



ESDB...ADB Transient Voltage Suppressor

Descriptions

The ESDU...ADB series of TVS are Bi-directional transient voltage suppressor (TVS) to protect sensitive electronic components from electrostatic discharge (ESD). It is particularly well-suited for cellular phones, PMP, MID, PDA, digital cameras and other electronic equipment.

The ESDU...ADB series of TVS are available in DFN1x0.6-2L package. Standard products are Pb-free and Halogen-free.

Features

- Small Body Outline Dimensions
- Low reverse stand-off voltage: 3.3V, 5.0V, 7V
- Ultra Low capacitance
- Low leakage current
- Transient protection for each line according to IEC61000-4-2 (ESD): ±30kV (contact discharge)

Applications

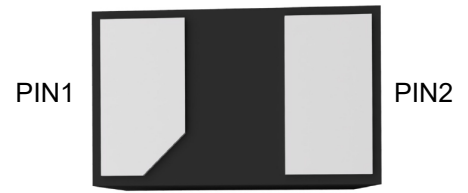
- Display Ports
- MDDI Ports
- Cellular Handsets and Accessories
- Computer and Peripherals

Marking Code

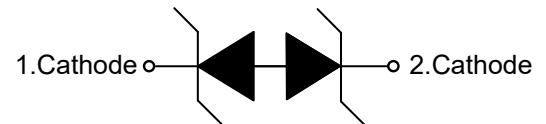


Top View

DFN1x0.6-2L



Bottom View



Device	ESDB3V3ADB	ESDB5V0ADB	ESDB7V0ADB
Marking Code	B33	B5A	B7A

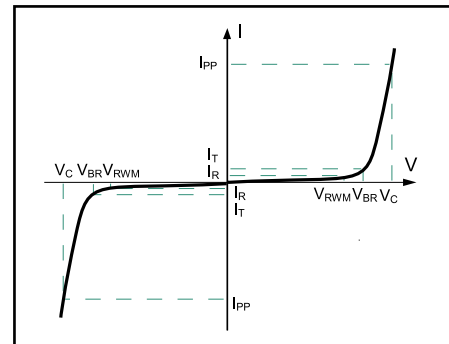


Absolute Maximum Ratings ($T_A=25^\circ\text{C}$)

Parameter		Symbols	Value	Unit
IEC61000-4-2 ESD Voltage	Air Model	V_{ESD}	± 30	KV
	Contact Model		± 30	
Junction Temperature		T_J	125	$^\circ\text{C}$
Operating Temperature Range		T_{OPR}	-40 to +85	$^\circ\text{C}$
Storage Temperature Range		T_{STG}	-50 to +150	$^\circ\text{C}$

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 ($T_A=25^\circ\text{C}$)

ESDB3V3ADB					
Parameter	Symbols	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}	--	--	3.3	V
Reverse Leakage Current at $V_{RWM} = \pm 3.3\text{ V}$	I_R	--	--	0.1	μA
Breakdown Voltage at $I_T = 1\text{ mA}$	$V_{R(BR)}$	5	--	6.5	V
Peak Pulse Power Dissipation $t_p = 8/20\mu\text{s}$	P_{PP}	--	--	48	W
Peak Pulse Current $t_p = 8/20\mu\text{s}$	I_{PP}	--	--	6	A
Clamping Voltage at $I_{PP} = 1\text{ A}$, $t_p=8/20\mu\text{s}$ at $I_{PP} = 6\text{ A}$, $t_p=8/20\mu\text{s}$	V_C	--	--	7 10	V
Junction Capacitance at $V_R = 0\text{ V}$, $f = 1\text{ MHz}$	C_J	--	12	16	pF



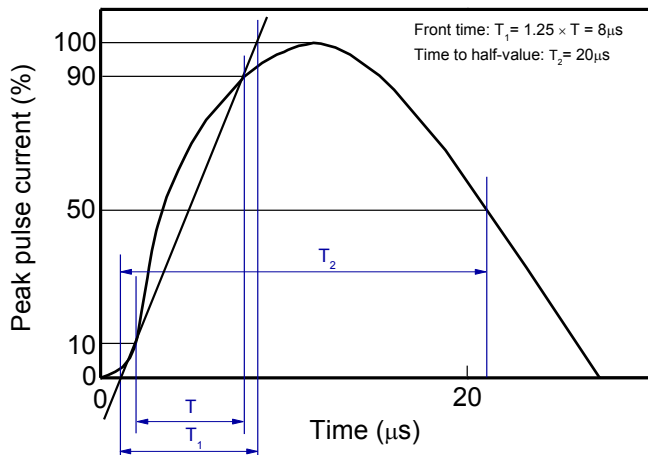
ESDB...ADB

Transient Voltage Suppressor

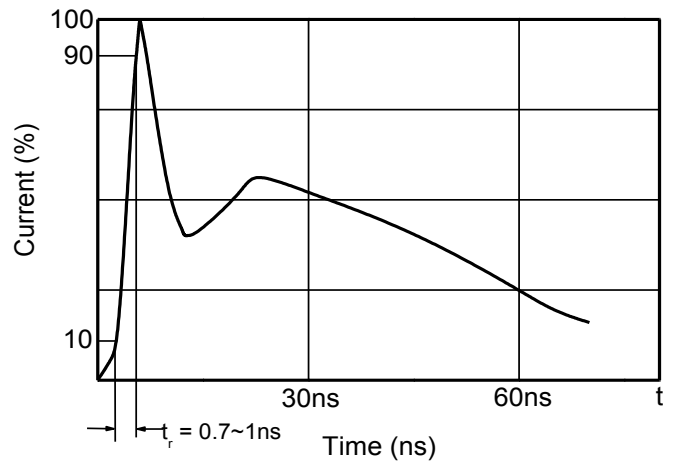
ESDB5V0ADB					
Parameter	Symbols	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}	--	--	5	V
Reverse Leakage Current at $V_{RWM} = \pm 5$ V	I_R	--	--	0.1	μ A
Breakdown Voltage at $I_T = 1$ mA	$V_{R(BR)}$	5.8	--	8	V
Peak Pulse Power Dissipation $t_p = 8/20\mu$ s	P_{PP}	--	--	100	W
Peak Pulse Current $t_p = 8/20\mu$ s	I_{PP}	--	--	8	A
Clamping Voltage at $I_{PP} = 1$ A, $t_p=8/20\mu$ s at $I_{PP} = 8$ A, $t_p=8/20\mu$ s	V_C	-- --	-- --	9.5 15	V
Junction Capacitance at $V_R = 0$ V, $f = 1$ MHz	C_J	--	12	15	pF

ESDB7V0ADB					
Parameter	Symbols	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}	--	--	7	V
Reverse Leakage Current at $V_{RWM} = \pm 7$ V	I_R	--	--	0.2	μ A
Breakdown Voltage at $I_T = 1$ mA	$V_{R(BR)}$	7.6	--	9	V
Peak Pulse Power Dissipation $t_p = 8/20\mu$ s	P_{PP}	--	--	72	W
Peak Pulse Current $t_p = 8/20\mu$ s	I_{PP}	--	--	6	A
Clamping Voltage at $I_{PP} = 1$ A, $t_p=8/20\mu$ s at $I_{PP} = 6$ A, $t_p=8/20\mu$ s	V_C	-- --	9 12	12 16	V
Junction Capacitance at $V_R = 0$ V, $f = 1$ MHz	C_J	--	15	16	pF

Typical Characteristic Curves



8/20 μs waveform per IEC61000-4-5



Contact discharge current waveform per IEC61000-4-2

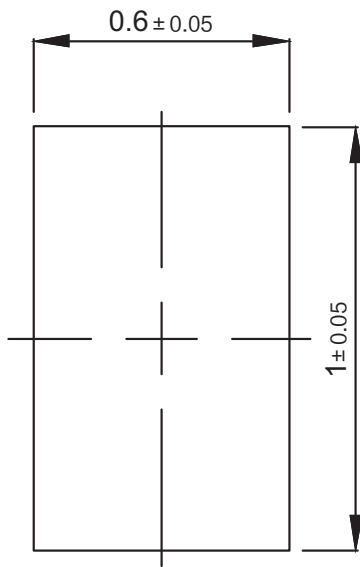


ESDB...ADB Transient Voltage Suppressor

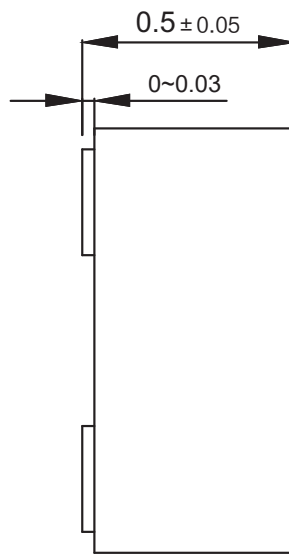
Package Outline

DFN1x0.6-2L-0011

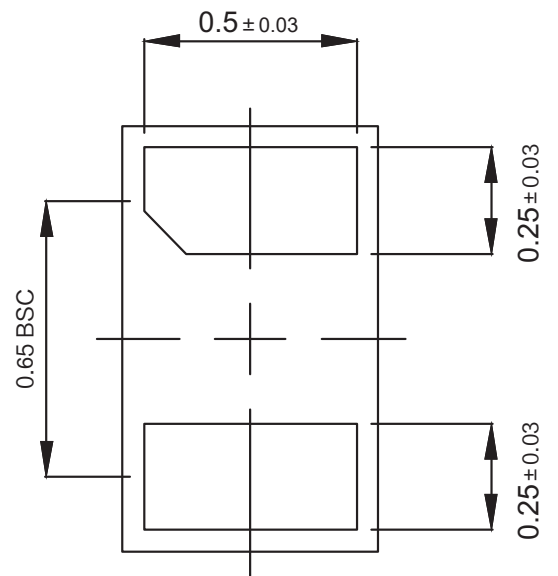
Dimensions in mm



TOP VIEW



SIDE VIEW



BOTTOM VIEW

Ordering Information

Device	Package	Shipping
ESDB...ADB	DFN1x0.6-2L	10,000PCS/Reel&7inches

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