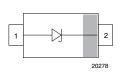


### Vishay Semiconductors

## **Single ESD-Protection Diode in SOD-523**





#### **FEATURES**

- Single-line ESD-protection
- · Low leakage current

± 15 kV air discharge

- ESD-immunity acc. IEC 61000-4-2
   ± 8 kV contact discharge
- e3 Sn
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC





COMPLIANT

GREEN

(5-2008)\*\*

#### MARKING (example only)



Bar = cathode marking

X = date code

Y = type code (see table below)

ORDERING INFORMATION							
DEVICE NAME	ORDERING CODE	TAPED UNITS PER REEL (8 mm TAPE ON 7" REEL)	MINIMUM ORDER QUANTITY				
VESD01-02V	VESD01-02V-G-08	3000	3000				
VESD03-02V	VESD03-02V-G-08	3000	3000				
VESD05-02V	VESD05-02V-G-08	3000	3000				
VESD08-02V	VESD08-02V-G-08	3000	3000				
VESD12-02V	VESD12-02V-G-08	3000	3000				

PACKAGE DA	PACKAGE DATA									
DEVICE NAME	PACKAGE NAME	TYPE CODE	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS				
VESD01-02V	SOD-523	.∀	1.4 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals				
VESD03-02V	SOD-523		1.4 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals				
VESD05-02V	SOD-523	်.	1.4 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals				
VESD08-02V	SOD-523	.a	1.4 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals				
VESD12-02V	SOD-523	. Э	1.4 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals				

<sup>\*\*</sup> Please see document "Vishay Material Category Policy": <a href="www.vishay.com/doc?99902">www.vishay.com/doc?99902</a>

### **VESDxx-02V**

## Vishay Semiconductors

# Single ESD-Protection Diode in SOD-523



ABSOLUTE MAXIM	UM RATINGS VESD01-02V			
PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	acc. IEC 61000-4-5, 8/20 µs/single shot	I <sub>PPM</sub>	7	Α
Peak pulse power	acc. IEC 61000-4-5, 8/20 µs/single shot	P <sub>PP</sub>	63	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses		± 8	kV
ESD IIIIIIIIIIIII	Air discharge acc. IEC 61000-4-2; 10 pulses	$V_{ESD}$	± 15	kV
Operating temperature	Junction temperature	TJ	- 40 to + 125	°C
Storage temperature		T <sub>stg</sub>	- 55 to + 150	°C

ABSOLUTE MAXIMUN	I RATINGS VESD03-02V			
PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	acc. IEC 61000-4-5, 8/20 μs/single shot	I <sub>PPM</sub>	9	Α
Peak pulse power	acc. IEC 61000-4-5, 8/20 μs/single shot	P <sub>PP</sub>	108	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V	± 8	kV
ESD Illillidrilly	Air discharge acc. IEC 61000-4-2; 10 pulses	$V_{ESD}$	± 15	kV
Operating temperature	Junction temperature	TJ	- 40 to + 125	°C
Storage temperature		$T_{stg}$	- 55 to + 150	°C

ABSOLUTE MAXIMU	M RATINGS VESD05-02V			
PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	acc. IEC 61000-4-5, 8/20 μs/single shot	I <sub>PPM</sub>	6	Α
Peak pulse power	acc. IEC 61000-4-5, 8/20 µs/single shot	$P_PP$	120	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V	± 8	kV
ESD Initiditity	Air discharge acc. IEC 61000-4-2; 10 pulses	$V_{ESD}$	± 15	kV
Operating temperature	Junction temperature	TJ	- 40 to + 125	°C
Storage temperature		T <sub>stg</sub>	- 55 to + 150	°C

ABSOLUTE MAXIM	UM RATINGS VESD08-02V			
PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	acc. IEC 61000-4-5, 8/20 μs/single shot	I <sub>PPM</sub>	4	Α
Peak pulse power	acc. IEC 61000-4-5, 8/20 μs/single shot	P <sub>PP</sub>	120	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V	± 8	kV
ESD IIIIIIdility	Air discharge acc. IEC 61000-4-2; 10 pulses	$V_{ESD}$	± 15	kV
Operating temperature	Junction temperature	TJ	- 40 to + 125	°C
Storage temperature		T <sub>stg</sub>	- 55 to + 150	°C

ABSOLUTE MAXIMU	M RATINGS VESD12-02V			
PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Peak pulse current	acc. IEC 61000-4-5, 8/20 µs/single shot	I <sub>PPM</sub>	2	Α
Peak pulse power	acc. IEC 61000-4-5, 8/20 µs/single shot	$P_PP$	25	W
CCD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V	± 8	kV
ESD immunity	Air discharge acc. IEC 61000-4-2; 10 pulses	V <sub>ESD</sub>	± 15	kV
Operating temperature	Junction temperature	TJ	- 40 to + 125	°C
Storage temperature		T <sub>stg</sub>	- 55 to + 150	°C

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# Single ESD-Protection Diode in SOD-523

## Vishay Semiconductors

ELECTRICAL CHARACTERISTICS VESD01-02V							
PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT	
Protection paths	Number of lines which can be protected	N <sub>channel</sub>	-	-	1	lines	
Reverse working voltage	at I <sub>Rmax.</sub>	$V_{RWM}$	1	-	-	V	
Reverse current	at V <sub>RWM</sub>	I <sub>R</sub>	-	-	100	μΑ	
Reverse breakdown voltage	at I <sub>R</sub> = 1 mA	$V_{BR}$	1.5	-	-	V	
Reverse clamping voltage	at I <sub>PP</sub> (see fig. 1)	V <sub>C</sub>	-	9	-	V	
Capacitance	at V <sub>R</sub> = 0 V; f = 1 MHz	C <sub>D</sub>	-	180	-	pF	

ELECTRICAL CHARAC	CTERISTICS VESD03-02V					
PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of lines which can be protected	N <sub>channel</sub>	-	-	1	lines
Reverse working voltage	at I <sub>Rmax.</sub>	$V_{RWM}$	3	-	-	V
Reverse current	at V <sub>RWM</sub>	I <sub>R</sub>	-	-	20	μΑ
Reverse breakdown voltage	at I <sub>R</sub> = 1 mA	$V_{BR}$	4	-	-	V
Reverse clamping voltage	at I <sub>PP</sub> (see fig. 1)	$V_{C}$	-	12	-	V
Capacitance	at $V_R = 0 V$ ; $f = 1 MHz$	C <sub>D</sub>	-	110	-	pF

ELECTRICAL CHARA	CTERISTICS VESD05-02V					
PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of lines which can be protected	N <sub>channel</sub>	-	-	1	lines
Reverse working voltage	at I <sub>Rmax.</sub>	$V_{RWM}$	5	-	-	V
Reverse current	at V <sub>RWM</sub>	I <sub>R</sub>	-	-	0.1	μΑ
Reverse breakdown voltage	at I <sub>R</sub> = 1 mA	$V_{BR}$	6.5	-	-	V
Reverse clamping voltage	at I <sub>PP</sub> (see fig. 1)	V <sub>C</sub>	-	20	-	V
Capacitance	at $V_R = 0 V$ ; $f = 1 MHz$	C <sub>D</sub>	-	55	-	pF

ELECTRICAL CHARAC	CTERISTICS VESD08-02V					
PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of lines which can be protected	N <sub>channel</sub>	-	-	1	lines
Reverse working voltage	at I <sub>Rmax.</sub>	$V_{RWM}$	8	-	-	V
Reverse current	at V <sub>RWM</sub>	I <sub>R</sub>	-	-	0.1	μΑ
Reverse breakdown voltage	at I <sub>R</sub> = 1 mA	$V_{BR}$	9	-	-	V
Reverse clamping voltage	at I <sub>PP</sub> (see fig. 1)	V <sub>C</sub>	-	30	-	V
Capacitance	at V <sub>R</sub> = 0 V; f = 1 MHz	C <sub>D</sub>	-	35	-	pF

ELECTRICAL CHARA	CTERISTICS VESD12-02V					
PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of lines which can be protected	N <sub>channel</sub>	-	-	1	lines
Reverse working voltage	at I <sub>Rmax.</sub>	$V_{RWM}$	12	-	-	V
Reverse current	at V <sub>RWM</sub>	I <sub>R</sub>	-	-	0.1	μΑ
Reverse breakdown voltage	at I <sub>R</sub> = 1 mA	$V_{BR}$	14	-	-	V
Reverse clamping voltage	at I <sub>PP</sub> (see fig. 1)	V <sub>C</sub>	-	25	-	V
Capacitance	at $V_R = 0 V$ ; $f = 1 MHz$	$C_D$	i	30	-	pF

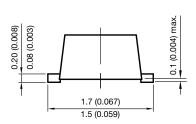
Document Number: 83367 Rev. 1.0, 08-Nov-10

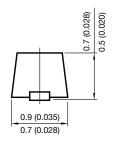
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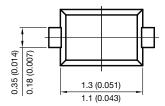
## Single ESD-Protection Diode in SOD-523



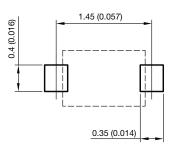
#### PACKAGE DIMENSIONS in millimeters (inches): SOD-523







foot print recommendation:



Document no.: S8-V-3880.02-001 (4) Rev. h - Date: 13. Oct. 2010

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