



DESD24VS2SO

24V CAN/LIN BUS PROTECTOR

Features

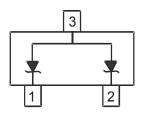
- Provides ESD Protection per IEC 61000-4-2 Standard:
 Air ±30kV, Contact ±30kV
- 230W Peak Power Dissipation
- Typically Used to Protect LIN and CAN Transceiver from ESD and other Harmful Transient Voltage Events
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)



Top View

Mechanical Data

- Case: SOT23
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 (3)
- Weight: 0.009 grams (Approximate)



Device Schematic

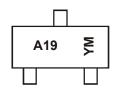
Ordering Information (Note 4)

Product	Compliance	Marking	Reel size(inches)	Tape width(mm)	Quantity per reel
DESD24VS2SO-7	AEC-Q101	A19	7	8	3,000/Tape & Reel

Notes:

- 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
- 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- 4. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information



A19 = Product Type Marking Code YM = Date Code Marking Y = Year (ex: A = 2013) M = Month (ex: 9 = September)

Date Code Kev

Year	2013	3	2014		2015	20	16	2017		2018	2	2019
Code	Α		В		С)	Е		F		G
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D



Maximum Ratings ($@T_A = +25^{\circ}C$, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P_{PP}	230	W	8/20µs, Per in Figure 3
Peak Pulse Current	I _{PP}	5	А	8/20µs, Per in Figure 3
ESD Protection – Contact Discharge	V _{ESD_Contact}	±30	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	V _{ESD_Air}	±30	kV	Standard IEC 61000-4-2
ESD Protection – Human Body Model	V _{ESD_HBM}	±16	kV	MIL-STD-883
Electrical Fast Transient Current	I _{EFT}	80	Α	Standard IEC 61000-4-4(EFT)

Thermal Characteristics

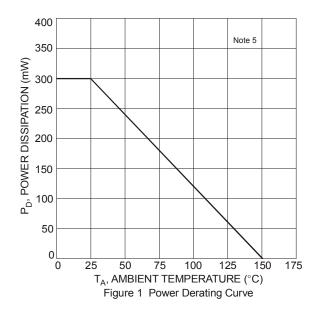
Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	P _D	300	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	417	°C/W
Operating Junction Temperature Range	T_J	-65 to +150	°C
Storage Temperature Range	T _{STG}	-65 to +150	°C

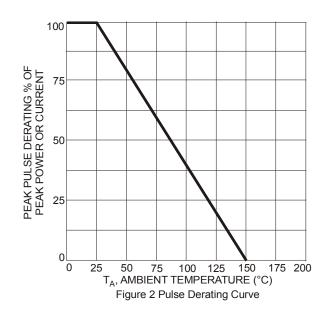
Electrical Characteristics (@TA = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Reverse Working Voltage	V_{RWM}	_	_	24	V	_
Breakdown Voltage	V_{BR}	26	_	32	V	I _R = 1.0mA
Reverse Leakage Current (Note 6)	I _R	_	_	10	nA	V _{RWM} = 24V
Clamping Valtage (Note 7)	VcL	_	_	34	V	$I_{PP} = 1A, t_p = 8/20 \mu s$
Clamping Voltage (Note 7)		_	_	41	V	$I_{PP} = 5A$, $t_p = 8/20 \mu s$
Differential Resistance	R _{DIF}	_	1	_	Ω	$I_R = 1.0A$, $t_p = 8/20\mu s$
Channel Input Canacitance	0	_	42	52	pF	V _{IN} = 0V, f = 1MHz, Pin 1 or Pin 2 to Pin 3
Channel Input Capacitance	C _T		21	28	pF	V _{IN} = 0V, f = 1MHz, between Pin 1 and Pin 2

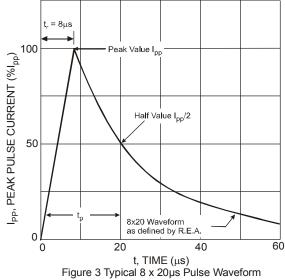
Notes:

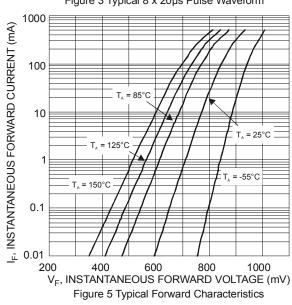
- 5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes, Inc. suggested pad layout AP02001, which can be found on our website at http://www.diodes.com.
- 6. Short duration pulse test used to minimize self-heating effect.
- 7. Measured from pin 1 or pin 2 to pin 3; Non-repetitive current pulse per Figure 1.











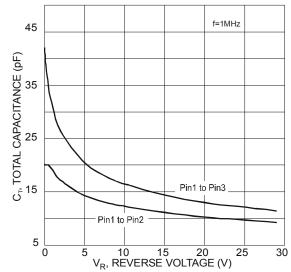
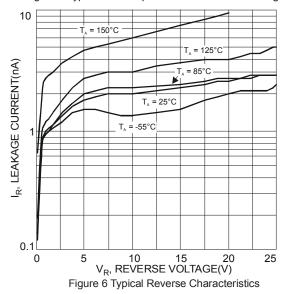
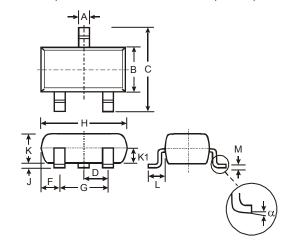


Figure 4 Typical Total Capacitance vs. Reverse Voltage



Package Outline Dimensions

Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.

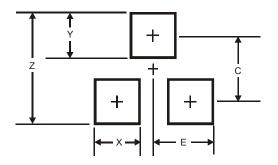


SOT23								
Dim	Min	Max	Тур					
Α	0.37	0.51	0.40					
В	1.20	1.40	1.30					
C	2.30	2.50	2.40					
D	0.89	1.03	0.915					
F	0.45	0.60	0.535					
G	1.78	2.05	1.83					
Η	2.80	3.00	2.90					
J	0.013	0.10	0.05					
K	0.903	1.10	1.00					
K1	-	-	0.400					
L	0.45	0.61	0.55					
М	0.085	0.18	0.11					
α	0°	8°	-					
All	All Dimensions in mm							



Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
Z	2.9
Х	0.8
Y	0.9
С	2.0
E	1.35

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