



### FEATURES

- ✧ Protects eight high-speed data lines
- ✧ Low capacitance
- ✧ Solid-state silicon-avalanche technology
- ✧ RoHS compliant

### MAIN APPLICATIONS

- ✧ 1G/2.5G/5G/10G ethernet
- ✧ Integrated magnetics/RJ-45 connectors
- ✧ Central office equipment
- ✧ Industrial equipment
- ✧ IP camera

### PROTECTION SOLUTION TO MEET

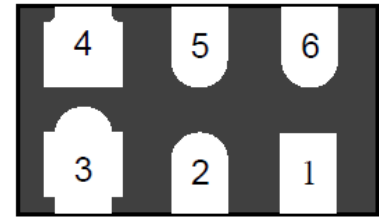
- ✧ IEC61000-4-2 (ESD)  $\pm 10\text{kV}$  (air),  $\pm 10\text{kV}$  (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 7A (8/20 $\mu\text{s}$ )

### MECHANICAL CHARACTERISTICS

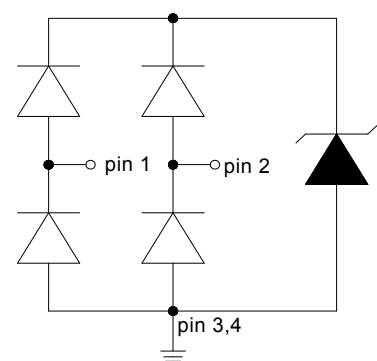
- ✧ DFN1610-6L package
- ✧ Molding compound flammability rating: UL 94V-0
- ✧ Quantity per reel: 3,000pcs
- ✧ Lead finish: lead free
- ✧ Marking code: 3382P

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

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20 $\mu\text{s}$ waveform	P <sub>PP</sub>	70	W
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	+/- 10	kV
ESD per IEC 61000-4-2 (Contact)		+/- 10	
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



DFN1610-6L



Circuit Diagram

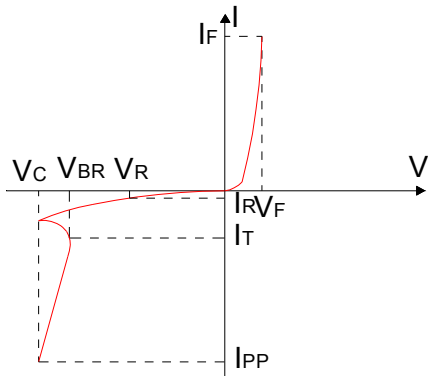
**ELECTRICAL CHARACTERISTICS** ( $T_A=25^{\circ}C$ )

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	$V_{RWM}$	I/O to GND			3.3	V
Reverse breakdown voltage	$V_{BR}$	I/O to GND@ $I_T=1mA$	4.5			V
Reverse leakage current	$I_R$	I/O to GND @ $V_{RWM}=3.3V$			0.1	$\mu A$
Clamping voltage	$V_C^{①}$	$I_{PP}=4A, t_P=100ns$		6.5		V
		$I_{PP}=16A, t_P=100ns$		9.0		V
Dynamic resistance	$R_{DYN}^{①}$	$t_P=100ns$		0.23		$\Omega$
Clamping voltage	$V_C^{②}$	$I_{PP}=1A, t_P=8/20\mu s$		5.5	6.5	V
		$I_{PP}=5A, t_P=8/20\mu s$		7.5	8.5	V
		$I_{PP}=7A, t_P=8/20\mu s$		9	10.5	V
Junction capacitance	$C_J$	$V_{RWM}=0V, f=1MHz$ I/O pin to GND		0.5	0.6	pF
		$V_{RWM}=0V, f=1MHz$ Between I/O pins		0.25	0.35	pF

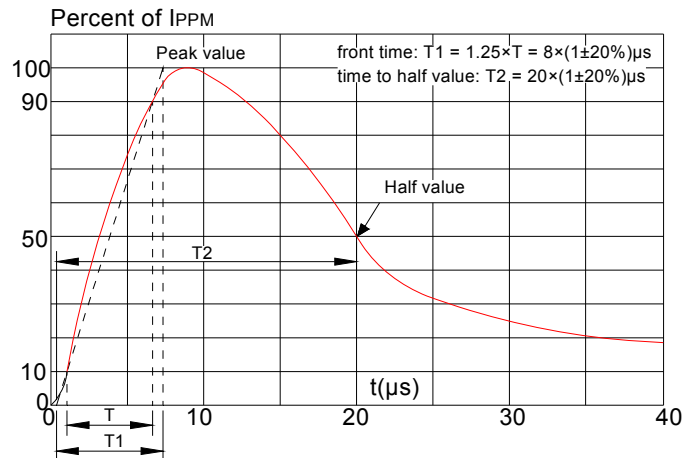
- ① TLP parameter: $Z_0=50\Omega, t_P=100ns, t_r=2ns$ , averaging window from 60ns to 80ns.  $R_{DYN}$  is calculated from 4A to 16A.
- ② Non-repetitive current pulse, according to IEC61000-4-5.

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

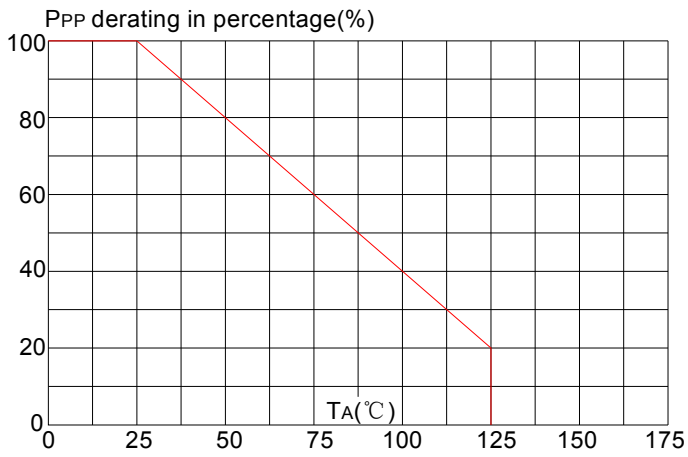
**FIG.1: V- I curve characteristics (Uni-directional)**



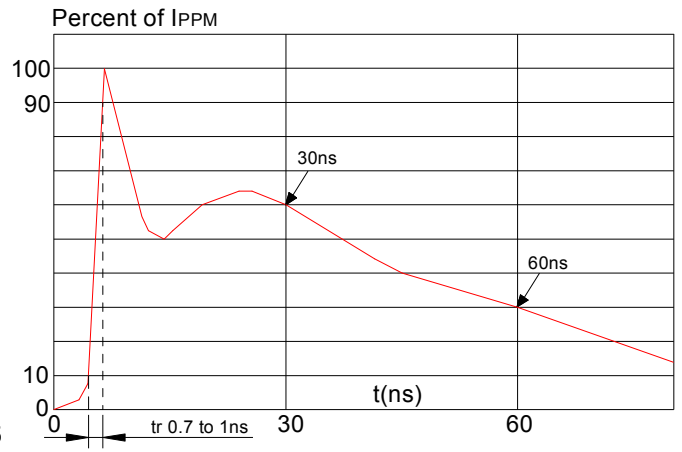
**FIG.2: Pulse waveform (8/20 $\mu s$ )**



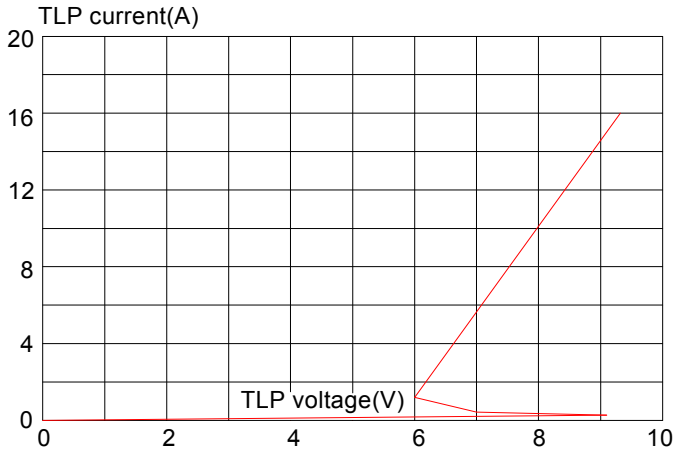
**FIG.3: Pulse derating curve**



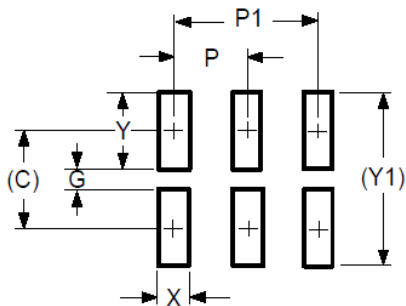
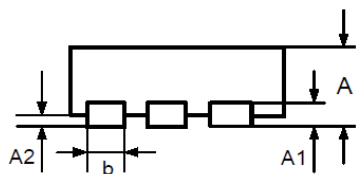
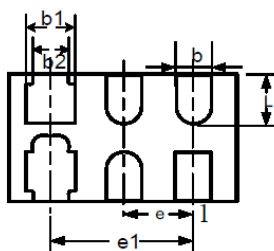
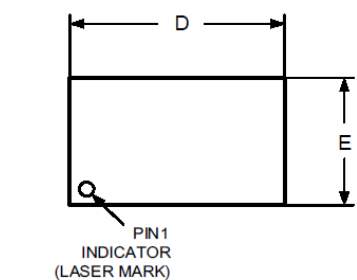
**FIG.4: ESD clamping (10kV contact)**



**FIG.5:TLP testing of I/O to GND**



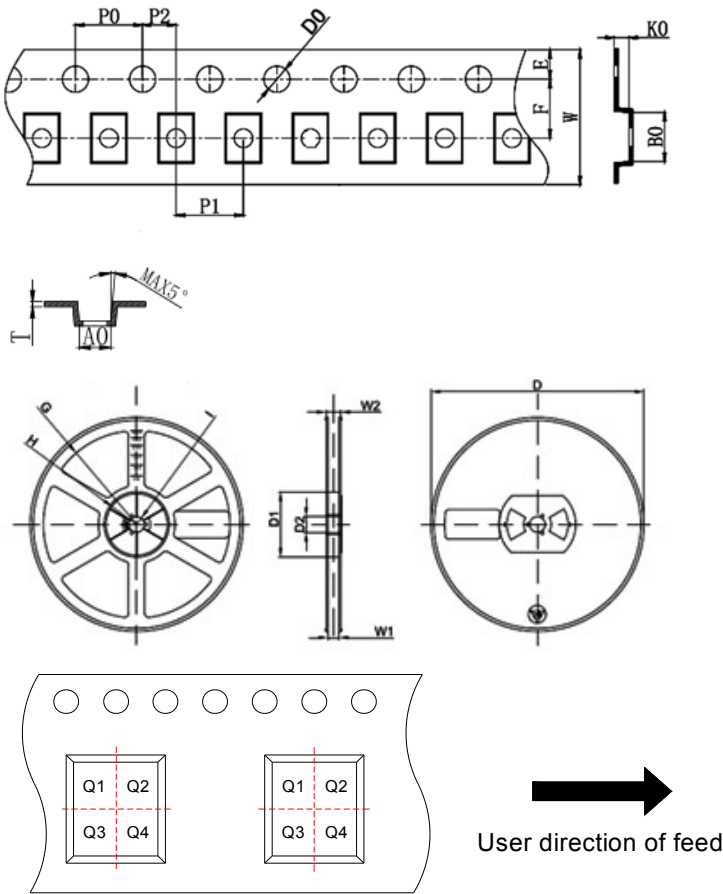
**PACKAGE MECHANICAL DATA**



**Land Pattern**

Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
D	1.55	1.65	0.061	0.065
E	0.95	1.05	0.037	0.041
L	0.33	0.43	0.013	0.017
b	0.15	0.25	0.006	0.010
b1	0.35	0.45	0.014	0.018
b2	0.25	0.35	0.010	0.014
e	0.50BSC		0.020BSC	
e1	1.00BSC		0.039BSC	
A	0.45	0.55	0.018	0.022
A1	0.15REF		0.006REF	
A2	0.00	0.05	0.000	0.002
C	0.60		0.024	
G	0.10		0.004	
P	0.50		0.020	
P1	1.00		0.039	
X	0.30		0.012	
Y	0.50		0.020	
Y1	1.10		0.043	

**TAPE AND REEL INFORMATION-DFN1610-6L**



Pin 1 quadrant:Q1&Q2

**Packaging Description:**

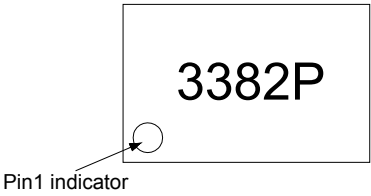
DFN1610-6L parts are shipped in tape. The carrier tape is made from a dissipative(carbon filled) polycarbonate resin. The cover tape is a multilayer film(heat activated adhesive in nature)primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units 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.
A0	1.15	0.045
B0	1.75	0.069
K0	0.67	0.026
D0	1.55	0.061
P0	4.00	0.157
P1	4.00	0.157
P2	2.00	0.079
E	1.75	0.069
F	3.50	0.138
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	Quantity Per Reel (PCS)	Reel Size
JEU3382P	DFN1610-6L	3,000	7 Inch

**MARKING CODE**

Part Number	Marking Code
JEU3382P	 <p>3382P</p> <p>Pin1 indicator</p>

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