



JLE33ULF2-10

4-Line Uni-directional TVS Diode

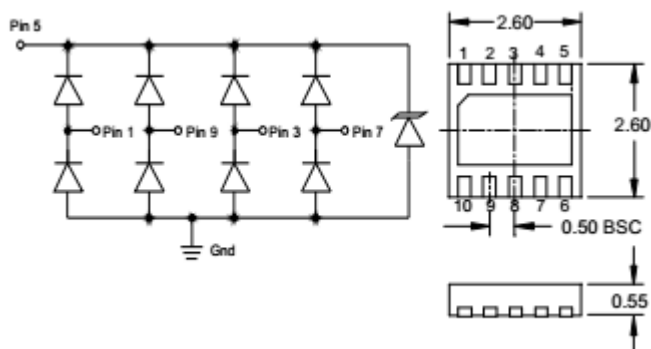
Description

The JLE33ULF2-10 is a 3.3V uni-directional TVS diode array, utilizing leading monolithic silicon technology to provide fast response time and ultra low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The JLE33ULF2-10 complies with the IEC 61000-4-2 (ESD) with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into 2.6x2.6x0.55mm DFN lead-free package. The small size and high ESD surge protection make JLE33ULF2-10 an ideal choice to protect Gigabit Ethernet, telecommunication lines, and digital video.

Features

- * 450W peak pulse power (8/20 μs)
- * Low leakage:nA level
- * Operating voltage: 3.3V
- * Low clamping voltage
- * One power line protects
- * Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 25A (8/20 μs)
- * RoHS Compliant
- * Package: DFN2626-10

Circuit Diagram

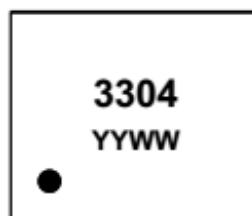


Circuit and Pin Schematic

Applications

- * Analog Video
- * RJ-45 Connectors
- * T1/E1 Secondary Protection
- * T3/E3 Secondary Protection
- * 10/100/1000 Ethernet

Marking Diagram



Transparent top view

3304YYWW:

Device Marking Code

Ordering Information

Part Number	Packaging	Reel Size
JLE33ULF2-10	3000/Tape & Reel	7 inch



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Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

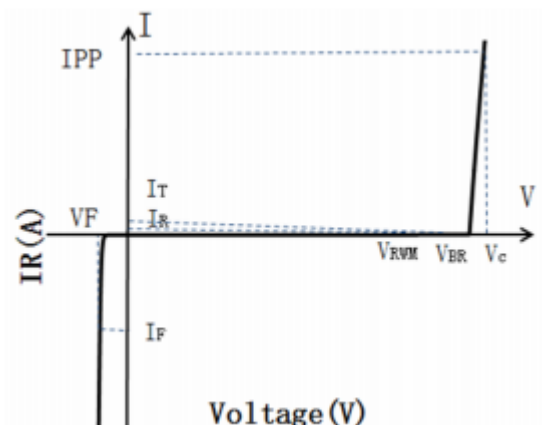
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	450	W
Peak Pulse Current (8/20 μs)	IPP	25	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55to +125	$^\circ\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^\circ\text{C}$

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				3.3	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	3.5			V
Reverse Leakage Current	I_R	$V_{RWM} = 3.3\text{V}$			0.2	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse),any I/O to GND			5.5	V
Clamping Voltage	V_C	$I_{PP} = 10\text{A}$ (8 x 20 μs pulse),any I/O to GND			9.5	V
Clamping Voltage	V_C	$I_{PP} = 25\text{A}$ (8 x 20 μs pulse),any I/O to GND			18	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$,between I/O pins		2.0		pF
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$,any I/O to GND		3.2	5.0	pF

Portion Electronics Parameter

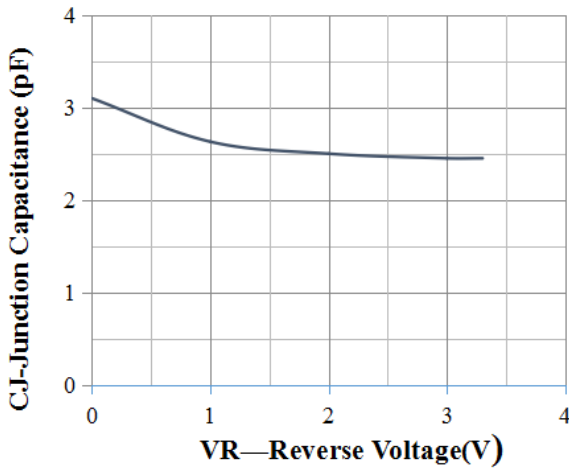
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_C



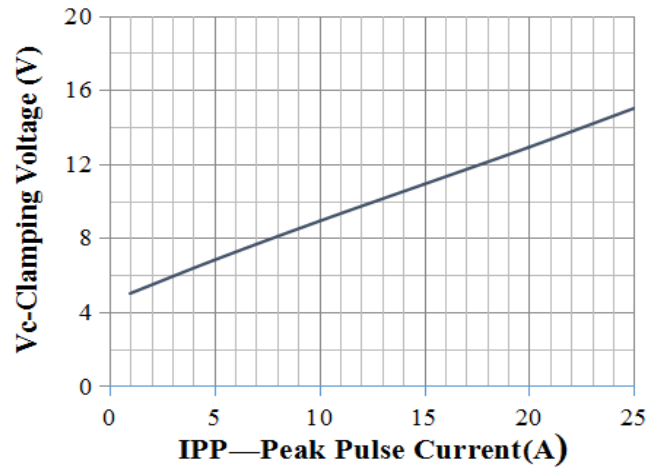


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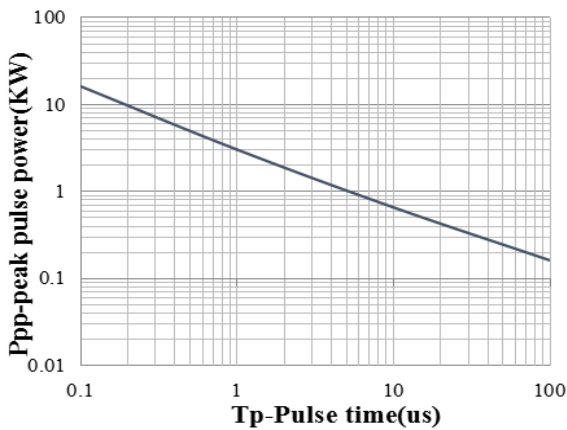
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



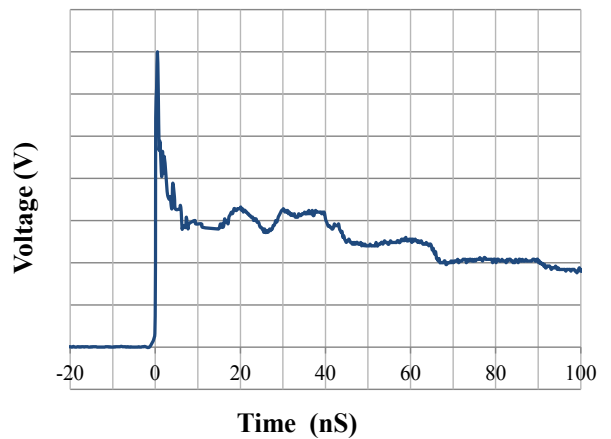
Junction Capacitance vs. Reverse Voltage



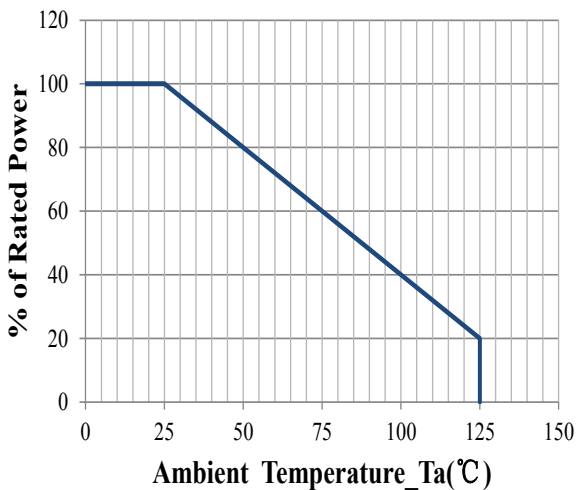
Clamping Voltage vs. Peak Pulse Current



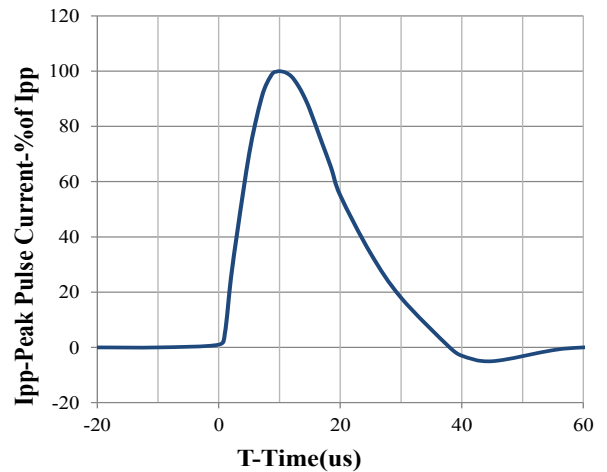
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



Power Derating Curve

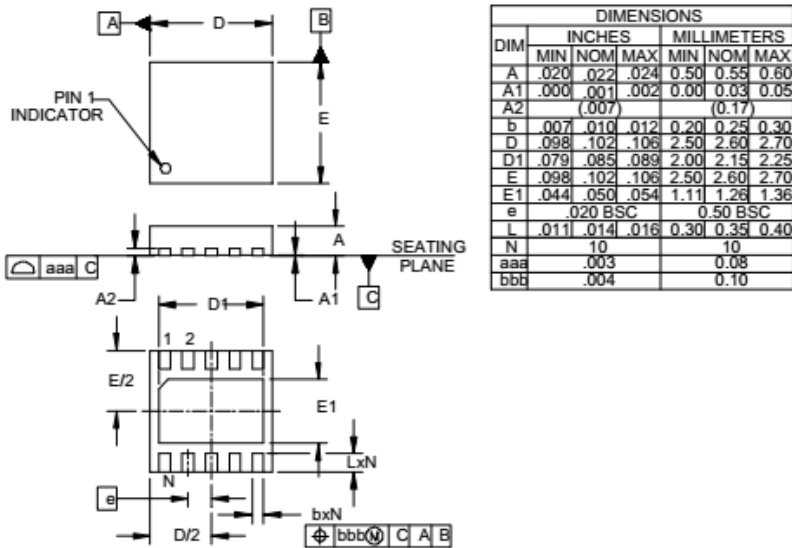


8 X 20us Pulse Waveform



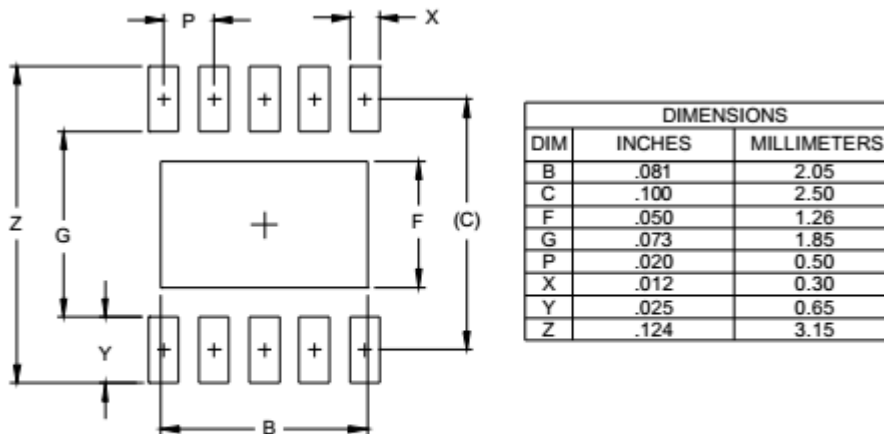
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DFN2626-10 Package Outline Drawing (Dimensions in millimeters)



- NOTES:
- CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
 - COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.

Suggested Land Pattern



- NOTES:
- THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY. CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.

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