

RoHS Compliant Product  
A suffix of "-C" specifies halogen & 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 multilayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

## FEATURES

- Low leakage current
- Low reverse clamping voltage
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 3 ESD protection

## MARKING



Front side

## PACKAGE INFORMATION

Package	MPQ	Leader Size
DFNWB0603B	10K	7 inch

## RDER INFORMATION

Part Number	Type
SUESDB05C-C	Lead (Pb)-free and Halogen-free

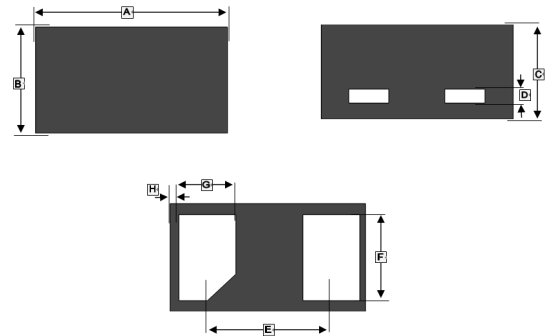
## MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted.)

Parameter		Symbol	Rating	Unit	
IEC 61000-4-2 ESD Voltage <sup>1</sup>	Air	V <sub>ESD</sub>	±15	kV	
	Contact		±15		
	JESD22-A114-B ESD Voltage <sup>1</sup>		Per Human Body Model		±16
	ESD Voltage <sup>1</sup>		Per Machine Model		±0.4
Peak Pulsed Power <sup>2</sup>		P <sub>PP</sub>	80	W	
Peak Pulsed Current <sup>2</sup>		I <sub>PP</sub>	4	A	
Maximum Lead Solder Temperature @ 10-second duration		T <sub>L</sub>	260	°C	
Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>STG</sub>	150, -55~150	°C	

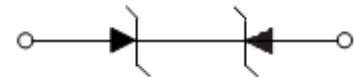
Notes:

1. The device is stressed with 10 non-repetitive ESD pulses.
2. According to IEC61000-4-5, the waveform of the non-repetitive 8/20µs pulsed current decays by exponents.

## DFNWB0603B

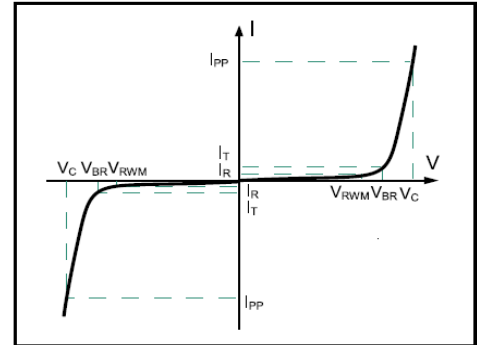


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	0.58	0.64	E	0.36	REF.
B	0.28	0.34	F	0.20	0.26
C	0.28	0.34	G	0.13	0.19
D	0.05 REF.		H	0.001 REF.	



**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 noted.)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Working Peak Reverse Voltage	$V_{RWM}$	-	-	5	V
Reverse Leakage Current @ $V_{RWM}=5\text{V}$	$I_R$	-	-	0.5	$\mu\text{A}$
Breakdown Voltage @ $I_T=1\text{mA}$	$V_{BR}$	6.5	-	9	V
Clamping Voltage @ $I_{PP}=4\text{A}$ <sup>1</sup>	$V_C$	-	20	25	V
Junction Capacitance @ $V_R=0\text{V}$ , $f=1\text{MHz}$	$C_J$	-	0.24	0.3	pF

Note:

1. According to IEC61000-4-5, the waveform of the non-repetitive 8/20 $\mu\text{s}$  pulsed current decays by exponents.

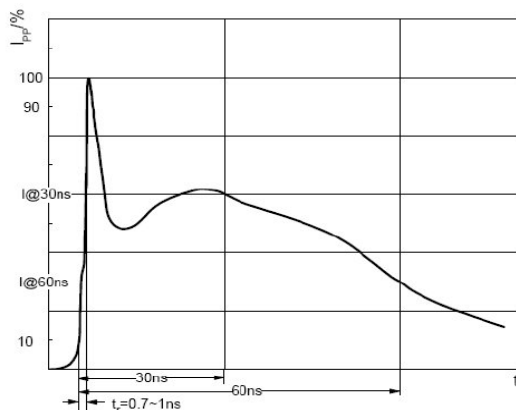
**ESD STANDARDS COMPLIANCE**

**IEC61000-4-2 Standard**

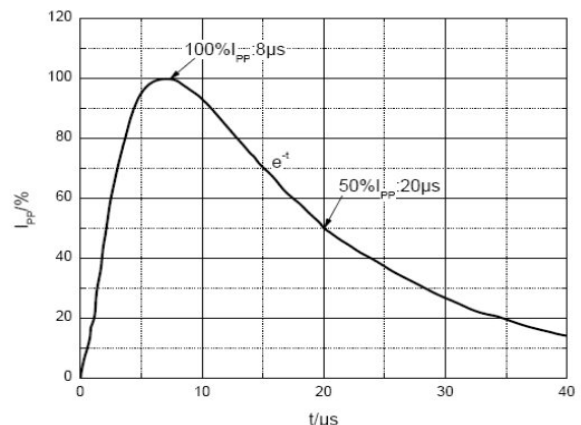
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

**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



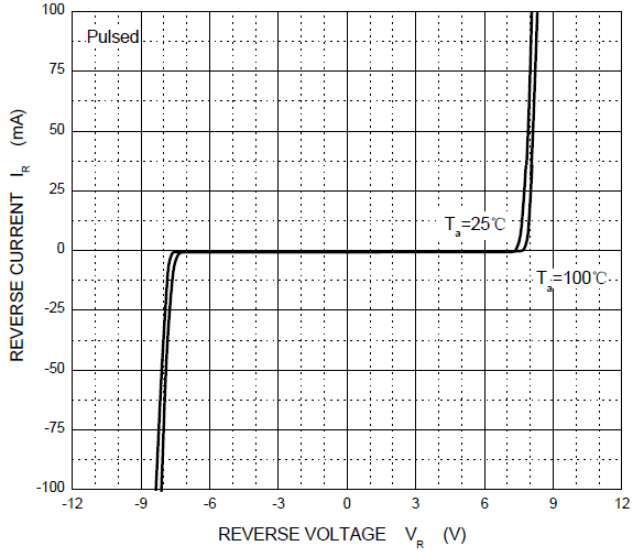
ESD pulse waveform according to IEC61000-4-2



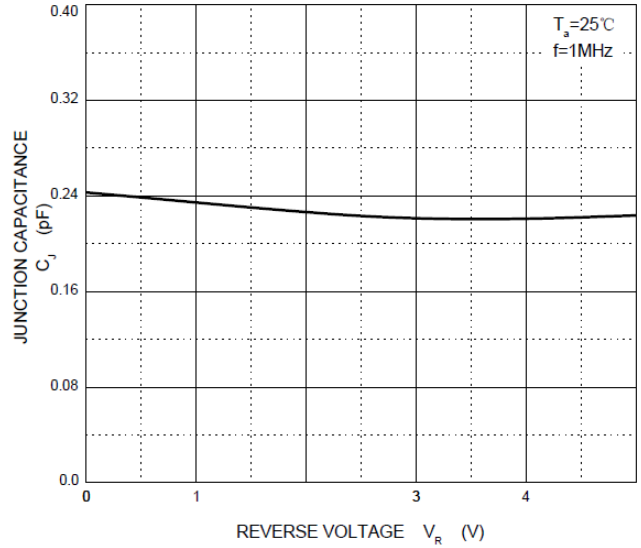
8/20 $\mu\text{s}$  pulse waveform according to IEC 61000-4-5

**CHARACTERISTICS CURVES**

Reverse Characteristics



Capacitance Characteristics



$V_C$  —  $I_{PP}$

