



### DESCRIPTION

The JEB05LCDF-AU is an ultra low capacitance transient volt 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: 0.3pF(typ.)
- ✧ RoHS compliant
- ✧ AEC-Q101 qualified

### MAIN APPLICATIONS

- ✧ USB ports
- ✧ Display port
- ✧ Wireless communications
- ✧ Digital visual interface (DVI)
- ✧ Cellular handsets & accessories

### PROTECTION SOLUTION TO MEET

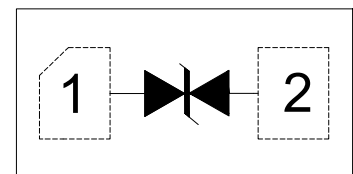
- ✧ IEC61000-4-2 (ESD)  $\pm 20\text{kV}$  (air),  $\pm 15\text{kV}$  (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 4.5A (8/20 $\mu\text{s}$ )

### MECHANICAL CHARACTERISTICS

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



DFN1006-2L (Bottom view)



Pin Configuration (Top view)

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

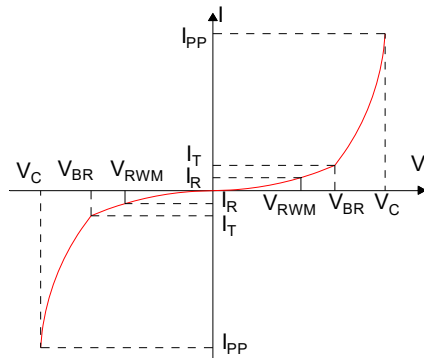
Parameter	Symbol	Value	Unit
Peak pulse power dissipation at 8/20 $\mu\text{s}$ waveform	$P_{PP}$	100	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD}$	+/- 20 +/- 15	kV
Lead soldering temperature	$T_L$	260 (10 sec.)	$^{\circ}\text{C}$
Operating junction temperature range	$T_J$	-55 to +150	$^{\circ}\text{C}$
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	$I_R$	$V_{RWM}=5\text{V}$			1.0	$\mu\text{A}$
Peak pulse current	$I_{PP}$	$t_p=8/20\mu\text{s}$			4.5	A
Clamping voltage	$V_C$	$I_{PP}=1\text{A}$ , $t_p=8/20\mu\text{s}$		10	12.5	V
		$I_{PP}=2.5\text{A}$ , $t_p=8/20\mu\text{s}$		15	18	V
		$I_{PP}=4.5\text{A}$ , $t_p=8/20\mu\text{s}$		25	30	V
Junction capacitance	$C_J$	$V_{RWM}=0\text{V}$ , $f=1\text{MHz}$		0.3	0.5	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 $\mu\text{s}$ )**

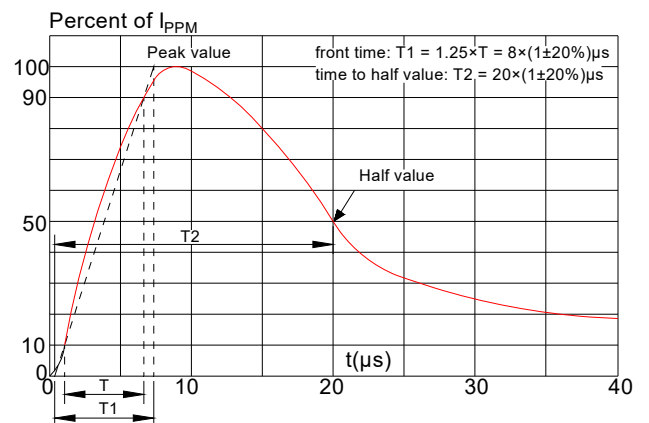


FIG.3: Pulse derating curve

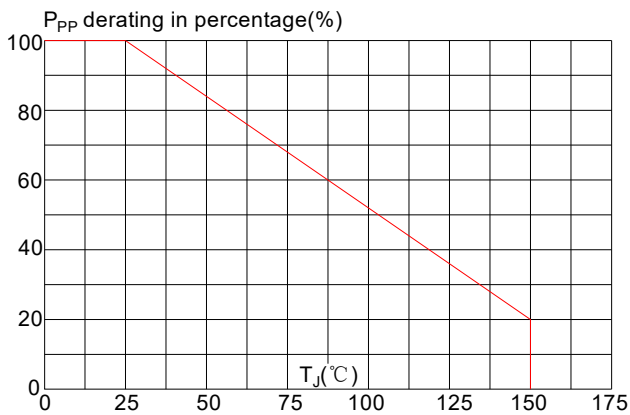


FIG.4: ESD clamping (15kV contact)

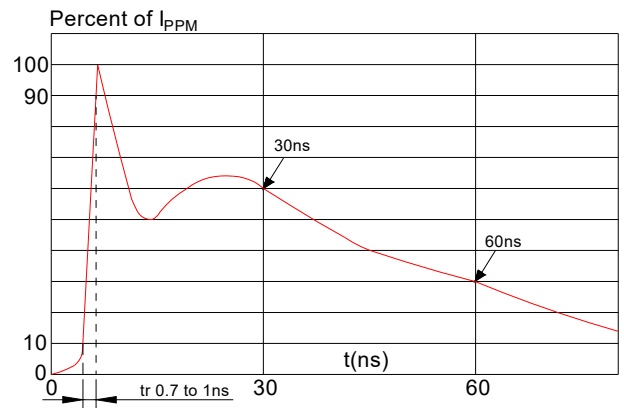


FIG.5: Capacitance vs. reverse voltage

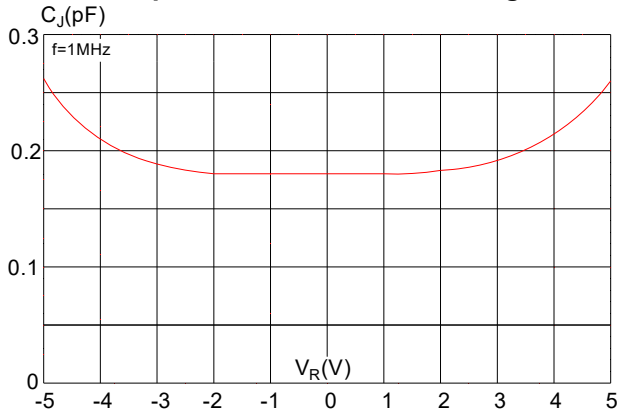
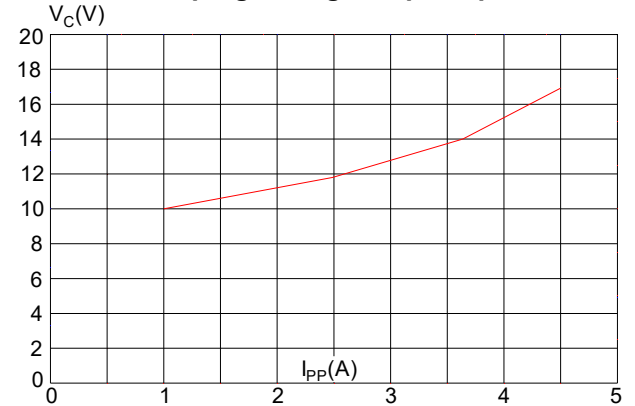
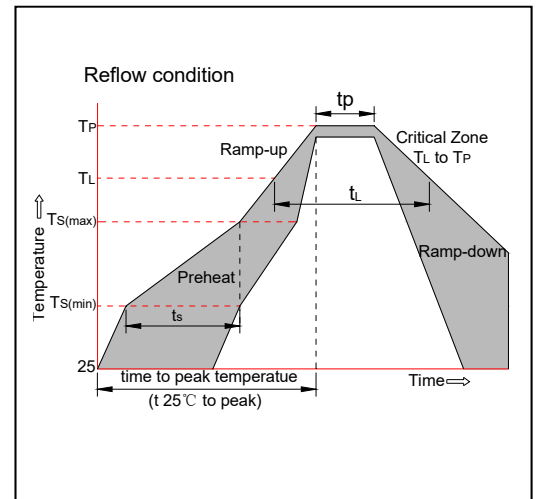


FIG.6: Clamping voltage vs. peak pulse current

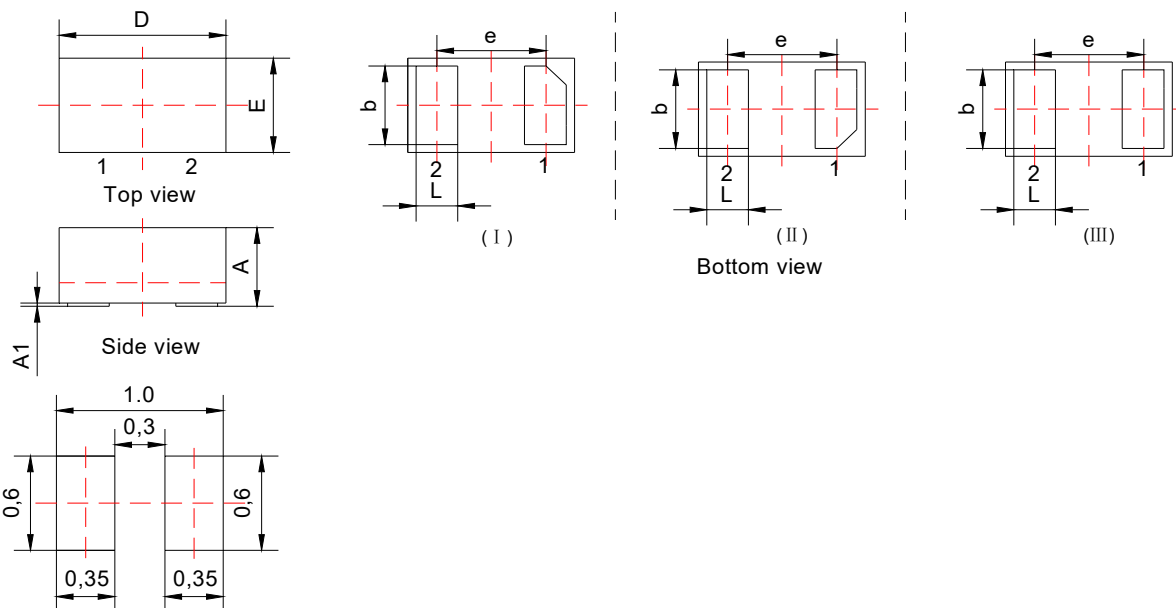


SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max ( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) ( $t_s$ )	60-180 secs.
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature ( $T_L$ ) (Liquidus)	+217°C
	-Temperature ( $t_L$ )	60-150 secs.
Peak Temp ( $T_P$ )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp ( $t_p$ )		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260°C



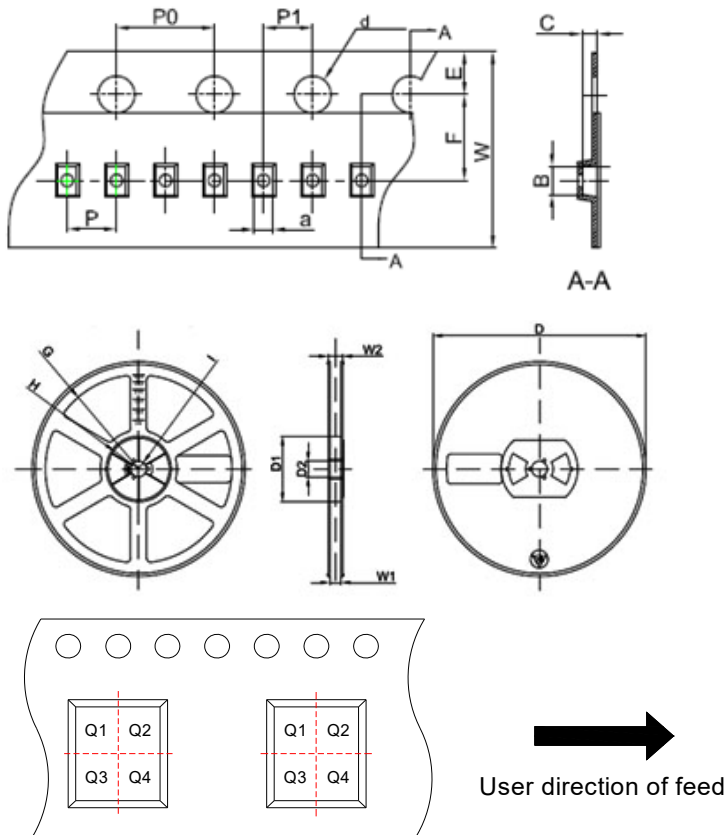
**PACKAGE MECHANICAL DATA**



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
JEB05LCDF-AU	DFN1006-2L	10,000	7 inch reel pack

**MARKING CODE**

Part Number	Marking Code
JEB05LCDF-AU	<div style="border: 1px solid black; width: 100px; height: 100px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> <span style="font-size: 24px; font-weight: bold;">5F</span> </div>


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