1- Line Bidirectional ESD Protection Diode

General description

The PWESD-5VDDB is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The PWESD-5VDDB complies with the IEC 61000-4-2 (ESD) standard with ± 15kV air and ± 8kV contact discharge. It is assembled into an ultra-small 0.6x0.3x0.3mm lead-free 0201 package. The small size and high ESD surge protection make PWESD-5VDDB an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features and benefits

- Bidirectional ESD protection of one line
- Femtofarad capacitance: C_j = 10pF (Typ)
- Low clamping voltage V_C = 8 V@6.0A (Typ)
- Low leakage current: nA Level
- IEC 61000-4-2; level 4 (ESD)
- IEC 61000-4-5 (surge); I_{PPM} = 6.0A

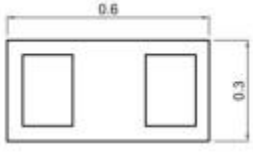
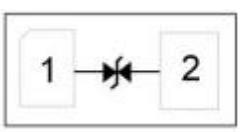
Application information

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Keypads, Side Keys, LCD Displays

Ordering information

Device	Package	Packaging	Reel Size
PWESD-5VDDB	DFN0603-2L	10000/Tape & Reel	7 Inch

Schematic & Pin configuration

Mimensions	Circuit Diagram
 (mm)	

Maximum Ratings

(T_A = 25 °C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (Tp = 8/20us)	P_{PPM}	54	W
Rated Peak Pulse Current (Tp = 8/20us)	I_{PPM}	6.0	A
Maximum lead temperature for soldering during 10s	T_L	260	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C
Operating Temperature Range	T_{OP}	-40 to +125	°C
ESD voltage IEC 61000-4-2 (air discharge)	V_{ESD}	15	kV
ESD voltage IEC 61000-4-2 (contact discharge)	V_{ESD}	8	kV

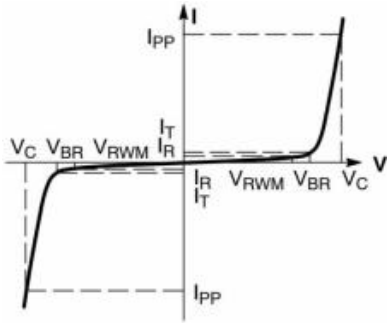
Electrical Characteristics

(T_A = 25 °C, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V_{RWM}	--	--	5.0	V	
Breakdown Voltage	V_{BR}	5.8	--	7.5	V	I_T=1mA
Leakage Current ILeak	I_R	--	--	100	nA	V_{RWM}=5V
Clamping Voltage	V_C	--	6	--	V	I_{PP}=1.0A,T_p=8/20μs
Clamping Voltage	V_C	--	8	9	V	I_{PP}=6.0A,T_p=8/20μs
Junction Capacitance	C_j	--	10	12	pF	V_R=0V, f=1MHz

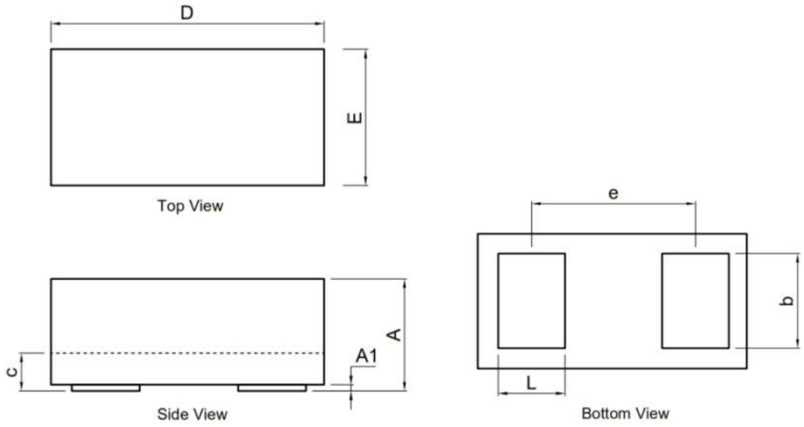
Portion Electronics Parameter

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



Package Outline Dimensions

DFN0603-2L



SYMBOL	Dimensions In Millimet	
	MIN	MAX
A	0.23	0.33
A1	0	0.05
b	0.21	0.28
c	0.05	0.18
D	0.55	0.65
E	0.25	0.35
L	0.15	0.23

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