



FEATURES

- ✧ Solid-state silicon-avalanche technology
- ✧ Array of surge rated diodes with internal TVS diode
- ✧ Low capacitance for high-speed interfaces
- ✧ Low leakage current and clamping voltage
- ✧ Low operating voltage
- ✧ RoHS compliant

MAIN APPLICATIONS

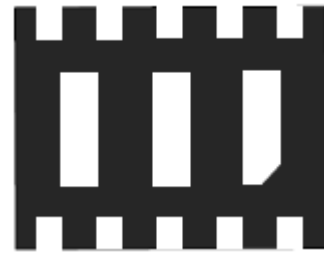
- ✧ 10/100/1000 ethernet
- ✧ Digital visual interface
- ✧ Analog video

PROTECTION SOLUTION TO MEET

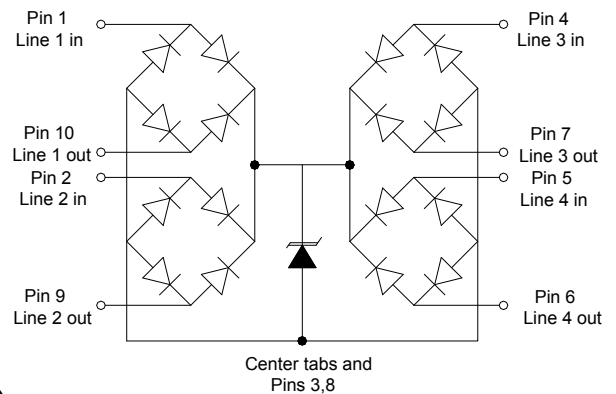
- ✧ IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 40A (8/20μs)(Line to line)

MECHANICAL CHARACTERISTICS

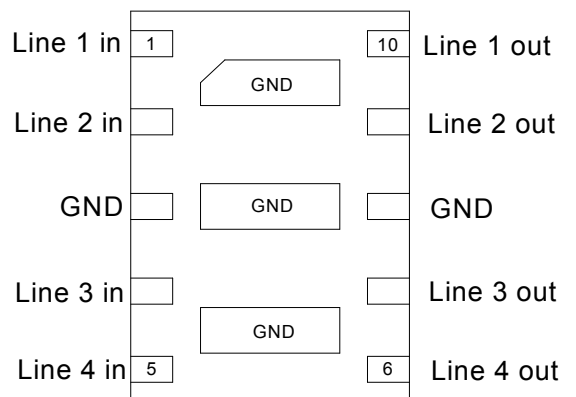
- ✧ DFN3020-10L package
- ✧ Molding compound flammability rating: UL 94V-0
- ✧ Quantity per reel: 3,000pcs
- ✧ Lead finish: lead free
- ✧ Marking code: 220425+Data code



DFN3020-10L



Circuit Diagram



Package configuration (Top view)

ABSOLUTE MAXIMUM RATINGS (T_A=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20μs waveform	P _{PP}	1000	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	+/-30 +/-30	kV
Lead soldering temperature	T _L	260 (10 sec.)	°C
Operating junction temperature range	T _J	-55 to +125	°C
Storage temperature range	T _{STG}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	V _{RWM}	I/O to GND			2.5	V
Reverse leakage current	I _R	I/O to GND @ V _{RWM} =2.5V		0.1	1.0	μA
Trigger voltage	V _{t1}	I _{t1} =1μA	3.0			V
Holding voltage	V _h	I _h =1mA	3.0			V
Clamping voltage	V _C	I _{PP} =1A, t _P =8/20μs I/O to GND		6	8	V
		I _{PP} =10A, t _P =8/20μs I/O to GND		9	11	V
		I _{PP} =25A, t _P =8/20μs I/O to GND		13	15	V
		I _{PP} =40A, t _P =8/20μs Line to line, two I/O pins connected together on each line(Note 1)		20	22	V
Junction capacitance	C _J	V _{RWM} =0V, f=1MHz I/O pin to GND		3.5	4.0	pF
		V _{RWM} =0V, f=1MHz Between I/O pins		1.5	2.0	pF

1) Ratings with 2 pins connected together per recommended configuration(ie pin 1 connected to pin 10, pin 2 connected to pin 9, pin 4 connected to pin 7, and pin 5 connected to pin 6.)

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

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

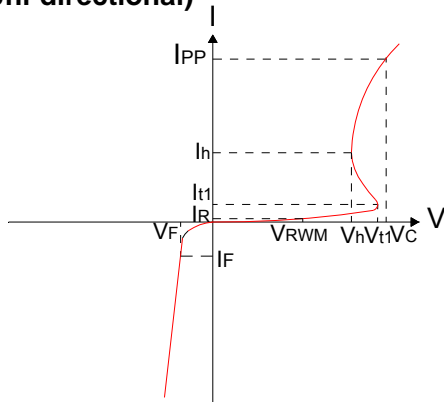


FIG.2: Pulse waveform (8/20 μs)

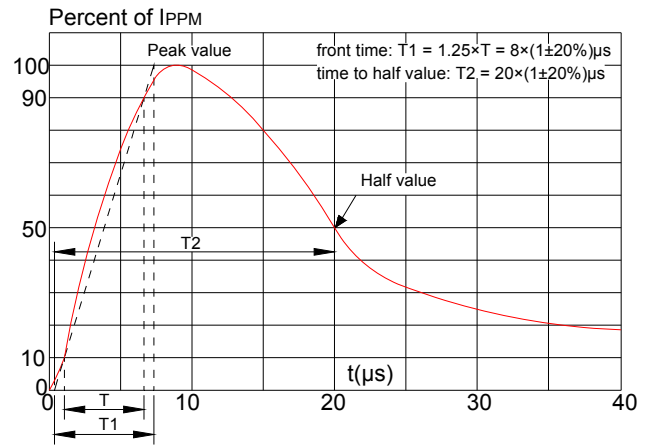


FIG.3: Pulse derating curve

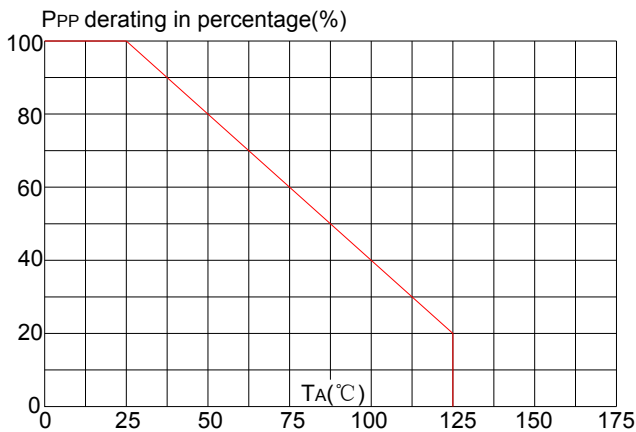
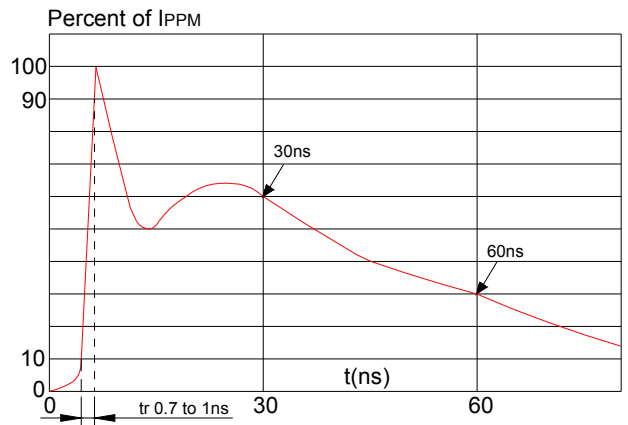
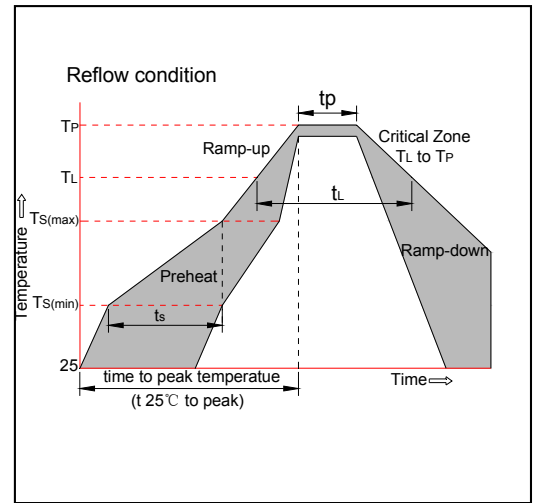


FIG.4: ESD clamping (30kV contact)

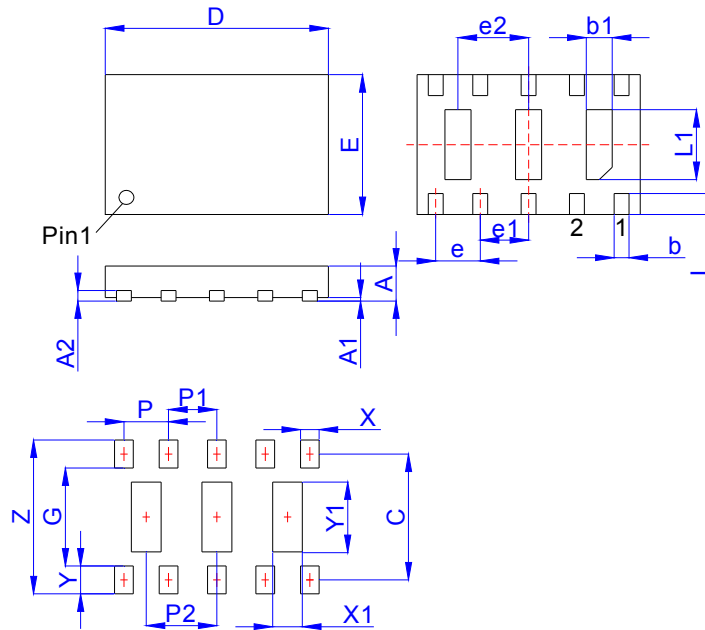


SOLDERING PARAMETERS

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



Land Pattern

Symbol	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D	2.95	3.00	3.05	0.116	0.118	0.120
E	1.95	2.00	2.05	0.077	0.079	0.081
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
A2	0.15REF			0.006REF		
b	0.15	0.20	0.25	0.006	0.008	0.010
b1	0.30	0.35	0.40	0.012	0.014	0.016
e	0.60BSC			0.024BSC		
e1	0.65BSC			0.026BSC		
e2	0.95BSC			0.037BSC		
L	0.25	0.30	0.35	0.010	0.012	0.014
L1	0.95	1.00	1.05	0.037	0.039	0.041
C	1.80			0.071		
G	1.40			0.055		
P	0.60			0.024		
P1	0.65			0.026		
P2	0.95			0.037		
X	0.25			0.010		
X1	0.40			0.016		
Y	0.40			0.016		
Y1	1.00			0.039		
Z	2.20			0.087		

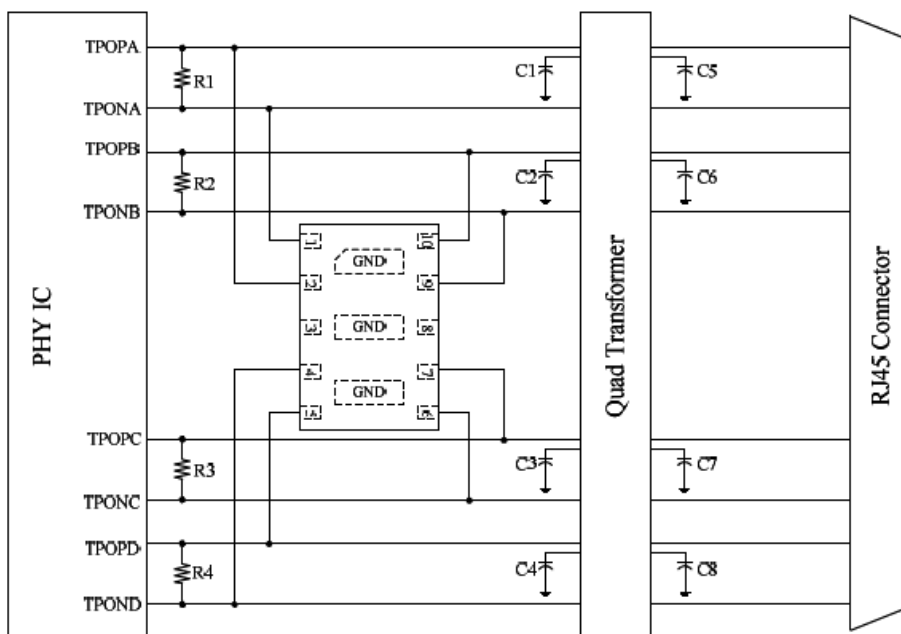
ORDERING INFORMATION

Part Number	Package	Quantity Per Reel (PCS)	Reel Size
JEU2574N	DFN3020-10L	3,000	7 Inch

APPLICATION INFORMATION

Electronic equipment is susceptible to damage caused by a variety of sources, including electrostatic discharge (ESD), electrical fast transients (EFT) and lightning strikes. The JEU2574N was designed to protect the sensitive equipment from damage which may be induced by such transient events. This product can be configured in different connections to meet the requirement of common-mode and differential-mode as follows:

Gigabit ethernet protection

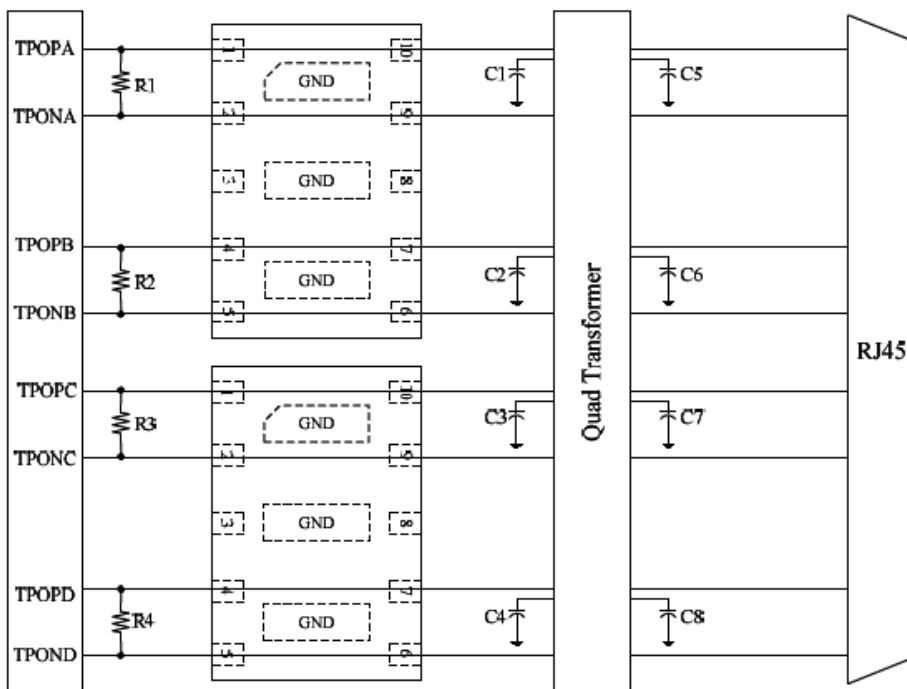


Schematic diagram for gigabit ethernet ESD/surge protection using JEU2574N

NOTE:

Please connect pin3, Pin8 and all GND tabs of JEU2574N to the ground plane of the systems.

Gigabit ethernet protection(Cont.)



Schematic diagram for gigabit ethernet ESD/surge protection using JEU2574N

NOTE:

Please connect pin3, Pin8 and all GND tabs of JEU2574N to the ground plane of the systems.

MARKING CODE

Part Number	Marking Code
JEU2574N	<div style="border: 1px solid black; padding: 5px; display: inline-block; text-align: center;"> <p>220425 YYWW</p> </div> <p>220425:Marking Code YYWW: Date Code</p>

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