Elektronische Bauelemente

ESDA05CL

50W, 5V
Transient Voltage Suppressors
for ESD Protection (Bi-direction)

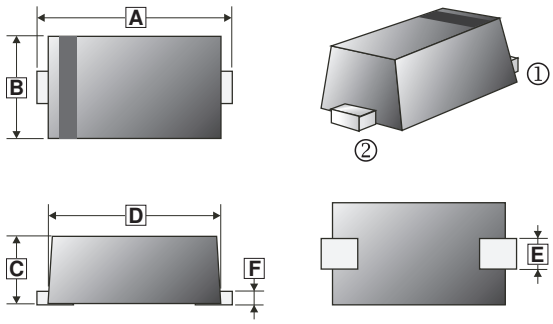
RoHS Compliant Product
A suffix of "-C" specifies halogen and lead-free

DESCRIPTION

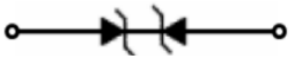
Designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

The combination of small size, low capacitance, and high level of ESD protection makes them a flexible solution for applications such as HDMI, Display Port TM, and MDDI interfaces. It is designed to replace multiplayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

SOD-523



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.50	1.70	D	1.10	1.30
B	0.70	0.90	E	0.25	0.35
C	0.50	0.77	F	0.07	0.20



FEATURES

- Bi-directional ESD protection of one line
- Low capacitance: 12pF(Typ.)
- Low reverse stand−off voltage: 5.0V
- Low reverse clamping voltage
- Low leakage current
- Excellent package:1.2mm×0.8mm×0.6mm
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection

MARKING

ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter		Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	Air Model	V_{ESD}[1]	±25	KV
	Contact Model		±25	
JESD22-A114-B ESD Voltage	Per Human Body Model		±16	
ESD Voltage	Machine Model		±0.4	
Peak Pulse Power		P_{PP}[2]	50	W
peak pulse current		I_{PP}[2]	5	A
Lead Solder Temperature − Maximum (10 Second Duration)		T_L	260	°C
Junction Temperature		T_J	150	°C
Storage Temperature Range		T_{STG}	-55 ~ +150	°C

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ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse stand off voltage	V_{RWM}	-	-	5	V	
Reverse leakage current	I_R	-	-	0.1	μA	V_{RWM}=5V
Breakdown voltage	$V_{(BR)}$	5.8	-	8.3	V	I_T=1mA
Clamping voltage	V_C[2]	-	-	10	V	I_{PP}=5A
Junction capacitance	C_J	-	12	15	pF	V_R=0V,f=1MHz

. Note:
1. Device stressed with ten non-repetitive ESD pulses.
2. Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.

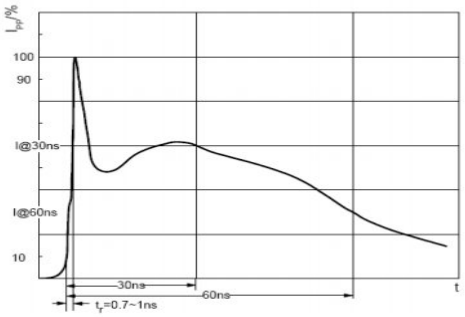
ESD standards compliance

IEC61000-4-2 Standard

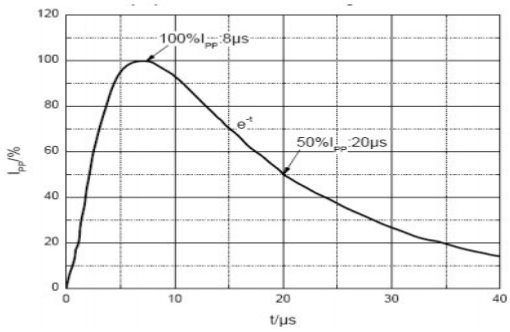
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

JESD22-A114-B Standard

ESD Class	Human Body Discharge V
0	0～249
1A 1B 1C	250～499 500～999 1000～1999
2	2000～3999
3A 3B	4000～7999 8000～15999



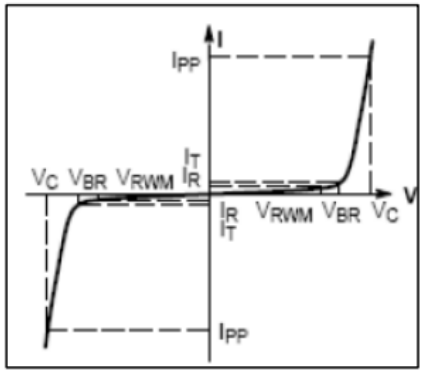
ESD pulse waveform according to IEC61000-4-2



8/20μs pulse waveform according to IEC 61000-4-5

ELECTRICAL PARAMETER

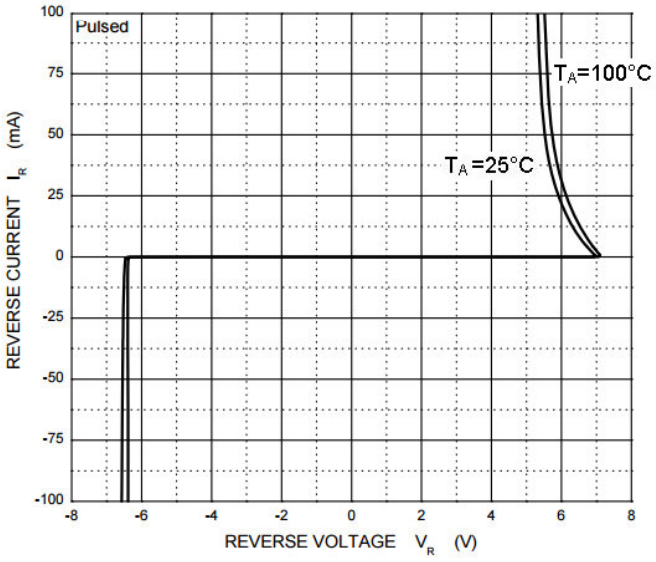
Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage



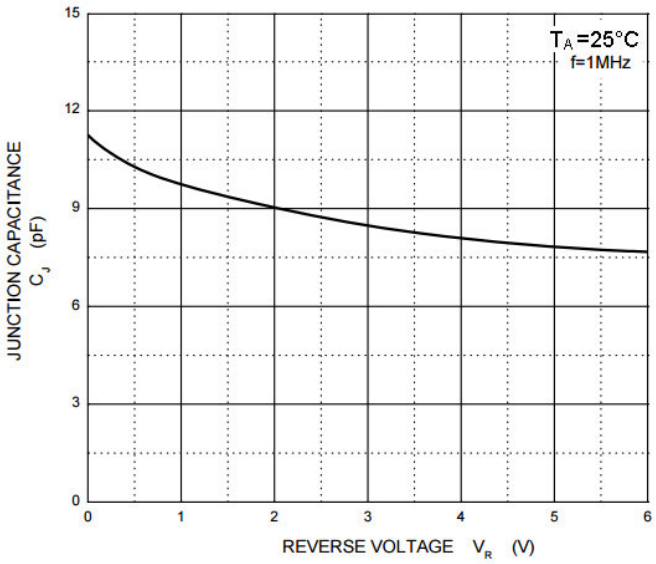
V-I characteristics for a Bi-directional TVS

RATINGS AND CHARACTERISTICS CURVES

Reverse Characteristics



Capacitance Characteristics



V_C —— I_{PP}