



New Product Announcement

GDZxxLP3/DZ9FxxS92
Zener Diodes

New Ultra-low Profile SOD923 Series and Expansion of the Minuscule X3-DFN0603-2 Series of Zener Diodes

Diodes Incorporated announces the introduction of a new series of zener diodes, DZ9FxxS92, housed in the ultra-low profile surface-mountable SOD923 package. The GDZxxLP3 series of zener diodes, housed in the minuscule and leadless surface mountable X3-DFN0603-2 package, are now expanded to cover lower and higher zener voltages (V_Z).

The ultra-low profile and minuscule packages of these zener diodes save PCB (printed circuit board) area and minimize the height of the surrounding space. As a result, mobile electronics in which these zener diodes are deployed, can be realized in ever smaller form-factor without sacrificing any of the system performance deemed necessary to ensure the end-users with rich user experience anywhere and anytime.

Both the DZ9FxxS92 and GDZxxLP3 series of zener diodes offer zener voltage range between 2.7V and 24V. As such, they are perfectly suited for applications like voltage referencing, voltage regulation, over-voltage protection and voltage limiting.

The targeted end markets for these devices are portable electronics, mobile communication, virtual/augmented reality, mobile computing, micro-displays, and IoT (internet of things) terminals. Both SOD923 and X3-DFN0603-2 packages are fully green and RoHS-compliant. (See diodes.com for further details).



The Diodes' Advantage

▪ Minuscule Surface-Mountable Packages

The ultra-low profile and flat-lead design (1.0 x 0.6 x 0.37mm typ.) of the SOD923 package and the minuscule (0.6 x 0.3 x 0.3mm typ.) leadless X3-DFN0603-2 package enable compact form-factor for end systems where space is at a premium.

▪ Tight Tolerance on Zener Breakdown Voltage

The variation of the zener breakdown voltage is optimized to stay within +/-5% of the nominal value.

▪ Low Reverse Leakage Current

With the exceptionally low leakage current ($I_{R_MAX} = 500nA$ at most zener voltages), the DZ9FxxS92 series helps to prolong the battery life of portable systems when the devices are not operating in the zener breakdown mode.

▪ Wide Range of Zener Breakdown Voltages Available

The DZ9FxxS92 series offers nominal breakdown voltages ranging from 2.7V to 24V. The GDZxxLP3 series has been expanded to cover the wider voltage range from 2.7V to 24V.

Target Markets

- Portable Electronics
- Mobile Communication
- IoT Terminals
- Virtual/Augmented Reality
- Micro Display



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Product Portfolio

| Part Number | Power Rating (mW) | Zener Voltage Range ¹ | | | | Maximum Reverse Current ¹ | | Competitors | Competitors' Part Number |
|-------------|-------------------|----------------------------------|------------------------------|------------------------------|----------------------|--------------------------------------|----------------------|------------------|--------------------------|
| | | Nominal Vz (V) @ I _{ZT} | Min Vz (V) @ I _{ZT} | Max Vz (V) @ I _{ZT} | I _{ZT} (mA) | I _R (μA) | @ V _R (V) | | |
| GDZ2V7LP3 | 250 | 2.7 | 2.57 | 2.84 | 5 | 20 | 1.0 | ON Semiconductor | NZD2V7MUT5G |
| GDZ3V0LP3 | 250 | 3.0 | 2.85 | 3.15 | 5 | 10 | 1.0 | ON Semiconductor | NZD3V0MUT5G |
| GDZ3V3LP3 | 250 | 3.3 | 3.14 | 3.47 | 5 | 5.0 | 1.0 | ON Semiconductor | NZD3V3MUT5G |
| GDZ3V6LP3 | 250 | 3.6 | 3.41 | 3.79 | 5 | 10 | 1.0 | ON Semiconductor | NZD3V6MUT5G |
| GDZ4V1LP3 | 250 | 4.1 | 3.93 | 4.37 | 5 | 5 | 1.0 | Industry First! | N/A |
| GDZ4V3LP3 | 250 | 4.3 | 4.08 | 4.53 | 5 | 5 | 1.0 | ON Semiconductor | NZD4V3MUT5G |
| GDZ9V1LP3 | 250 | 9.1 | 8.65 | 9.56 | 5 | 0.5 | 6 | ON Semiconductor | NZD9V1MUT5G |
| GDZ10LP3 | 250 | 10 | 9.50 | 10.50 | 5 | 0.2 | 7 | ON Semiconductor | NZD10VMUT5G |
| GDZ11LP3 | 250 | 11 | 10.45 | 11.55 | 5 | 0.1 | 8 | ON Semiconductor | NZD11VMUT5G |
| GDZ12LP3 | 250 | 12 | 11.40 | 12.60 | 5 | 0.1 | 8 | ON Semiconductor | NZD12VMUT5G |
| GDZ13LP3 | 250 | 13 | 12.35 | 13.65 | 5 | 0.1 | 8 | ON Semiconductor | NZD13VMUT5G |
| GDZ15LP3 | 250 | 15 | 14.25 | 15.75 | 5 | 0.1 | 10.5 | ON Semiconductor | NZD15VMUT5G |
| GDZ16LP3 | 250 | 16 | 15.20 | 16.80 | 5 | 0.1 | 11.2 | ON Semiconductor | NZD16VMUT5G |
| GDZ18LP3 | 250 | 18 | 17.10 | 18.90 | 5 | 0.1 | 12.6 | ON Semiconductor | NZD18VMUT5G |
| GDZ20LP3 | 250 | 20 | 19.00 | 21.00 | 5 | 0.1 | 14.0 | ON Semiconductor | NZD20VMUT5G |
| GDZ22LP3 | 250 | 22 | 20.90 | 23.10 | 5 | 0.1 | 15.4 | ON Semiconductor | NZD22VMUT5G |
| GDZ24LP3 | 250 | 24 | 22.80 | 25.20 | 5 | 0.1 | 16.8 | ON Semiconductor | NZD24VMUT5G |
| DZ9F2V7S92 | 250 | 2.7 | 2.57 | 2.84 | 5 | 20 | 1.0 | ON Semiconductor | NZ9F2V7T5G |
| DZ9F3V0S92 | 250 | 3.0 | 2.85 | 3.15 | 5 | 10 | 1.0 | ON Semiconductor | NZ9F3V0T5G |
| DZ9F3V3S92 | 250 | 3.3 | 3.14 | 3.47 | 5 | 10 | 1.0 | ON Semiconductor | NZ9F3V3T5G |
| DZ9F3V6S92 | 250 | 3.6 | 3.42 | 3.78 | 5 | 10 | 1.0 | ON Semiconductor | NZ9F3V6T5G |
| DZ9F3V9S92 | 250 | 3.9 | 3.71 | 4.10 | 5 | 5 | 1.0 | ON Semiconductor | NZ9F3V9T5G |
| DZ9F4V1S92 | 250 | 4.1 | 3.94 | 4.36 | 5 | 5 | 1.0 | Industry First! | N/A |
| DZ9F4V3S92 | 250 | 4.3 | 4.09 | 4.52 | 5 | 5 | 1.0 | ON Semiconductor | NZ9F4V3T5G |
| DZ9F4V7S92 | 250 | 4.7 | 4.47 | 4.94 | 5 | 2 | 1 | ON Semiconductor | NZ9F4V7T5G |
| DZ9F5V1S92 | 250 | 5.1 | 4.85 | 5.36 | 5 | 2 | 1.5 | ON Semiconductor | NZ9F5V1T5G |
| DZ9F5V6S92 | 250 | 5.6 | 5.32 | 5.88 | 5 | 1 | 2.5 | ON Semiconductor | NZ9F5V6T5G |
| DZ9F6V2S92 | 250 | 6.2 | 5.89 | 6.51 | 5 | 1 | 3 | ON Semiconductor | NZ9F6V2T5G |
| DZ9F6V8S92 | 250 | 6.8 | 6.46 | 7.14 | 5 | 0.5 | 3.5 | ON Semiconductor | NZ9F6V8T5G |
| DZ9F7V5S92 | 250 | 7.5 | 7.13 | 7.88 | 5 | 0.5 | 4 | ON Semiconductor | NZ9F7V5T5G |
| DZ9F8V2S92 | 250 | 8.2 | 7.79 | 8.61 | 5 | 0.5 | 5 | ON Semiconductor | NZ9F8V2T5G |
| DZ9F9V1S92 | 250 | 9.1 | 8.65 | 9.56 | 5 | 0.5 | 6 | ON Semiconductor | NZ9F9V1T5G |
| DZ9F10S92 | 250 | 10 | 9.50 | 10.50 | 5 | 0.1 | 7 | ON Semiconductor | NZ9F10VT5G |
| DZ9F11S92 | 250 | 11 | 10.45 | 11.55 | 5 | 0.1 | 8 | ON Semiconductor | NZ9F11VT5G |
| DZ9F12S92 | 250 | 12 | 11.40 | 12.60 | 5 | 0.1 | 9 | ON Semiconductor | NZ9F12VT5G |
| DZ9F13S92 | 250 | 13 | 12.35 | 13.65 | 5 | 0.1 | 10 | ON Semiconductor | NZ9F13VT5G |
| DZ9F15S92 | 250 | 15 | 14.25 | 15.75 | 5 | 0.1 | 11 | ON Semiconductor | NZ9F15VT5G |
| DZ9F16S92 | 250 | 16 | 15.20 | 16.80 | 5 | 0.1 | 12 | ON Semiconductor | NZ9F16VT5G |
| DZ9F18S92 | 250 | 18 | 17.10 | 18.90 | 5 | 0.1 | 14 | ON Semiconductor | NZ9F18VT5G |
| DZ9F20S92 | 250 | 20 | 19.00 | 21.00 | 5 | 0.1 | 15.4 | ON Semiconductor | NZ9F20VT5G |
| DZ9F22S92 | 250 | 22 | 20.90 | 23.10 | 5 | 0.1 | 16.8 | ON Semiconductor | NZ9F22VT5G |
| DZ9F24S92 | 250 | 24 | 22.80 | 25.20 | 5 | 0.1 | 18.9 | ON Semiconductor | NZ9F24VT5G |

¹ Deviations may exist between the specifications of the Diodes devices and the specifications of the competitor devices listed above. The customer is encouraged to carefully review the Diodes Inc. and competitor datasheets to verify the suitability of the Diodes device as a cross for any given competitor product. It is solely the responsibility of the customer to determine whether the Diodes device is suitable for any given application.