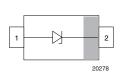


Single ESD Protection Diode in SOD-523





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 <u>www.vishay.com/doc?99912</u>





HALOGEN FREE GREEN (5-2008)

MARKING (example only)

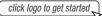


Bar = cathode marking

X = date code

Y = type code (see table below)

DESIGN SUPPORT TOOLS





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 I	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)	Peak temperature max. 260 °C
VESD03-02V	SOD-523	В.	1.4 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	Peak temperature max. 260 °C
VESD05-02V	SOD-523	С.	1.4 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	Peak temperature max. 260 °C
VESD08-02V	SOD-523	. П	1.4 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	Peak temperature max. 260 °C
VESD12-02V	SOD-523	. Э	1.4 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	Peak temperature max. 260 °C



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	Α		
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	± 8	kV		
ESD IIIIIIdriity	Air discharge acc. IEC 61000-4-2; 10 pulses	V_{ESD}	± 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	Α		
Peak pulse power	Acc. IEC 61000-4-5, 8/20 μs/single shot	P _{PP}	108	W		
CCD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	W	± 8	kV		
ESD immunity	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 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	А			
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 Illillidrity	Air discharge acc. IEC 61000-4-2; 10 pulses	V_{ESD}	± 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	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 IIIIIIdriity	Air discharge acc. IEC 61000-4-2; 10 pulses	V_{ESD}	± 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	Α
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	± 8	kV
ESD Inimunity	Air discharge acc. IEC 61000-4-2; 10 pulses	V _{ESD}	± 15	kV
Operating temperature	Junction temperature	T_J	-40 to +125	°C
Storage temperature		T _{stg}	-55 to +150	°C



ELECTRICAL CHARAC (T _{amb} = 25 °C, unless oth	ETERISTICS VESD01-02V erwise 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	μΑ
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 $V_R = 0 \text{ V}$; $f = 1 \text{ MHz}$	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	μΑ		
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		

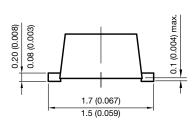
ELECTRICAL CHARACTERISTICS VESD05-02V (T _{amb} = 25 °C, unless otherwise specified)								
PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT		
Protection paths	Number of lines which can be protected	N _{channel}	-	-	1	lines		
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}	-	-	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		

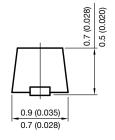
ELECTRICAL CHARACTERISTICS VESD08-02V (T _{amb} = 25 °C, unless otherwise specified)								
PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT		
Protection paths	Number of lines which can be protected	N _{channel}	-	-	1	lines		
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}	-	-	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		

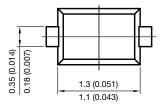
ELECTRICAL CHARACTERISTICS VESD12-02V (T _{amb} = 25 °C, unless otherwise specified)								
PARAMETER	TEST CONDITIONS/REMARKS	SYMBOL	MIN.	TYP.	MAX.	UNIT		
Protection paths	Number of lines which can be protected	N _{channel}	-	-	1	lines		
Reverse stand-off voltage	Max. reverse working voltage	V_{RWM}	-	-	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		

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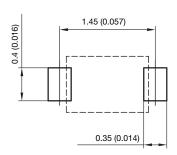
PACKAGE DIMENSIONS in millimeters (Inches): SOD-523







foot print recommendation:



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

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