

### 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.

### FEATURES

Bi-directional ESD protection of one line

Low capacitance: 1 pF

Low reverse stand-off voltage: 5 V

Low reverse clamping voltage

Low leakage current

-S prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.

Excellent package: 1.7mm × 1.3mm × 1.0mm

Fast response time

JESD22-A114-B ESD Rating of class 3B per human body model

IEC 61000-4-2 Level 4 ESD protection

### APPLICATIONS

Cellular phones

Audio and video equipment

Handheld-Wireless Systems

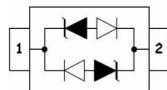
PDA's

Ethernet – 10/100/1000 Base

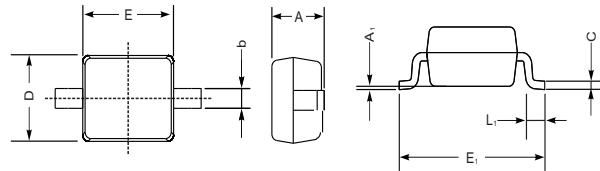
Portable electronics

USB Interface

Other electronics equipments communication systems



### SOD323



UNIT		A	C	D	E	E <sub>1</sub>	b	L <sub>1</sub>	A <sub>1</sub>
mm	max	1.1	0.15	1.4	1.8	2.75	0.4	0.45	0.2
	min	0.8	0.08	1.2	1.4	2.55	0.25	0.2	—
mil	max	43	5.9	55	70	108	16	16	8
	min	32	3.1	47	63	100	9.8	7.9	—

### MAXIMUM RATINGS ( T<sub>a</sub>=25°C unless otherwise noted )

Symbol	Parameter	Value	Units
V <sub>ESD</sub>	ESD per IEC 61000-4-2 (Air)	±30	kV
	ESD per IEC 61000-4-2 (Contact)	±30	
P <sub>PP</sub>	Peak Pulse Power (8/20μs)	350	W
T <sub>OPT</sub>	Operating Temperature	-55/+150	°C
T <sub>STG</sub>	Storage Temperature	-55/+150	°C
T <sub>L</sub>	Lead Soldering Temperature	260	°C

# UDD32C05L01

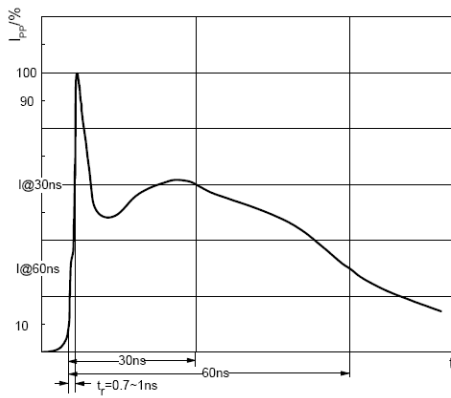
## ESD standards compliance

### IEC61000-4-2 Standard

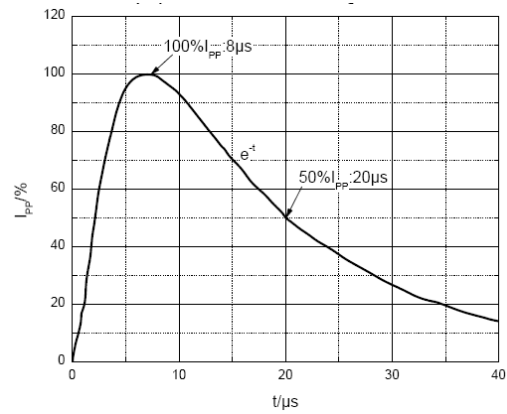
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

### JESD22-A114-B Standard

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



ESD pulse waveform according to IEC61000-4-2

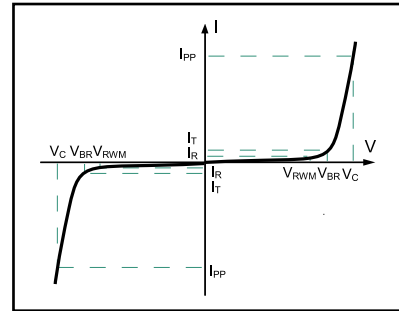


8/20µs pulse waveform according to IEC 61000-4-5

# UDD32C05L01

## 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

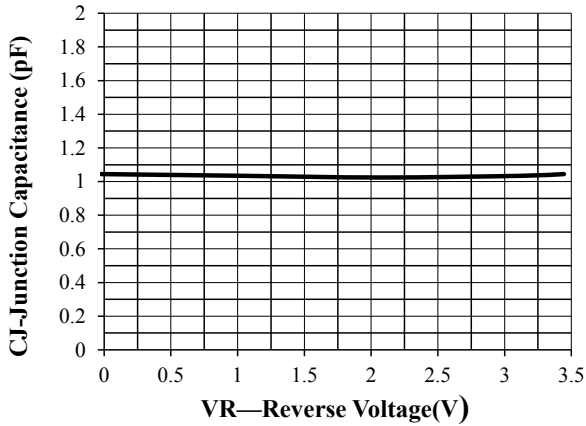


V-I characteristics for a Bi-directional TVS

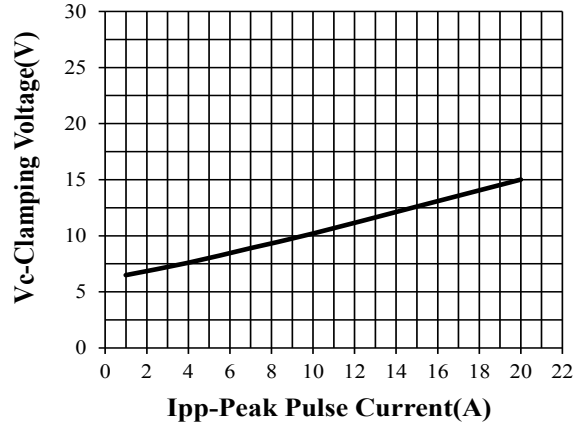
## ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	$V_{RWM}$				5	V
Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	6.0	7.0	9	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5\text{V}$			0.1	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 1\text{A}$ (8 x 20 $\mu\text{s}$ pulse)		8.5	9.8	V
Clamping Voltage	$V_C$	$I_{PP} = 20\text{A}$ (8 x 20 $\mu\text{s}$ pulse)		15	20	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		0.6		pF

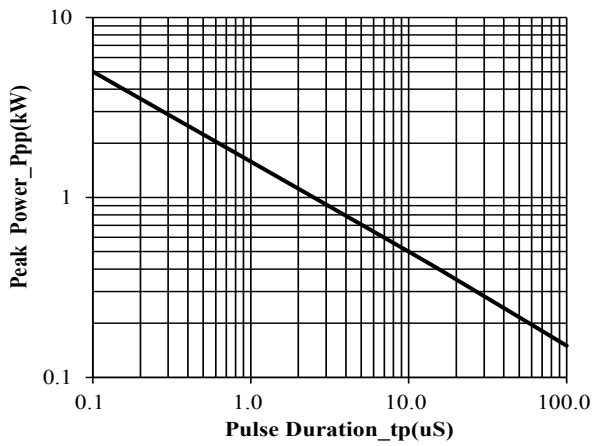
RATING AND CHARACTERISTIC CURVES (UDD32C05L01)



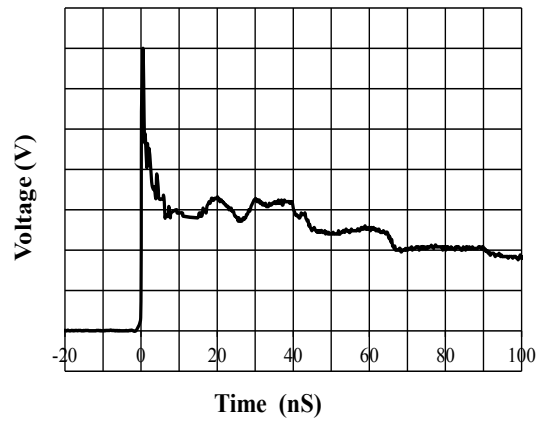
Junction Capacitance vs. Reverse Voltage



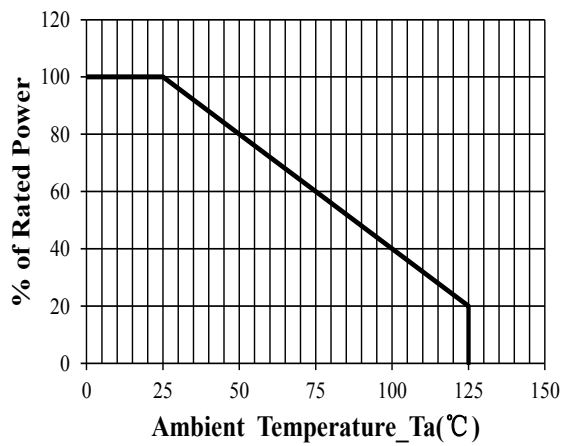
Clamping Voltage vs. Peak Pulse Current



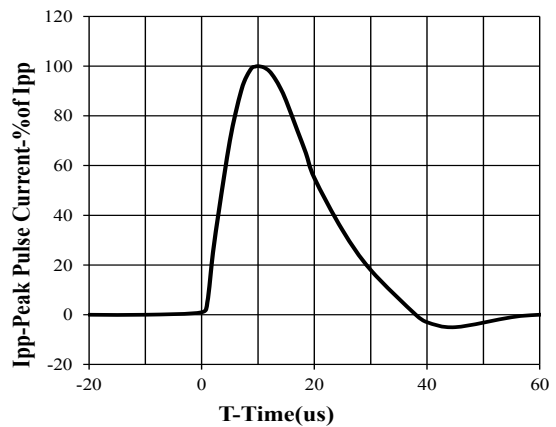
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



Power Derating Curve



8 X 20us Pulse Waveform