

# Transinet Voltage SuppressionDiode

## SE03NJL02GC

### Features

- ◆ 100Watts peak pulse power (tp = 8/20μs)
- ◆ Tiny DFN2010-8L package
- ◆ Solid-state silicon-avalanche technology
- ◆ Low clamping voltage
- ◆ Low leakage current
- ◆ Protection two data/power line
- ◆ IEC 61000-4-2 ±25kV contact ±25kV air
- ◆ IEC 61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC 61000-4-5 (Lightning) 10A (8/20μs)

### Applications

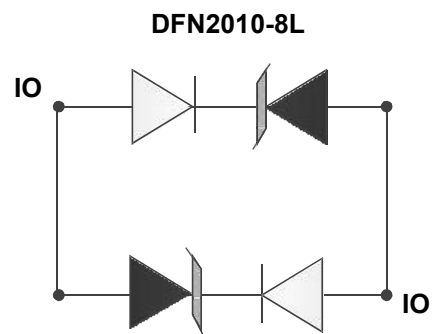
- ◆ 10/100/1000 Ethernet
- ◆ Integrated magnetics/RJ-45 connectors
- ◆ LAN/WAN Equipment
- ◆ Security Cameras
- ◆ Industrial Controls
- ◆ Peripherals
- ◆ Notebooks & Desktop Computers

### Mechanical Data

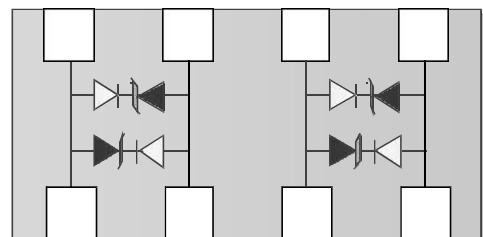
- ◆ DFN2010-8L package
- ◆ Flammability Rating: UL 94V-0
- ◆ Packaging: Tape and Reel
- ◆ RoHS compliant



### Schematic



### PIN Configuration



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### Absolute Maximum Rating

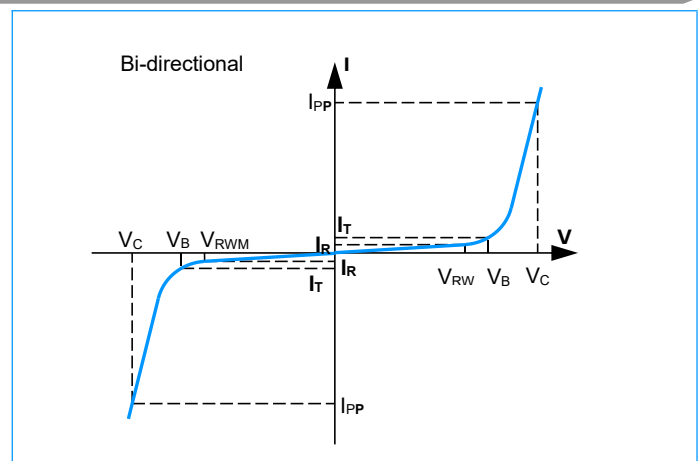
Symbol	Parameter	Value	Unit
<b>I<sub>PP</sub></b>	Peak Pulse Current ( $t_p = 8/20 \mu s$ ) (8/20 $\mu s$ pulse waveform.)	10	A
<b>P<sub>PP</sub></b>	Peak Pulse Power ( $t_p = 8/20 \mu s$ )	100	Watts
<b>T<sub>L</sub></b>	Lead Soldering Temperature	260(10seconds)	°C
<b>T<sub>J</sub></b>	Junction Temperature	-55 to +125	°C
<b>T<sub>STG</sub></b>	Storage Temperature Range	-55 to +125	°C
<b>V<sub>ESD</sub></b>	ESD per IEC61000-4-2 (Air)	25	KV
	ESD per IEC61000-4-2 (Contact)	25	

### Electrical Characteristics

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
<b>V<sub>RWM</sub></b>	Reverse Stand-Off Voltage	--	--	--	2.8	V
<b>V<sub>BR</sub></b>	Reverse Breakdown Voltage	$I_T = 1mA$	3.5	--	--	V
<b>I<sub>R</sub></b>	Reverse Leakage Current	$V_{RWM} = 2.8V, T = 25^\circ C$	--	50	500	nA
<b>V<sub>C</sub></b>	Clamping Voltage	$I_{PP} = 10A, t_p = 8/20 \mu s$	--	13	14	V
<b>C<sub>j</sub></b>	Junction Capacitance	$V_R = 0V, f = 1MHz$ IO to IO	--	1.2	1.4	pF

### I-V Curve Characteristics

Symbol	Parameter
<b>I<sub>PP</sub></b>	Maximum Peak Pulse Current
<b>V<sub>C</sub></b>	Clamping Voltage @ I <sub>PP</sub>
<b>V<sub>RWM</sub></b>	Working Peak Reverse Voltage
<b>I<sub>R</sub></b>	Maximum Reverse Leakage Current @ V <sub>RWM</sub>
<b>I<sub>T</sub></b>	Test Current
<b>I<sub>h</sub></b>	Holding Current @ V <sub>h</sub>
<b>V<sub>B</sub></b>	Breakdown Voltage @ I <sub>T</sub>



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## Characteristic Curves

Fig1. Peak Pulse Power vs. Pulse Time

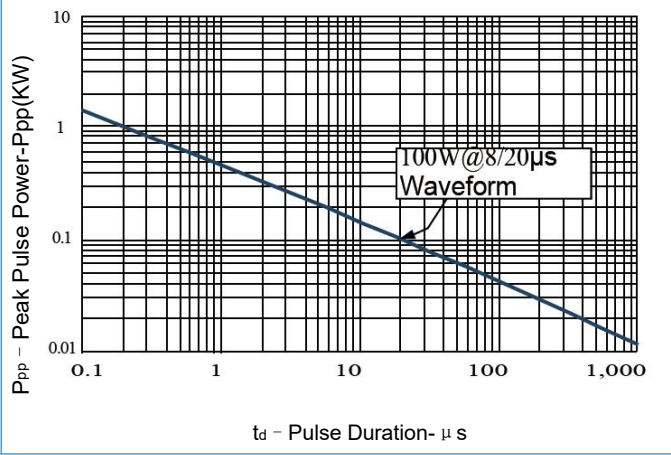


Fig2. Power Derating Curve

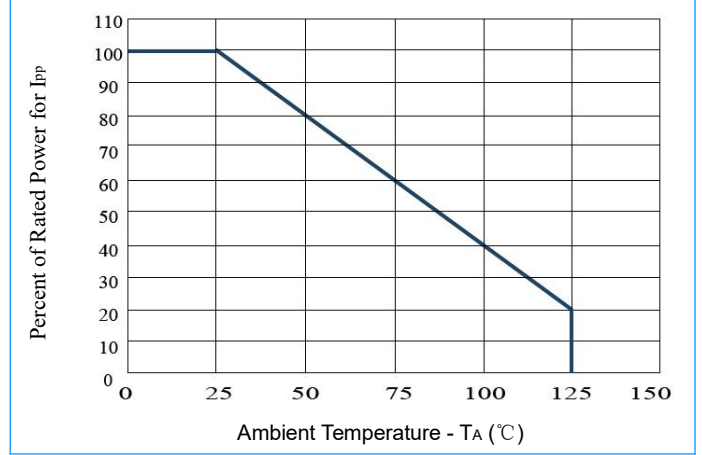


Fig3. Pulse Waveform

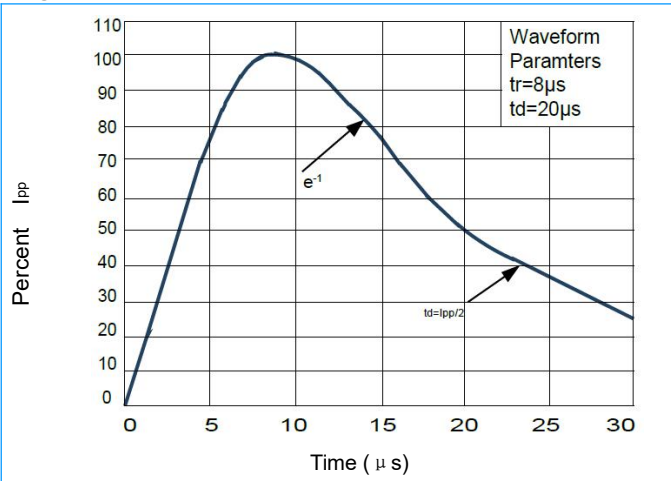


Fig4. Clamping Voltage vs. Ipp

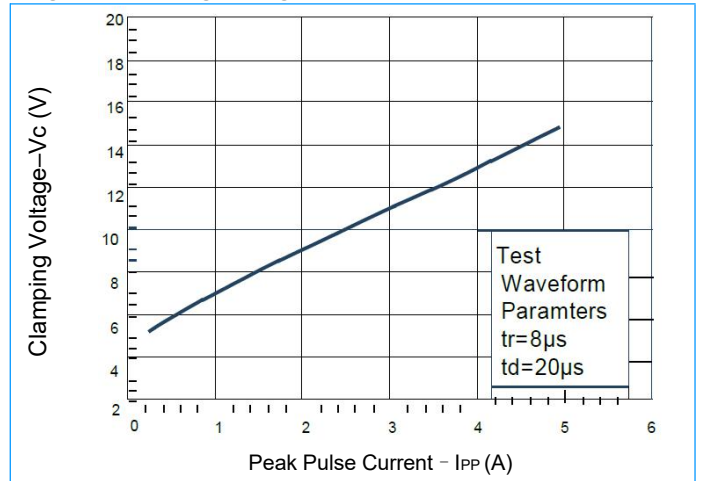


Fig5. Normalized Junction Capacitance vs. Reverse Voltage

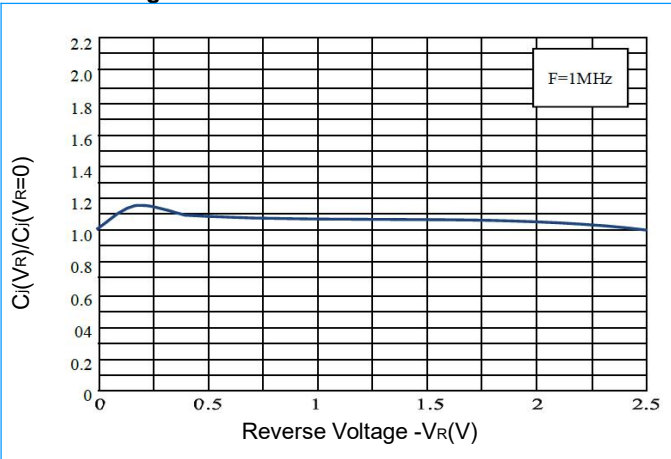
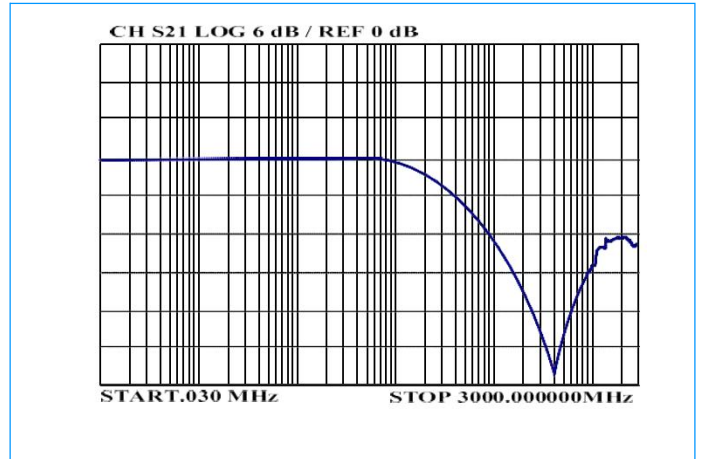


Fig6. Insertion Loss

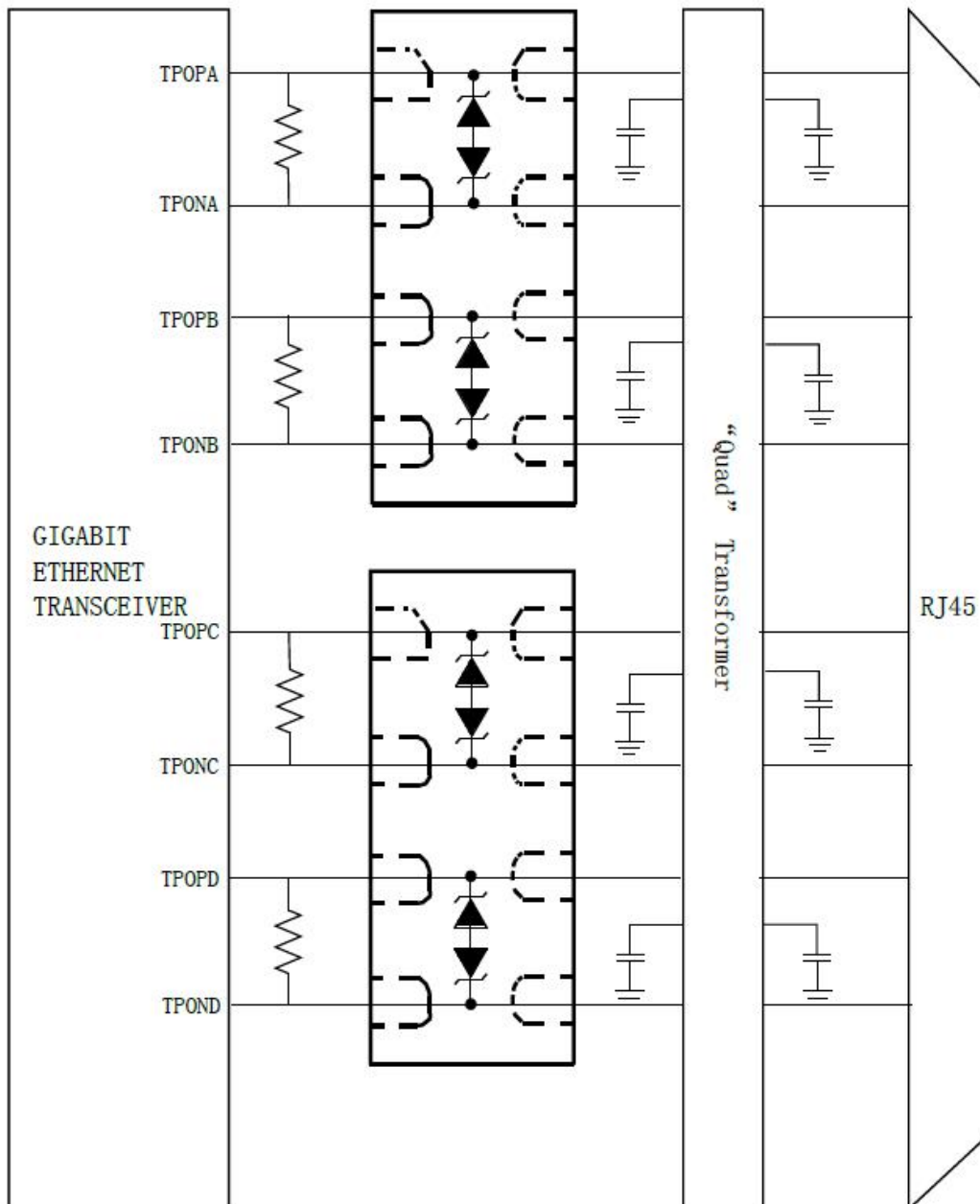


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## SE03NJL02GC

### 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. SE03NJL02GC was designed to protect the sensitive equipment from damage which may be induced by such transient events. This product can be configured in a connection to meet the requirement of differential line pairs as follows:

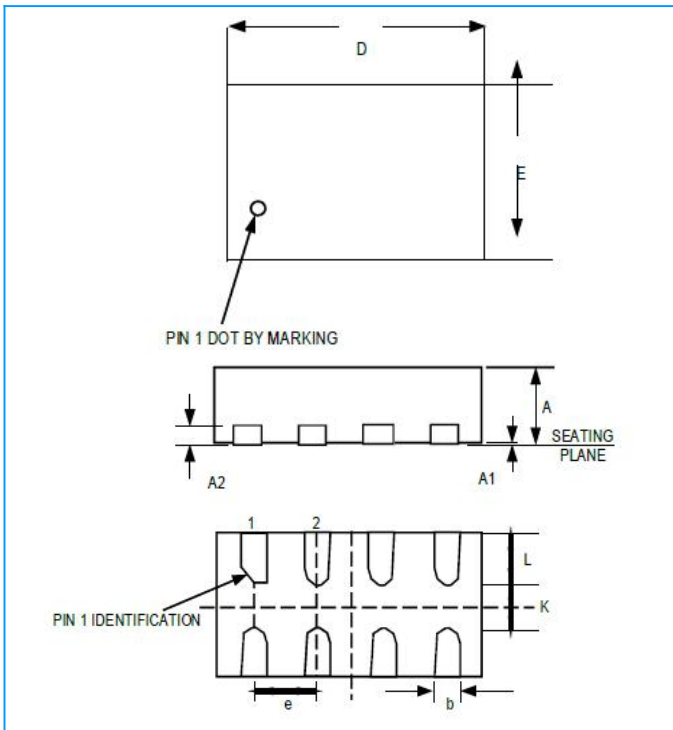


**Schematic Diagram for Gigabit Ethernet ESD/Surge Protection**

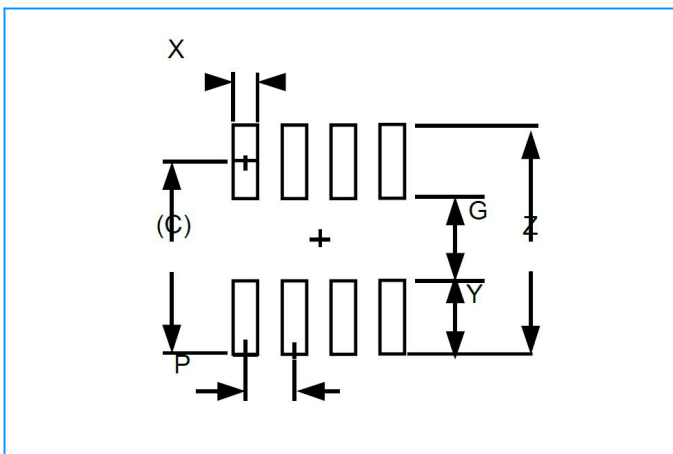
# Transinet Voltage SuppressionDiode

## SE03NJL02GC

### DFN2010-8L Package Outline



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.45	0.55	0.018	0.022
A1	0.00	0.046	0.000	0.002
A2	0.110REF		0.005REF	
b	0.200	0.300	0.008	0.012
D	1.924	2.076	0.076	0.082
E	0.924	1.076	0.036	0.042
e	0.500TYP		0.020TYP	
L	0.274	0.426	0.011	0.017
K	0.200MIN		0.008MIN	



DIM	INCHES	MILLIMETERS
C	0.035	0.875
G	0.008	0.2
P	0.020	0.5BSC
X	0.014	0.35
Y	0.018	0.45
Z	0.043	1.10

### Ordering Information

Part Number	Base qty	Delivery mode
SE03NJL02GC	3k	Tape and reel