

Transient voltage suppressors

Description

The ESDA6V1L is a dual monolithic voltage suppressor designed to protect components which are connected to data and transmission lines against ESD.

It clamps the voltage just above the logic level supply for positive transients, and to a diode drop below ground for negative transients. It can also work as bidirectional suppressor by connecting only pin1 and pin2.



- 1. Dual transil array for ESD protection
- 2. 2 unidirectional transil functions
- 3. Low leakage current: I_{Rmax} <20 µA at V_{BR}
- 4. 300W peak pulse power (8/20 µs)



T -25℃

Where transient overvoltage protection in ESD sensitive equipment is required, such as: Computers, Communication systems...

Absolute Maximum Ratings

Parameter	Test Conditions	Symbol	Value	Unit	
Electrostatic discharge	MIL STD 883C-Method 3015-6		25		
	IEC61000-4-2 air discharge	V_{PP}	16	KV	
	IEC61000-4-2 contact discharge		9		
Peak pulse power	8/20µs	P _{PP}	300	W	
Junction temperature		Tj	150	°C	
Storage temperature range		T _{stg}	-55~+150	°C	
Maximum lead temperature	For soldering during 10s	TL	260	°C	
Operating temperature range		T _{op}	-40~+125	°C	

Stresses exceeding maximum ratings may damage the device. Maximum ratings are stress ratings only. Functional operation above the recommended operating conditions is not implied. Extended exposure to stresses above the recommended operating conditions may affect device reliability.

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Functional diagram





Electrical Characteristics

T_a=25℃

Symbol	Parameter		
V_{RM}	Stand-off voltage		
V_{BR}	Breakdown voltage		
V _{CL}	Clamping voltage		
I _{RM}	Leakage current		
I _{PP}	Peak pulse current		
αТ	Voltage temperature coefficient		
С	Capacitance		
R _d	Dynamic resistance		
V _F	Forward voltage drop		



Parameter	Test Conditions	Symbol	Min	Тур	Max	Unit
Breakdown voltage	I _R =1.0mA	V_{BR}	6.1	6.65	7.2	V
Leakage current	V _{RM} =5.25V	I _{RM}	-	-	20	μA
Capacitance	0V bias	С	-	140	-	pF
Forward voltage drop	I _F =200mA	V _F	-	-	1.25	V

Characteristics (T_j =25°C unless otherwise specified)







Fig.2: Peak pulse power vs. exponential pulse duration $(T_j \text{ initial} = 25 \degree C)$









Fig.5: Relative variation of leakage current vs. junction Temperature (typical values)



Fig.4: Capacitance vs. reverse applied voltage (typical values)



Fig.6: Peak forward voltage drop vs. peak forward Current (typical values)

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Dimensions





SOT-23 Footprint

	INCHES		MILLIMETERS		
DIM	MIN	MAX	MIN	MAX	
Α	0.1102	0.1197	2.80	3.04	
в	0.0472	0.0551	1.20	1.40	
С	0.0350	0.0440	0.89	1.11	
D	0.0150	0.0200	0.37	0.50	
G	0.0701	0.0807	1.78	2.04	
Н	0.0005	0.0040	0.013	0.100	
J	0.0034	0.0070	0.085	0.177	
K	0.0180	0.0236	0.45	0.60	
L	0.0350	0.0401	0.89	1.02	
S	0.0830	0.0984	2.10	2.50	
V	0.0177	0.0236	0.45	0.60	

Notes:

- 1. Dimensioning and tolerance per ANSI Y14.5M, 1982.
- 2. Controlling dimension: inch.
- Maximum lead thickness includes lead finish thickness. Minimum lead thickness is the minimum thickness of base material.

Marking

