



### DESCRIPTION

The JEB05VCDF is an ultra low capacitance transient voltage suppressor array, designed to protect computing applications from the damaging effects of electrostatic discharge and electrical fast transients.

### FEATURES

- ✧ Protects one bi-directional I/O line
- ✧ Low clamping voltage
- ✧ Low operating voltage: 5.0V
- ✧ Low leakage current
- ✧ Ultra low capacitance
- ✧ RoHS compliant

### MAIN APPLICATIONS

- ✧ USB ports
- ✧ Display port
- ✧ Desktops, servers and notebooks
- ✧ Digital visual interface (DVI)
- ✧ Cellular phones
- ✧ High definition multi-media interface (HDMI)

### PROTECTION SOLUTION TO MEET

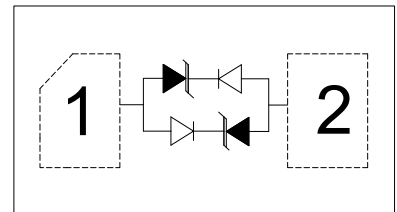
- ✧ IEC61000-4-2 (ESD)  $\pm 25\text{kV}$  (air),  $\pm 25\text{kV}$  (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 4A (8/20 $\mu\text{s}$ )

### MECHANICAL CHARACTERISTICS

- ✧ DFN1006-2L package
- ✧ Molding compound flammability rating : UL 94V-0
- ✧ Quantity per reel : 10,000pcs
- ✧ Lead finish : lead free
- ✧ Marking code: 5T



DFN1006-2L(Bottom view)



Pin Configuration(Top view)

**ABSOLUTE MAXIMUM RATINGS** ( $T_A=25^{\circ}\text{C}$ ,  $\text{RH}=45\%-75\%$ , unless otherwise noted)

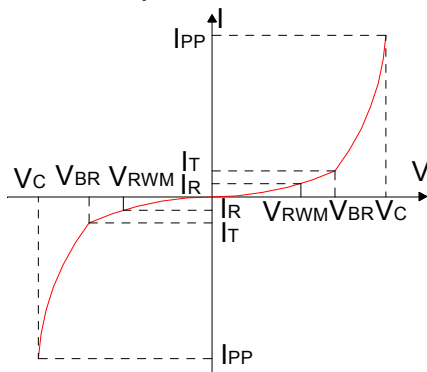
Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20 $\mu\text{s}$ waveform	$P_{PP}$	60	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD}$	+/- 25 +/- 25	kV
Lead soldering temperature	$T_L$	260 (10 sec.)	$^{\circ}\text{C}$
Operating junction temperature range	$T_J$	-55 to +125	$^{\circ}\text{C}$
Storage temperature range	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$

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

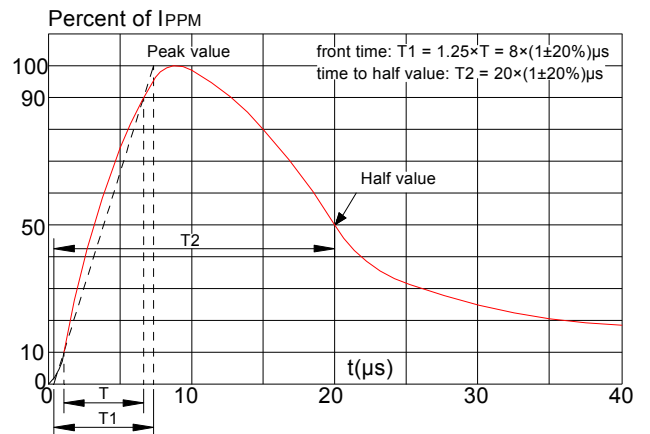
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	$V_{RWM}$				5.0	V
Reverse breakdown voltage	$V_{BR}$	$I_T=1\text{mA}$	6.0			V
Reverse leakage current	$I_R$	$V_{RWM}=5\text{V}$			0.1	$\mu\text{A}$
Peak pulse current	$I_{PP}$	$t_P=8/20\mu\text{s}$			4	A
Clamping voltage	$V_C$	$I_{PP}=1\text{A}$ , $t_P=8/20\mu\text{s}$		9.5	10.5	V
		$I_{PP}=3\text{A}$ , $t_P=8/20\mu\text{s}$		10	12.5	V
		$I_{PP}=4\text{A}$ , $t_P=8/20\mu\text{s}$		12.5	15	V
Junction capacitance	$C_J$	$V_{RWM}=0\text{V}$ , $f=1\text{MHz}$		0.35	0.55	pF

**RATINGS AND V-I CHARACTERISTICS CURVES** ( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

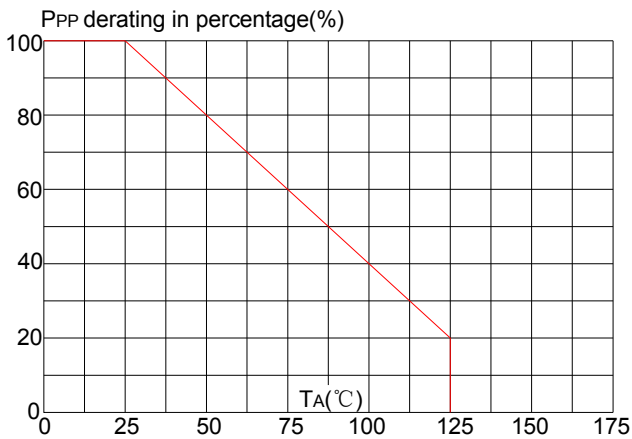
**FIG.1: V- I curve characteristics (Bi-directional)**



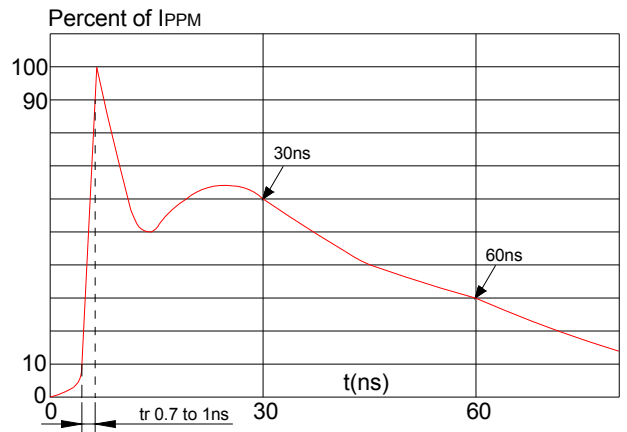
**FIG.2: Pulse waveform (8/20 $\mu\text{s}$ )**



**FIG.3: Pulse derating curve**

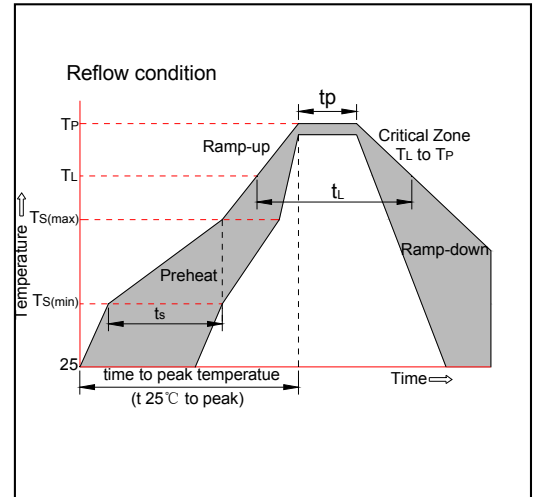


**FIG.4: ESD clamping (25kV contact)**

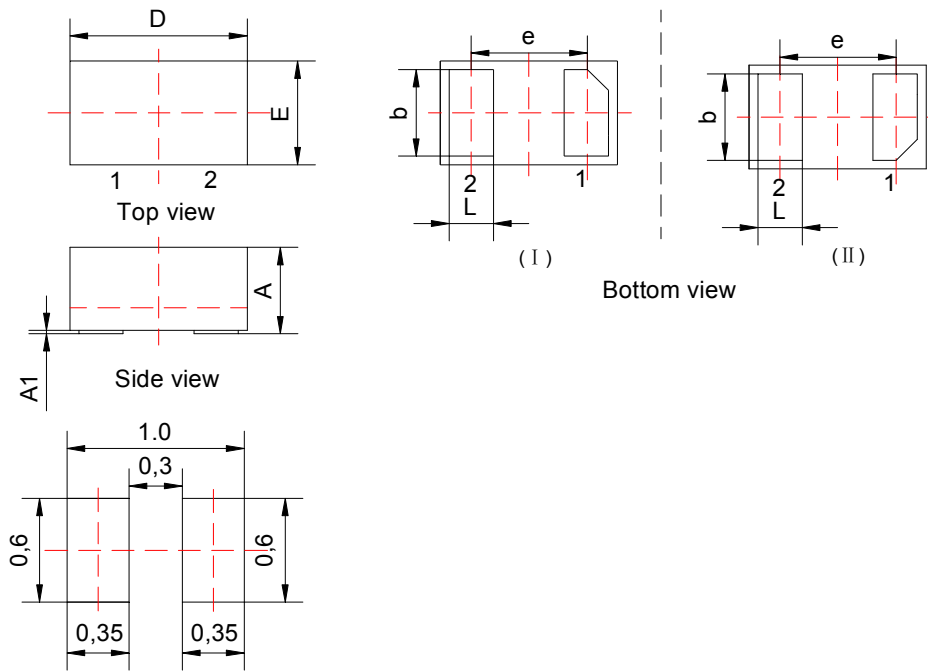


**SOLDERING PARAMETERS**

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min (T <sub>s(min)</sub> )	+150°C
	-Temperature Max(T <sub>s(max)</sub> )	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp (T <sub>L</sub> )to peak)		3°C/sec. Max
T <sub>s(max)</sub> to T <sub>L</sub> - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T <sub>L</sub> )(Liquidus)	+217°C
	-Temperature(t <sub>L</sub> )	60-150 secs.
Peak Temp (T <sub>p</sub> )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t <sub>p</sub> )		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T <sub>p</sub> )		8 min. Max
Do not exceed		+260°C



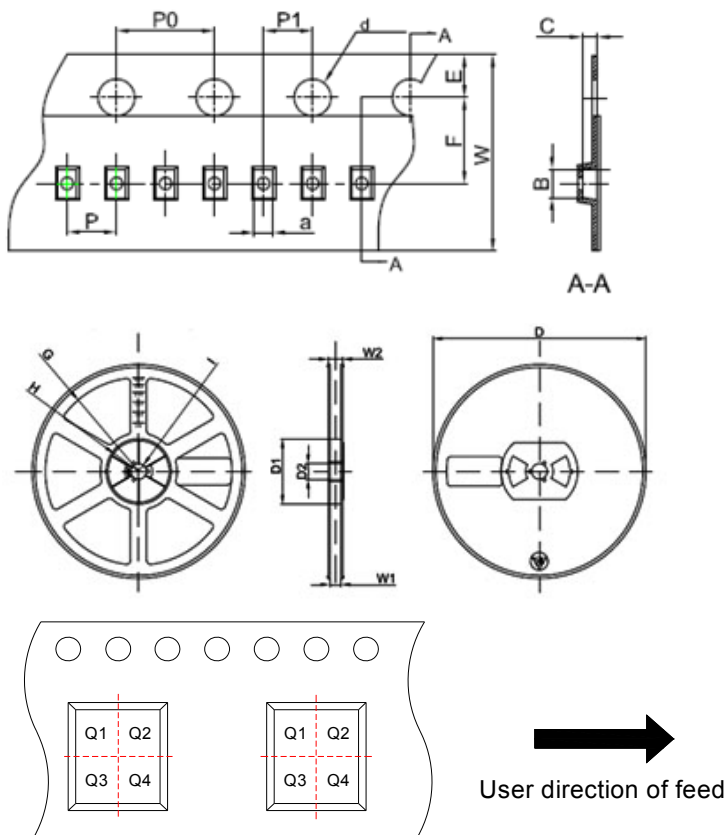
**PACKAGE MECHANICAL DATA**



Recommended soldering footprint(mm)

Symbol	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.40	0.50	0.55	0.016	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65BSC			0.026BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012

**TAPE AND REEL INFORMATION-DFN1006-2L**



Pin 1 quadrant:Q1&Q2

**Packaging Description:**

DFN1006-2L parts are shipped in tape. The carrier tape is made from a dissipative(carbon filled) polycarbonate resin. The cover tape is a multilayer film(heat activated adhesive in nature)primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 10,000units per 7" or 17.8cm diameter reel. The reels are clear in color and made of polystyrene plastic(anti-static coated).

Symbol	Millimeters	Inches
	Typ.	Typ.
a	0.66	0.026
B	1.15	0.045
C	0.66	0.026
d	Φ1.50	Φ0.059
E	1.75	0.069
F	3.50	0.138
P0	4.00	0.157
P	2.00	0.079
P1	2.00	0.079
W	8.00	0.315
D	Φ178	Φ7.008
D1	54.40	2.142
D2	13.00	0.512
G	R78.00	R3.071
H	R25.60	R1.008
I	R6.50	R0.256
W1	9.50	0.374
W2	12.30	0.484

**ORDERING INFORMATION**

PART No.	PACKAGE TYPE	QUANTITY(PCS) REEL	DESCRIPTION
JEB05VCDF	DFN1006-2L	10,000	7 inch reel pack

**MARKING CODE**

Part Number	Marking Code
JEB05VCDF	<div data-bbox="868 340 1102 490" style="border: 1px solid black; text-align: center; width: 100px; height: 100px; margin: auto;">5T</div>

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