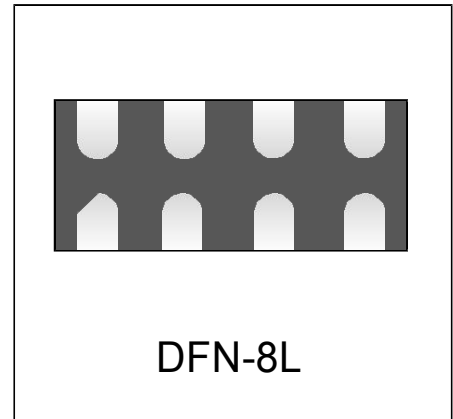


Features

- 100 Watts peak pulse power ($t_p=8/20\mu s$)
- Protects Two Line Pairs (Four lines)
- Low capacitance
- Low leakage current
- Low operating and clamping voltage
- Package optimized for high-speed lines



IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD) $\pm 25kV$ (air), $\pm 15kV$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 5A (8/20 μs)

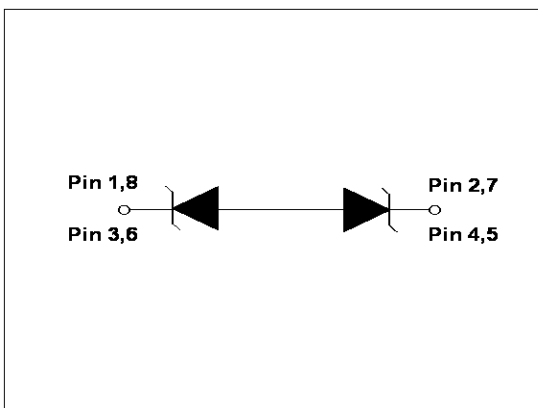
Mechanical Characteristics

- DFN-8L package
- Molding compound flammability rating: UL 94V-0
- Marking: Marking Code
- Packaging: Tape and Reel
- RoHS Compliant

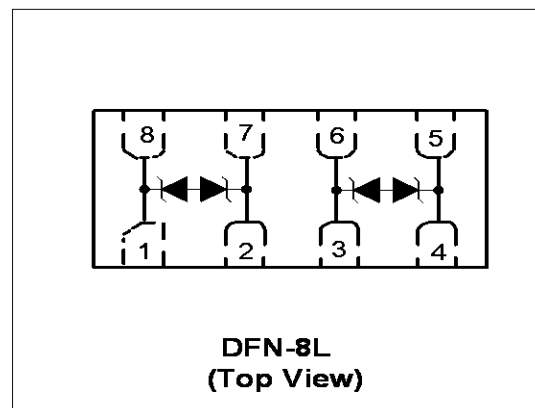
Applications

- Switching Systems
- WAN/LAN Equipment
- Desktops, Servers, Notebooks & Handhelds
- 10/100/1000 Ethernet
- Cellular Phones
- Audio/Video Inputs

Circuit Diagram (Each Line Pair)



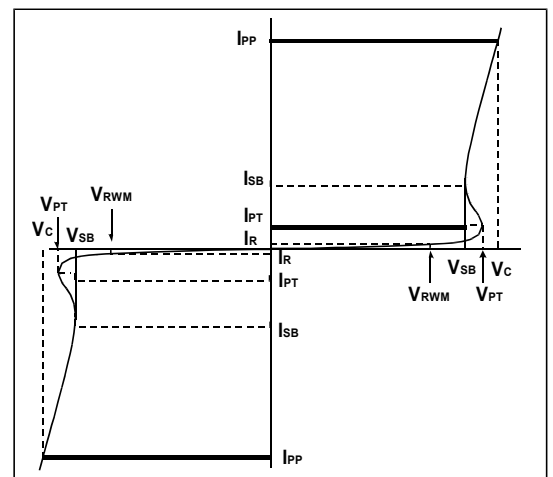
Schematic & PIN Configuration



Absolute Maximum Rating			
Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$) see Figure1&Figure2	P_{PP}	100	Watts
Peak Pulse Current ($t_p=8/20\mu s$)	I_{PP}	5	A
ESD per IEC 61000-4-2(Air) ESD per IEC 61000-4-2(contact)	V_{ESD}	± 30 ± 30	kV
Operating Temperature	T_J	-45 to + 85	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}C$

Electrical Parameters (T=25 $^{\circ}C$)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{PT}	Punch-through Breakdown Voltage @ I_T
V_{SB}	Snap-Back Voltage @ I_{SB}
I_{SB}	Snap-Back Current
I_{PT}	Test Current



Electrical Characteristics(T=25 $^{\circ}C$)

BDFN8C2R52L						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}				2.5	V
Punch-through Voltage	V_{PT}	$I_{PT}=1\mu A$	3.0			V
Reverse Leakage Current	I_R	$V_{RWM}=2.5V$ $T=25^{\circ}C$			1	μA
Snap-Back Voltage	V_{SB}	$I_{SB}=1mA$	3.0		6	V
Clamping Voltage	V_C	$I_{PP}=1A$, $t_p=8/20\mu s$ (Each Line)			7.5	V
Clamping Voltage	V_C	$I_{PP}=5A$, $t_p=8/20\mu s$ (Each Line)			13.0	V
Parasitic Capacitance	C_{ESD}	$V_R=2.5V$, $f=1MHz$ (Each Line)		4.5	6	pF
Variation in C ESD with Reverse Bias	C_{Δ}	Pin1, 8 to 2, 7 & Pin3, 6 to Pin4, 5 $V_R=0V \sim 2.5V$, $f=1MHz$		1.3		pF

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

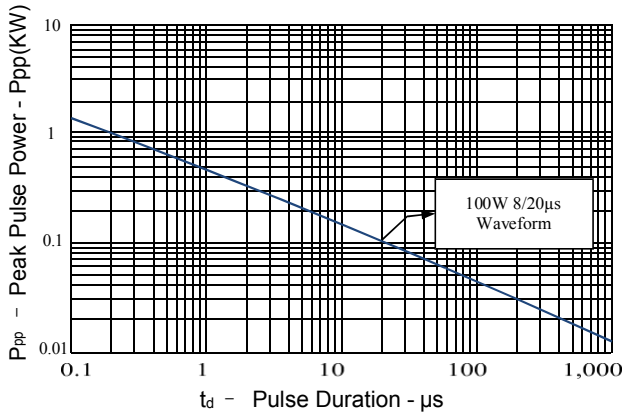


Figure 2: Power Derating Curve

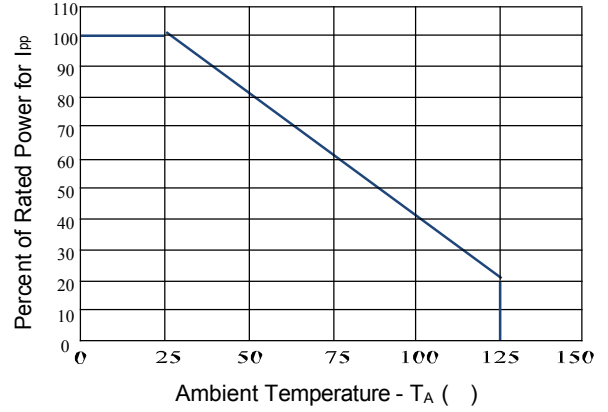


Figure 3: Pulse Waveform

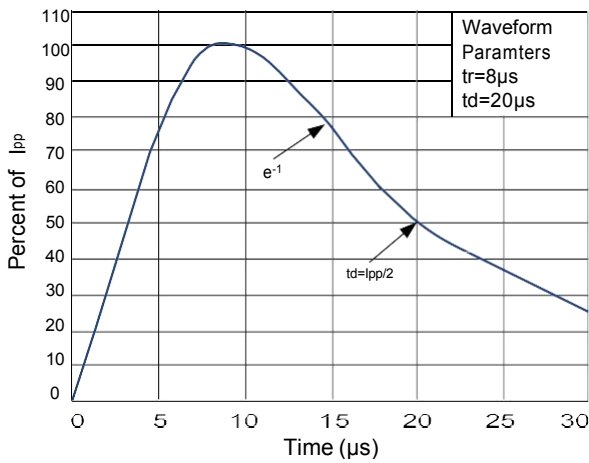


Figure 4: Clamping Voltage vs. Peak Pulse Current

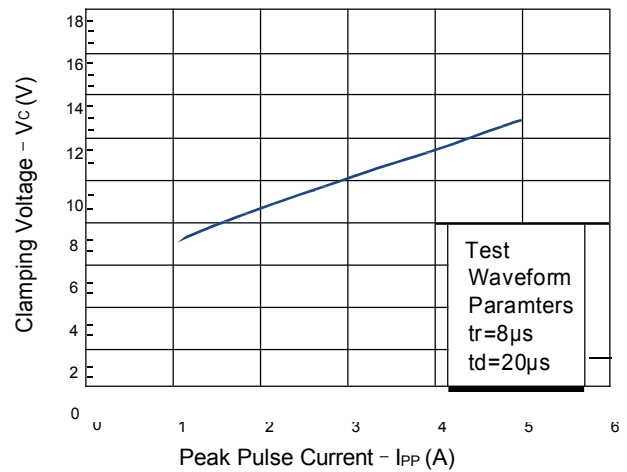


Figure 5: Normalized Junction Capacitance vs. Reverse Voltage

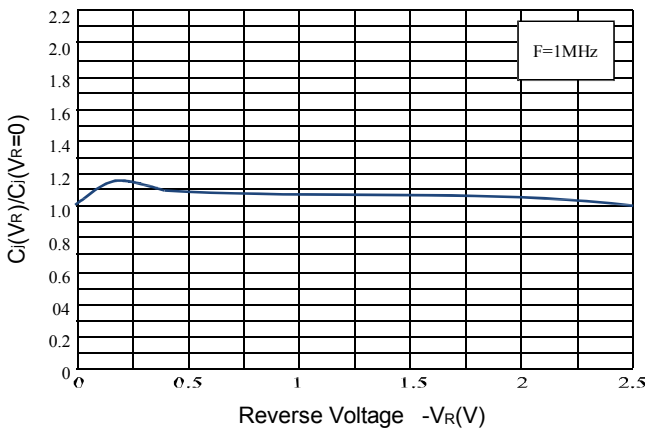
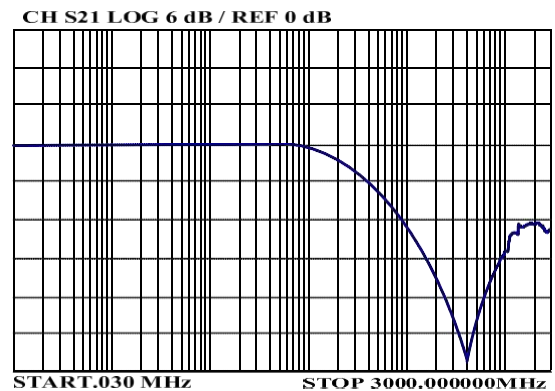
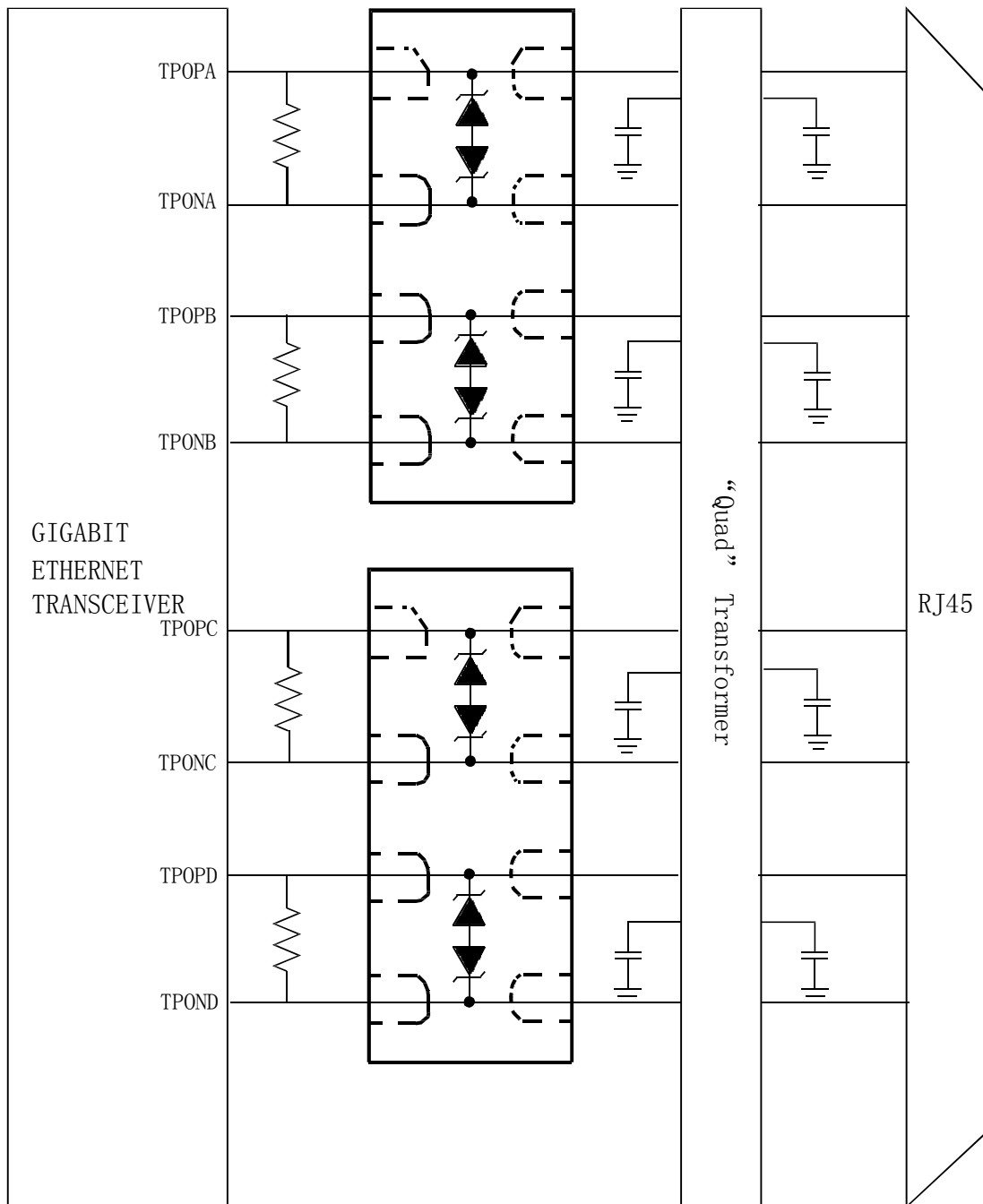


Figure 6: Insertion Loss



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 BDFN8C2R52L 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

Outline Drawing – DFN-8L

PACKAGE OUTLINE

PIN 1 DOT BY MARKING

PIN 1 IDENTIFICATION

DFN-8L

DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.700	0.800	0.028	0.031
A1	-0.004	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	

DIMENSIONS		
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

Notes

- This Land Pattern Is For Reference Purposes Only. Consult Your Manufacturing Group To Ensure Your Company's Manufacturing Guidelines Are Met.
- Reference IPC-SM-782A, RLP NO. 300A.

Marking Codes

Part Number	Marking Code
BDFN8C2R52L	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> </div>

Package Information

Qty: 3k/Reel

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[SA110CA](#) [SA60CA](#) [SA64CA](#) [SMBJ12CATR](#) [SMBJ33CATR](#) [SMBJ8.0A](#) [ESD101-B1-02ELS E6327](#) [ESD105-B1-02EL E6327](#) [ESD112-B1-02EL E6327](#) [ESD119B1W01005E6327XTSA1](#) [ESD5V0L1B02VH6327XTSA1](#) [ESD7451N2T5G](#) [19180-510](#) [CPDT-5V0USP-HF](#)
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