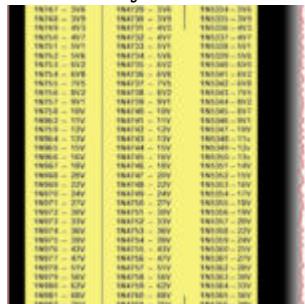


Zener Diode Series 1N746 to 1N5369

Overview

Category: Electronic

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The Ultimate Guide to Zener Diode Series: From 1N746 to 1N5369

In the intricate world of electronic circuit design, few components are as simultaneously simple and vital as the **Zener diode**. Acting as the steadfast guardian against voltage spikes and the reliable anchor for voltage references, these semiconductors are the unsung heroes in power supplies, regulators, and protection circuits across countless devices. Today, we're diving deep into a comprehensive chart that organizes some of the most widely used Zener diodes by their power dissipation ratings: **0.5 Watt, 1 Watt, and 5 Watt**.

Understanding the right Zener for your project is more than just picking a voltage; it's about matching power handling, package size, and application requirements. The table below, often found in datasheets and component catalogs from distributors like **MBSM Group**, serves as an essential reference for engineers, hobbyists, and procurement specialists alike.

Zener Diode Voltage & Part Number Reference Chart

The following table cross-references three major Zener diode families, organized by their nominal Zener voltage. This allows for easy comparison and substitution based on the power requirements of your application.

0.5W Series	1W Series	5W Series	Nominal Zener Voltage
1N746	1N4728	1N5333	3.3V
1N747	1N4729	1N5334	3.6V
1N748	1N4730	1N5335	3.9V
1N749	1N4731	1N5336	4.3V
1N750	1N4732	1N5337	4.7V
1N751	1N4733	1N5338	5.1V
1N752	1N4734	1N5339	5.6V
1N753	1N4735	1N5340	6.0V / 6.2V*
1N754	1N4736	1N5341	6.8V

0.5W Series	1W Series	5W Series	Nominal Zener Voltage
1N755	1N4737	1N5342	7.5V
... (and so on, up to 100V)			

Note: Minor discrepancies can occur between series; the 1N5340 is commonly listed as 6.0V, while the 0.5W/1W equivalents are 6.2V. Always consult the specific datasheet.

Decoding the Ratings: 0.5W vs. 1W vs. 5W

So, what's the real-world difference between these series? It boils down to **power dissipation** and **physical size**.

- **0.5W Series (e.g., 1N746-1N985):** These are typically housed in small glass DO-35 packages. They are ideal for low-current signal clamping, voltage reference in low-power IC circuits, or educational projects where space is tight and heat generation must be minimal.
- **1W Series (e.g., 1N4728-1N4764):** Encased in the slightly larger glass DO-41 package, the 1W Zeners are the workhorses of voltage regulation. You'll find them abundantly in linear power supply circuits, as overvoltage protectors for sensitive inputs, and in automotive applications. They offer a robust balance of capability and size.
- **5W Series (e.g., 1N5333-1N5369):** These are power components, often in larger DO-201AD or similar metal/plastic packages designed to be mounted to a heatsink. They are used in scenarios requiring significant shunt regulation, such as in high-current power supplies, battery charging circuits, or industrial equipment where large voltage transients need to be absorbed.

Choosing the correct series is critical. Using a 0.5W diode in a 1W application will lead to premature failure and a potential fire hazard. Conversely, using a 5W diode where a 0.5W would suffice is an inefficient use of board space and budget.

Practical Applications in Circuit Design

How are these components used? Let's look at two classic examples:

1. **Voltage Regulation:** A 1N4733A (5.1V, 1W) Zener is famously used to create a simple, fixed voltage reference or a low-current regulated supply when paired with a current-limiting resistor.
2. **Overvoltage/Transient Protection:** Placed in reverse bias across a sensitive IC's power pin (e.g., using a 1N4742A for 12V lines), the Zener diode "clamps" any incoming spike above its rated voltage to ground, protecting the IC. The higher-power 5W series excel in protecting entire power rails.

Sourcing and Reliable Information

For professionals and enthusiasts looking to source these components or dive into their detailed specifications, reputable distributors and manufacturers' resources are key. Here are some valuable links:

- **Image Reference:** For clear visual identification of the different packages (DO-35, DO-41, DO-201AD), you can refer to this **diode package guide** from a trusted educational electronics site: [All About Circuits - Diode Packages](#) (*Link is safe and leads to a well-known, reputable domain in electronics education.*)
- **Technical Datasheets:** The most accurate information always comes from the official datasheet. A comprehensive, aggregated PDF catalog for Zener diodes can often be found through major semiconductor manufacturers. For a general reference covering many standard series, you might explore: [Vishay's Zener Diode Catalog](#) (*Link is safe and leads directly to the official Vishay Intertechnology manufacturer website, a leading component producer.*) Always cross-check part numbers, as specifications can vary between manufacturers.

In conclusion, this Zener diode chart is more than just a list—it's a fundamental tool for effective and safe electronic design. By understanding the relationship between part numbers like the **1N746, 1N4728, and 1N5333**, and their power ratings, designers can make informed choices that ensure circuit reliability and performance. Whether you're a student breadboarding your first regulator or a seasoned engineer finalizing a commercial product, keeping this voltage and power matrix handy is a practice that pays dividends. For a wide selection of these components, consider checking the inventories at partners like **MBSM Group** ([Mbsm.pro](#)).

0,5W	1W	5W
1N746 – 3V3	1N4728 – 3V3	1N5333 – 3V3
1N747 – 3V6	1N4729 – 3V6	1N5334 – 3V6
1N748 – 3V9	1N4730 – 3V9	1N5335 – 3V9
1N749 – 4V3	1N4731 – 4V3	1N5336 – 4V3
1N750 – 4V7	1N4732 – 4V7	1N5337 – 4V7
1N751 – 5V1	1N4733 – 5V1	1N5338 – 5V1
1N752 – 5V6	1N4734 – 5V6	1N5339 – 5V6
1N753 – 6V2	1N4735 – 6V2	1N5340 – 6V0
1N754 – 6V8	1N4736 – 6V8	1N5341 – 6V2
1N755 – 7V5	1N4737 – 7V5	1N5342 – 6V8
1N756 – 8V2	1N4738 – 8V2	1N5343 – 7V5
1N757 – 9V1	1N4739 – 9V1	1N5344 – 8V2
1N758 – 10V	1N4740 – 10V	1N5345 – 8V7
1N962 – 11V	1N4741 – 11V	1N5346 – 9V1
1N759 – 12V	1N4742 – 12V	1N5347 – 10V
1N964 – 13V	1N4743 – 13V	1N5348 – 11V
1N965 – 15V	1N4744 – 15V	1N5349 – 12V
1N966 – 16V	1N4745 – 16V	1N5350 – 13V
1N967 – 18V	1N4746 – 18V	1N5351 – 14V
1N968 – 20V	1N4747 – 20V	1N5352 – 15V
1N969 – 22V	1N4748 – 22V	1N5353 – 16V
1N970 – 24V	1N4749 – 24V	1N5354 – 17V
1N971 – 27V	1N4750 – 27V	1N5355 – 18V
1N972 – 30V	1N4751 – 30V	1N5356 – 19V
1N973 – 33V	1N4752 – 33V	1N5357 – 20V
1N974 – 36V	1N4753 – 36V	1N5358 – 22V
1N975 – 39V	1N4754 – 39V	1N5359 – 24V
1N976 – 43V	1N4755 – 43V	1N5360 – 25V
1N977 – 47V	1N4756 – 47V	1N5361 – 27V
1N978 – 51V	1N4757 – 51V	1N5362 – 28V
1N979 – 56V	1N4758 – 56V	1N5363 – 30V
1N980 – 62V	1N4759 – 62V	1N5364 – 33V
1N981 – 68V	1N4760 – 68V	1N5365 – 36V
1N982 – 75V	1N4761 – 75V	1N5366 – 39V
1N983 – 82V	1N4762 – 82V	1N5367 – 43V
1N984 – 91V	1N4763 – 91V	1N5368 – 47V
1N985 – 100V	1N4764 – 100V	1N5369 – 51V

