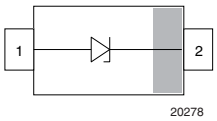
Single ESD-Protection Diode in SOD-523



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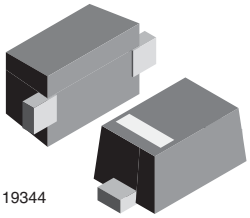
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FEATURES

- Single-line ESD-protection
- Low leakage current
- ESD-immunity acc. IEC 61000-4-2
  ± 8 kV contact discharge
  ± 15 kV air discharge
- e3 - Sn
- Material categorization:
  For definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

RoHS COMPLIANT

GREEN (5-2008)

MARKING (example only)

20279

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 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	.Ƀ	1.4 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals
VESD05-02V	SOD-523	.Ↄ	1.4 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals
VESD08-02V	SOD-523	.Ɑ	1.4 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals
VESD12-02V	SOD-523	.Ǝ	1.4 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals

ABSOLUTE MAXIMUM RATINGS VESD01-02V				
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**VALUE**	**UNIT**
Peak pulse current	Acc. IEC 61000-4-5, 8/20 µs/single shot	I_{PPM}	7	A
Peak pulse power	Acc. IEC 61000-4-5, 8/20 µs/single shot	P_{PP}	63	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V_{ESD}	± 8	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 15	kV
Operating temperature	Junction temperature	T_J	- 40 to + 125	°C
Storage temperature		T_{stg}	- 55 to + 150	°C

ABSOLUTE MAXIMUM RATINGS VESD03-02V				
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**VALUE**	**UNIT**
Peak pulse current	Acc. IEC 61000-4-5, 8/20 µs/single shot	I_{PPM}	9	A
Peak pulse power	Acc. IEC 61000-4-5, 8/20 µs/single shot	P_{PP}	108	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V_{ESD}	± 8	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 15	kV
Operating temperature	Junction temperature	T_J	- 40 to + 125	°C
Storage temperature		T_{stg}	- 55 to + 150	°C

ABSOLUTE MAXIMUM RATINGS VESD05-02V				
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**VALUE**	**UNIT**
Peak pulse current	Acc. IEC 61000-4-5, 8/20 µs/single shot	I_{PPM}	6	A
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_{ESD}	± 8	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 15	kV
Operating temperature	Junction temperature	T_J	- 40 to + 125	°C
Storage temperature		T_{stg}	- 55 to + 150	°C

ABSOLUTE MAXIMUM RATINGS VESD08-02V				
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**VALUE**	**UNIT**
Peak pulse current	Acc. IEC 61000-4-5, 8/20 µs/single shot	I_{PPM}	4	A
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_{ESD}	± 8	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 15	kV
Operating temperature	Junction temperature	T_J	- 40 to + 125	°C
Storage temperature		T_{stg}	- 55 to + 150	°C

ABSOLUTE MAXIMUM RATINGS VESD12-02V				
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**VALUE**	**UNIT**
Peak pulse current	Acc. IEC 61000-4-5, 8/20 µs/single shot	I_{PPM}	2	A
Peak pulse power	Acc. IEC 61000-4-5, 8/20 µs/single shot	P_{PP}	25	W
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V_{ESD}	± 8	kV
	Air discharge acc. IEC 61000-4-2; 10 pulses		± 15	kV
Operating temperature	Junction temperature	T_J	- 40 to + 125	°C
Storage temperature		T_{stg}	- 55 to + 150	°C

ELECTRICAL CHARACTERISTICS VESD01-02V
(T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of lines which can be protected	$N_{channel}$	-	-	1	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}	-	-	1	V
Reverse voltage	at I_R = 100 µA	V_R	1	-	-	V
Reverse current	at V_R = 1 V	I_R	-	-	100	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	1.5	-	-	V
Reverse clamping voltage	at I_{PP} (see fig. 1)	V_C	-	9	-	V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D	-	180	-	pF

ELECTRICAL CHARACTERISTICS VESD03-02V
(T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of lines which can be protected	$N_{channel}$	-	-	1	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}	-	-	3	V
Reverse voltage	at I_R = 20 µA	V_R	3	-	-	V
Reverse current	at V_R = 3 V	I_R	-	-	20	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	4	-	-	V
Reverse clamping voltage	at I_{PP} (see fig. 1)	V_C	-	12	-	V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D	-	110	-	pF

ELECTRICAL CHARACTERISTICS VESD05-02V
(T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of lines which can be protected	$N_{channel}$	-	-	1	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}	-	-	5	V
Reverse voltage	at I_R = 0.1 µA	V_R	5	-	-	V
Reverse current	at V_R = 5 V	I_R	-	-	0.1	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	6.5	-	-	V
Reverse clamping voltage	at I_{PP} (see fig. 1)	V_C	-	20	-	V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D	-	55	-	pF

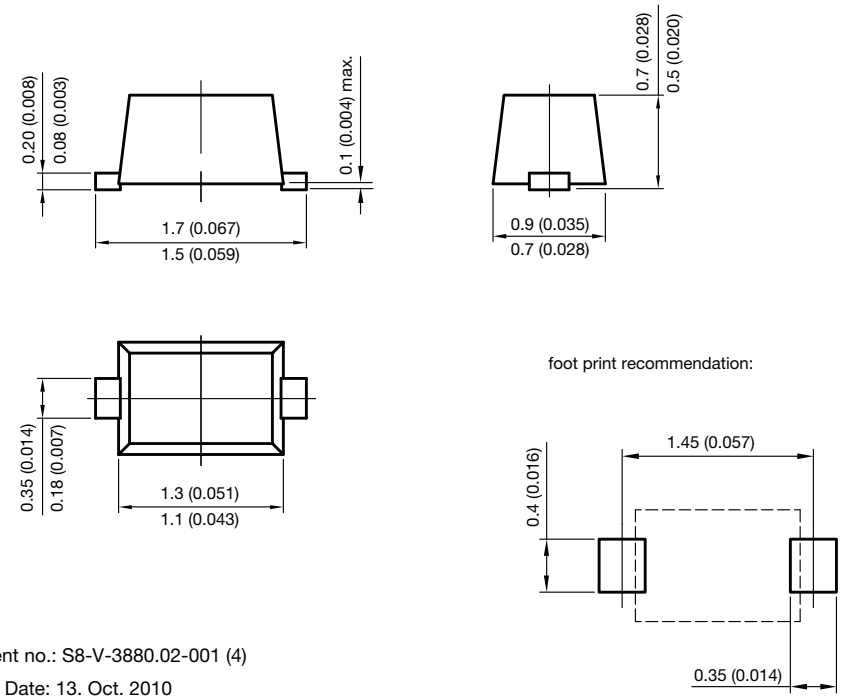
ELECTRICAL CHARACTERISTICS VESD08-02V
(T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of lines which can be protected	$N_{channel}$	-	-	1	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}	-	-	8	V
Reverse voltage	at I_R = 0.1 µA	V_R	8	-	-	V
Reverse current	at V_R = 8 V	I_R	-	-	0.1	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	9	-	-	V
Reverse clamping voltage	at I_{PP} (see fig. 1)	V_C	-	30	-	V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D	-	35	-	pF

ELECTRICAL CHARACTERISTICS VESD12-02V
(T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Protection paths	Number of lines which can be protected	$N_{channel}$	-	-	1	lines
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}	-	-	12	V
Reverse voltage	at I_R = 0.1 µA	V_R	12	-	-	V
Reverse current	at V_R = 12 V	I_R	-	-	0.1	µA
Reverse breakdown voltage	at I_R = 1 mA	V_{BR}	14	-	-	V
Reverse clamping voltage	at I_{PP} (see fig. 1)	V_C	-	25	-	V
Capacitance	at V_R = 0 V; f = 1 MHz	C_D	-	30	-	pF

PACKAGE DIMENSIONS in millimeters (Inches): **SOD-523**



Document no.: S8-V-3880.02-001 (4)

Rev. h - Date: 13. Oct. 2010

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