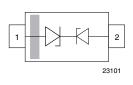
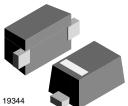


Bidirectional Asymmetrical (BiAs) Single Line ESD-Protection Diode in SOD-523





MARKING (example only)

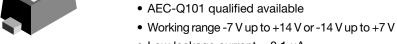


Bar = pin 1 marking X = date code Y = type code (see table below)



FEATURES

- Compact SOD-523 package
- Low package height < 0.75 mm
- 1-line ESD-protection
- Low leakage current < 0.1 μA
- Low load capacitance typical C_D = 8 pF
- ESD-protection acc. IEC 61000-4-2
 ± 25 kV contact discharge
 ± 30 kV air discharge
- Lead plating: Sn (e3)
 Soldering can be checked by standard vision inspection
 AOI = automated optical inspection
 No X-ray necessary
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912





AUTOMOTIV

LINKS TO ADDITIONAL RESOURCES	p

ORDERING INFORMATION						
		ENVIRONMEN				
PART NUMBER (EXAMPLE)	AEC-Q101 QUALIFIED	RoHS COMPLIANT + LEAD (Pb)-FREE TERMINATIONS	TIN PLATED	8K PER 7" REEL (8 mm TAPE)	ORDERING CODE (EXAMPLE)	
		GREEN		MOQ = 8K/BOX		
VCUT0714A02V	-	G	3	-08	VCUT0714A02V-G3-08	
VCUT0714A02V	Н	G	3	-08	VCUT0714A02VHG3-08	

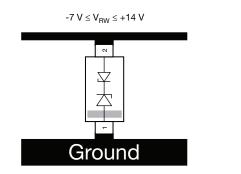
PACKAGE DATA							
DEVICE NAME	PACKAGE NAME	PIN PLATING	TYPE CODE	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
VCUT0714A02V	SOD-523	e3	N	1.32 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	Peak temperature max. 260 °C

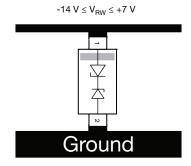
ABSOLUTE MAXIMUM RATINGS							
PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT			
Peak pulse current	Pin 1 to pin 2 Acc. IEC 61000-4-5, 8/20 µs/single shot		4.6	А			
	Pin 2 to pin 1 Acc. IEC 61000-4-5, 8/20 μs/single shot	— Іррм	2.7	А			
Peak pulse power	Acc. IEC 61000-4-5, 8/20 μs/single shot	P _{PP}	70	W			
ESD immunity	Contact discharge acc. IEC 61000-4-2; 10 pulses	V	± 25	kV			
	Air discharge acc. IEC 61000-4-2; 10 pulses	V _{ESD}	± 30	kV			
Operating temperature	Junction temperature	TJ	-55 to +150	°C			
Storage temperature		T _{STG}	-55 to +150	°C			



CUT THE SPIKES WITH VCUT0714A02V

The VCUT0714A02V is a bidirectional but asymmetrical (BiAs) ESD-protection device which clamps positive and negative overvoltage transients to ground. Connected between the signal or data line and the ground the VCUT0714A02V offers a high isolation (low leakage current, small capacitance) within the specified working range of -7 V to +14 V or -14 V and +7 V. Due to the short leads and small package size of the small SOD-523 package the line inductance is very low, so that fast transients like an ESD-strike can be clamped with minimal over- or undershoots.





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ELECTRICAL CHARACTERISTICS (pin 2 to pin 1) (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}	-	=-	14	V	
Reverse voltage	at I _R = 0.1 μA	V_R	14	-	-	V	
Reverse current	at V _{RWM} = 14 V	I _R	-	-	0.1	μA	
Reverse breakdown voltage	at I _R = 1 mA	V_{BR}	14.5	-	-	V	
Reverse clamping voltage	at I _{PP} = 1 A; t _p = 8/20 µs	V _C	-	-	27	V	
	at I _{PP} = I _{PPM} = 2.7 A; t _p = 8/20 μs	V _C	-	-	35	V	
Capacitance	at V _R = 0 V; f = 1 MHz	C _D	-	8	8.5	pF	
	at V _R = 7 V; f = 1 MHz	C _D	-	4	-	pF	

ELECTRICAL CHARACTERISTICS (pin 1 to pin 2) (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}	-	-	7	V		
Reverse voltage	at I _R = 0.1 μA	V_R	7	-	-	V		
Reverse current	at V _{RWM} = 7 V	I _R	-	-	0.1	μA		
Reverse breakdown voltage	at I _R = 1 mA	V_{BR}	7.3	-	-	V		
Reverse clamping voltage	at I _{PP} = 1 A; t _p = 8/20 μs	V _C	-	-	13	V		
	at I _{PP} = I _{PPM} = 4.6 A; t _p = 8/20 μs	V _C	-	-	19	V		
Capacitance	at V = 0 V; f = 1 MHz	C _D	-	8	8.5	pF		
	at V = 3.5 V; f = 1 MHz	C _D	-	6.4	-	pF		

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

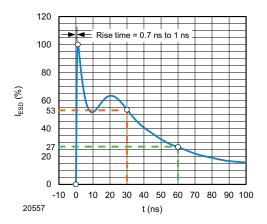


Fig. 1 - ESD Discharge Current Wave Form acc. IEC 61000-4-2 (330 Ω /150 pF)

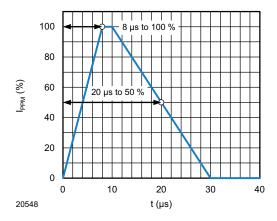


Fig. 2 - 8/20 µs Peak Pulse Current Wave Form acc. IEC 61000-4-5

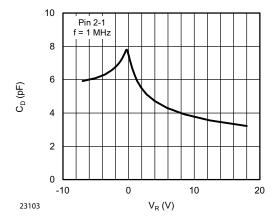


Fig. 3 - Typical Capacitance vs. Reverse Voltage

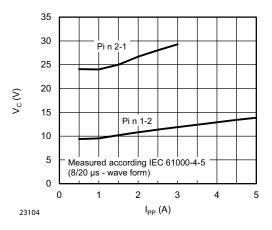


Fig. 4 - Typical Peak Clamping Voltage vs. Peak Pulse Current

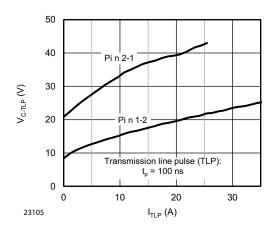


Fig. 5 - Typical Peak Clamping Voltage vs. Peak Pulse Current

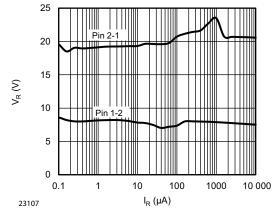
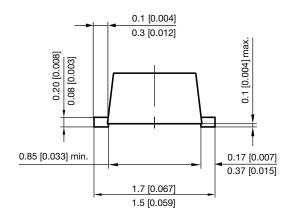


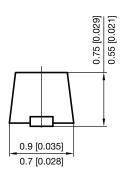
Fig. 6 - Typical Reverse Voltage vs. Reverse Current

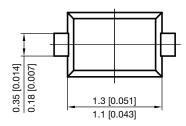
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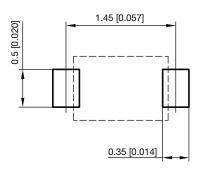
PACKAGE DIMENSIONS in millimeters [inches]: SOD-523







Footprint recommendation:

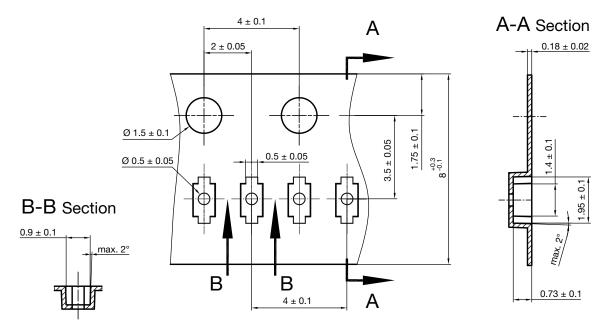


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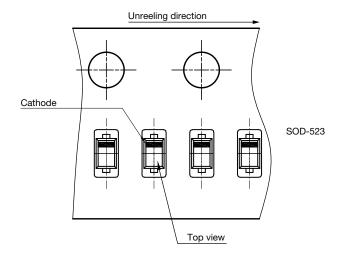


CARRIER TAPE SOD-523



S8-V-3717.03-005 (4) 05.07.2018 22959

ORIENTATION IN CARRIER TAPE SOD-523



\$8-V-3717.03-006 (4) 05.07.2018 22958



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