



### FEATURES

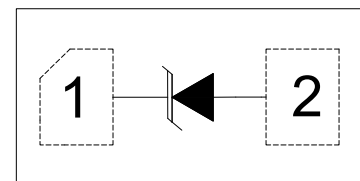
- ✧ Protects one line I/O or power line
- ✧ Low clamping voltage
- ✧ Low leakage current
- ✧ Ultra low capacitance: 25pF(max)
- ✧ RoHS compliant



DFN1006-2L(Bottom view)

### MAIN APPLICATIONS

- ✧ USB 2.0 power and data line protection
- ✧ High speed data line
- ✧ Lan equipment
- ✧ Digital visual interface (DVI)
- ✧ Video



Pin Configuration(Top view)

### PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD) ±22kV (air), ±22kV (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 4A (8/20µs)

### MECHANICAL CHARACTERISTICS

- ✧ DFN1006-2L package
- ✧ Molding compound flammability rating : UL 94V-0
- ✧ Quantity per reel : 10,000pcs
- ✧ Lead finish : lead free
- ✧ Marking code: 24

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, RH=45%-75%, unless otherwise noted)

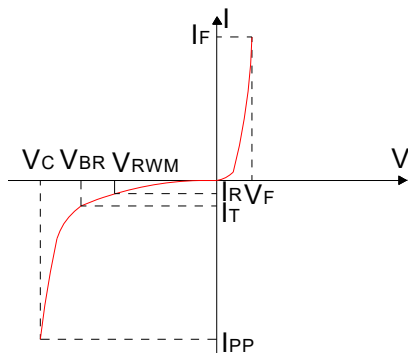
Parameter	Symbol	Value	Unit
Peak pulse power dissipation at 8/20µs waveform	P <sub>PP</sub>	100	W
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	+/- 22	kV
ESD per IEC 61000-4-2 (Contact)		+/- 22	
Lead soldering temperature	T <sub>L</sub>	260 (10 sec.)	°C
Operating junction temperature range	T <sub>J</sub>	-55 to +125	°C
Storage temperature range	T <sub>STG</sub>	-55 to +150	°C

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

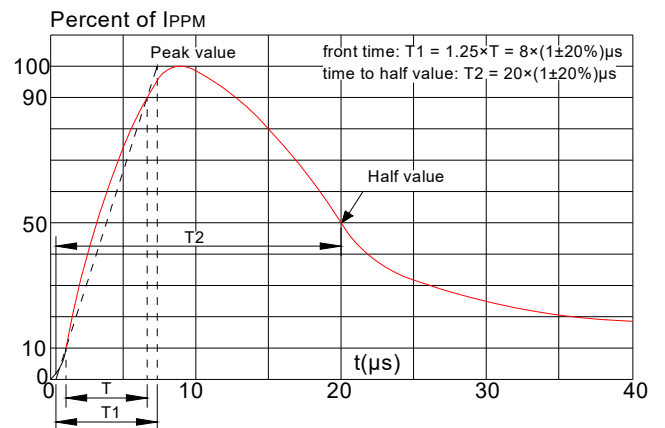
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	$V_{RWM}$				24.0	V
Reverse breakdown voltage	$V_{BR}$	$I_T=1\text{mA}$	26.5	28	31.5	V
Reverse leakage current	$I_R$	$V_{RWM}=24\text{V}$		0.01	0.1	$\mu\text{A}$
Forward voltage	$V_F$	$I_F=15\text{mA}$			1.1	V
Peak pulse current	$I_{PP}$	$t_P=8/20\mu\text{s}$			4	A
Clamping voltage	$V_C$	$I_{PP}=1\text{A}, t_P=8/20\mu\text{s}$		35	42	V
		$I_{PP}=4\text{A}, t_P=8/20\mu\text{s}$		47	55	
Junction capacitance	$C_J$	$V_{RWM}=0\text{V}, f=1\text{MHz}$		17	25	pF

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

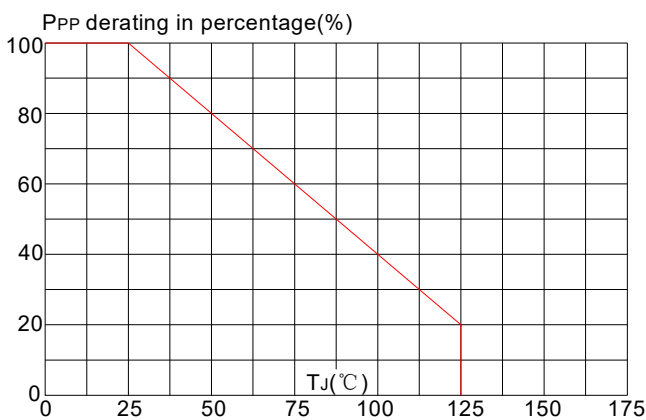
**FIG.1: V- I curve characteristics (Uni-directional)**



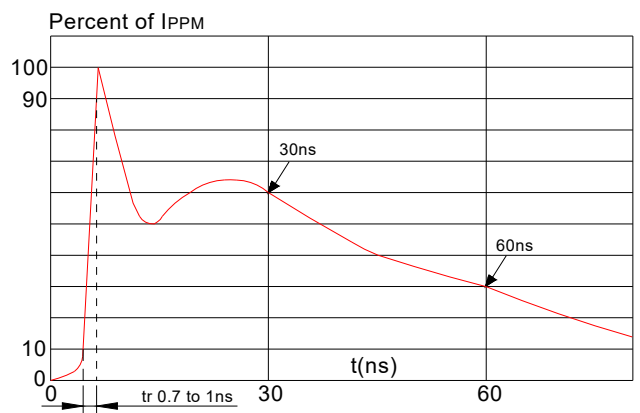
**FIG.2: Pulse waveform (8/20μs)**



**FIG.3: Pulse derating curve**

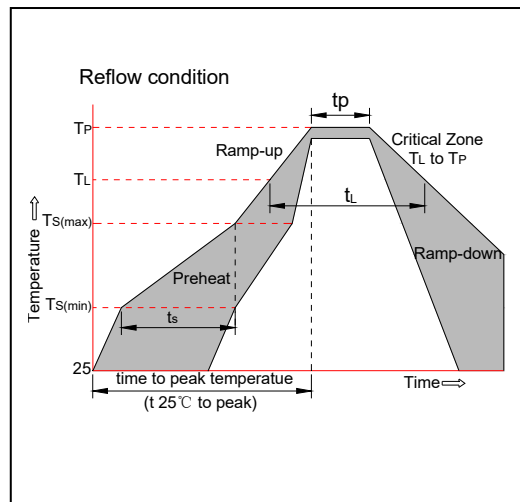


**FIG.4: ESD clamping (22kV contact)**

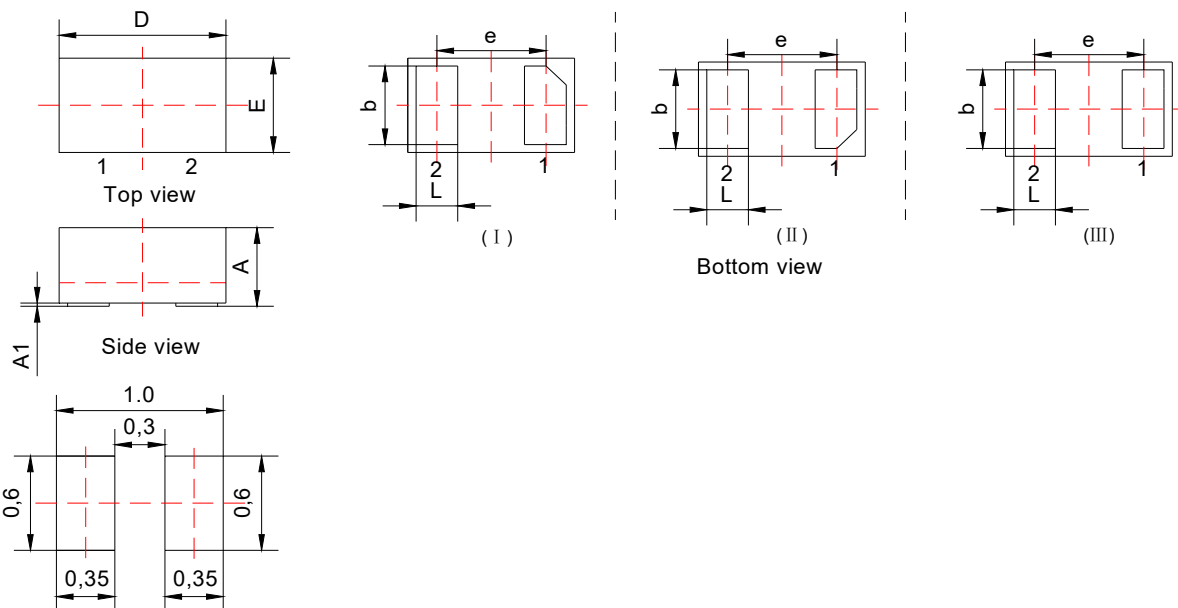


**SOLDERING PARAMETERS**

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



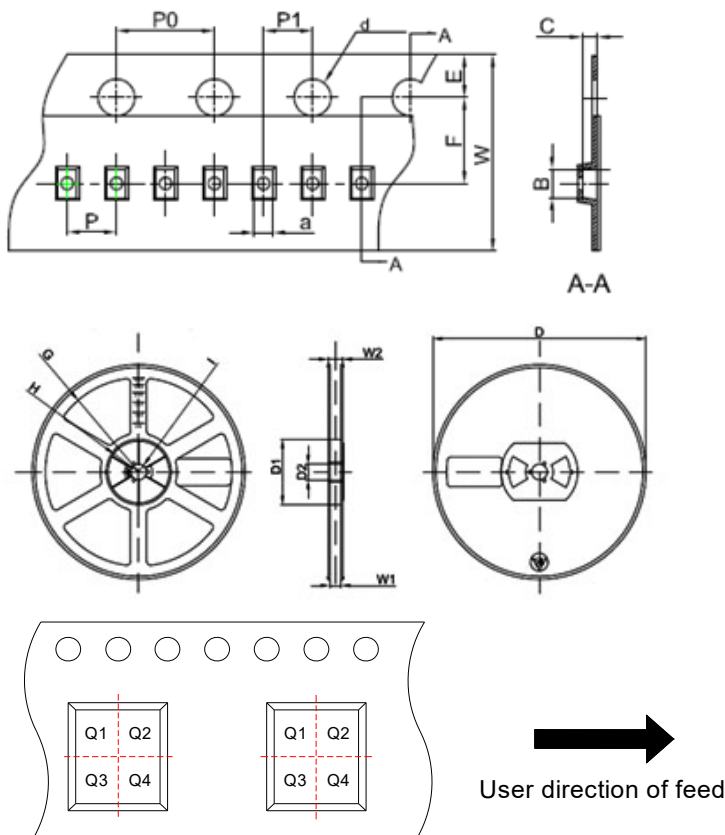
**PACKAGE MECHANICAL DATA**



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:**

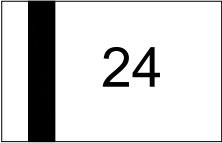
DFN1006-2L parts are shipped in tape. The carrier tape is made from a dissipative(carbon filled) polycarbonate resin. The cover tape is a multilayer film(heat activated adhesive in nature)primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts 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 Number	Package	Reel Size	Quantity Per Reel
JEU24DF	DFN1006-2L	7 Inch	10,000 pcs

**MARKING CODE**

Part Number	Marking Code
JEU24DF	

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