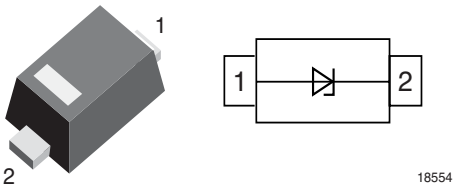
Single ESD Protection Diode in SOD-523

Features

- Small SOD-523 package
- Low leakage current
- ESD protection to IEC 61000-4-2 15 kV (air)
- ESD protection to IEC 61000-4-2 8 kV (contact)
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



Mechanical Data

Case: SOD-523 Plastic case

Molding Compound Flammability Rating:
UL 94 V-0

Terminals: High temperature soldering guaranteed:
260 °C/10 sec. at terminals

Weight: approx. 1.6 mg

Packaging Codes/Options:

GS18 / 10 k per 13" reel (8 mm tape), 10 k/box

GS08 / 3 k per 7" reel (8 mm tape), 15 k/box

Absolute Maximum Ratings

Ratings at 25 °C, ambient temperature unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
ESD Air discharge per IEC 61000-4-2		V_{ESD}	15	kV
ESD Contact discharge per IEC 61000-4-2		V_{ESD}	8	kV

Thermal Characteristics

Ratings at 25 °C, ambient temperature unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Operating temperature		T_J	- 40 to + 125	°C
Storage temperature		T_{STG}	- 55 to + 150	°C

Electrical Characteristics

Partnumber	Marking Code	Reverse Stand-off Voltage	Max. Reverse Current	Max. Clamping Voltage	Max. Peak Pulse Current	Min. Reverse Breakdown Voltage	Capacitance
		@ I_{Rmax}	@ V_{RWM}	@ I_{PPM} (see Fig. 1)	(see Fig. 1)	@ I_R = 1 mA	@ V_R = 0 V, f = 1 MHZ
		V_{RWM}	I_R	V_C	I_{PPM}	V_{BR}	C_D
		V	µA	V	A	V	pF
VESD01-02V	A*)	1	100	9	7	1.5	180
VESD03-02V	B*)	3	20	12	9	4	110
VESD05-02V	C*)	5	0.1	20	6	6.5	55
VESD08-02V	D*)	8	0.1	30	4	9	35
VESD12-02V	E*)	12	0.1	25	2	14	30

*) Number turned by 180°

Typical Characteristics (Tamb = 25 °C unless otherwise specified)

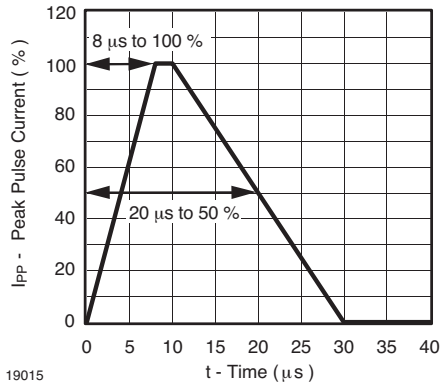


Figure 1. Pulse Waveform 8/20 µs acc. IEC 61000 - 4 - 5

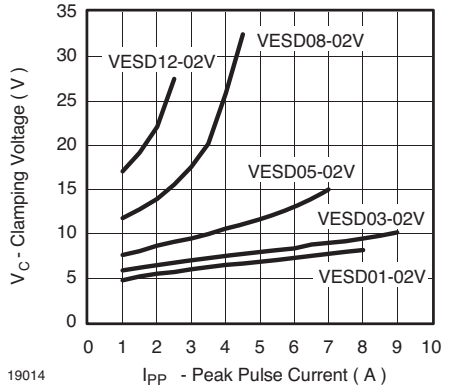


Figure 3. Clamping Voltage vs. Peak Pulse Current

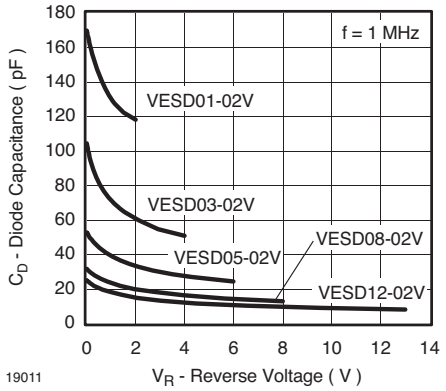


Figure 2. Typ. Diode Capacitance vs. Reverse Voltage

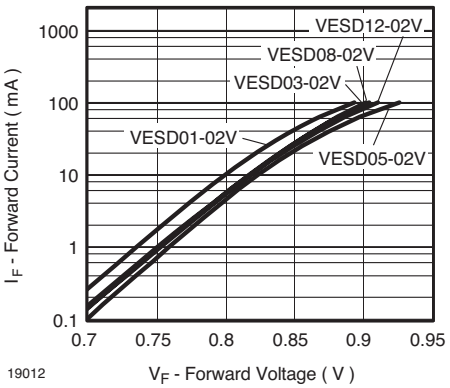


Figure 4. Forward Current vs. Forward Voltage

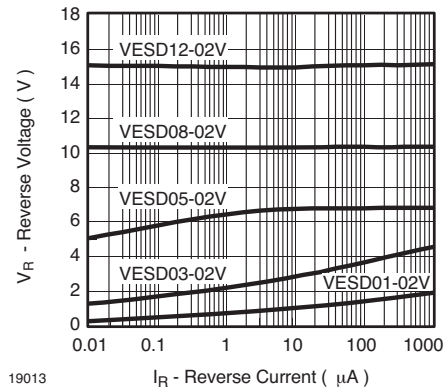


Figure 5. Reverse Voltage vs. Reverse Current

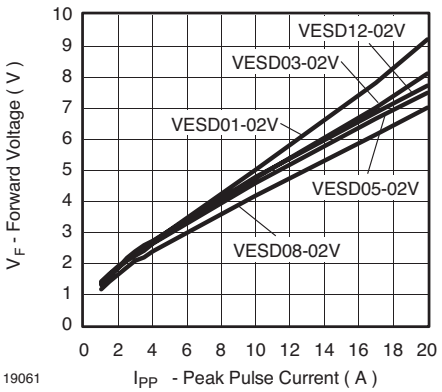
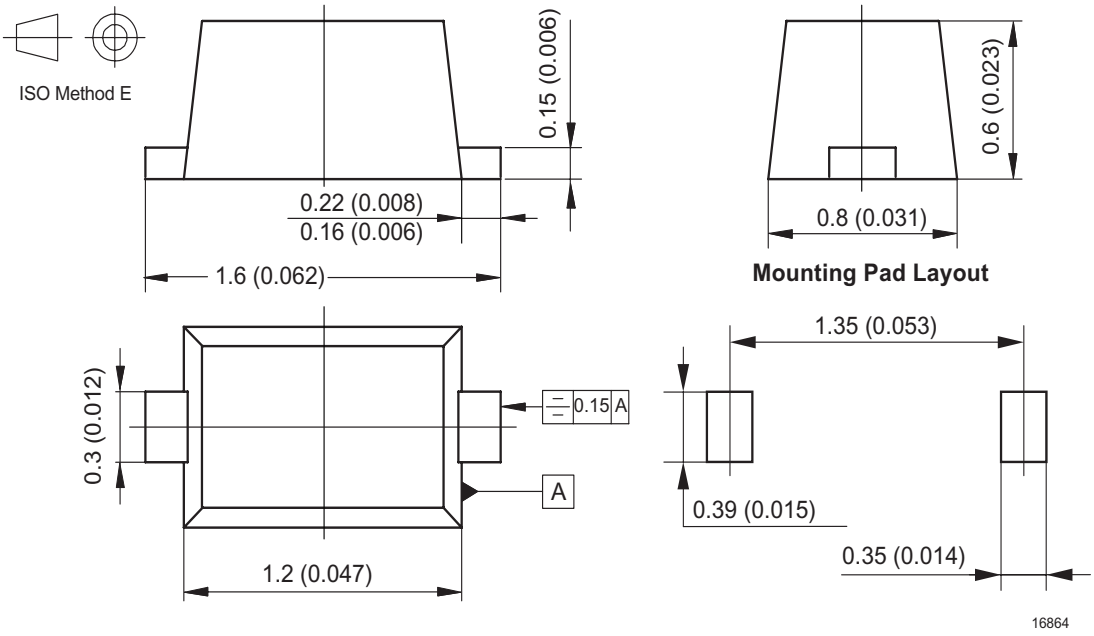


Figure 6. Typical Forward Voltage vs. Peak Pulse Current

Package Dimensions in mm (Inches)



Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

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