www.ti.com). Click on *Notifications* to register and receive a weekly digest of any product information that has changed. For change details, review the revision history included in any revised document.

7.3 Support Resources

[TI E2E™ support forums](#) are an engineer's go-to source for fast, verified answers and design help — straight from the experts. Search existing answers or ask your own question to get the quick design help you need.

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7.4 Trademarks

TI E2E™ is a trademark of Texas Instruments.
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7.5 Electrostatic Discharge Caution



This integrated circuit can be damaged by ESD. Texas Instruments recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage.

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

7.6 Glossary

[TI Glossary](#) This glossary lists and explains terms, acronyms, and definitions.

8 Revision History

NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

DATE	REVISION	NOTES
November 2024	*	Initial Release

9 Mechanical, Packaging, and Orderable Information

The following pages include mechanical, packaging, and orderable information. This information is the most current data available for the designated devices. This data is subject to change without notice and revision of this document. For browser-based versions of this data sheet, refer to the left-hand navigation.

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