



JLE05URD9-9

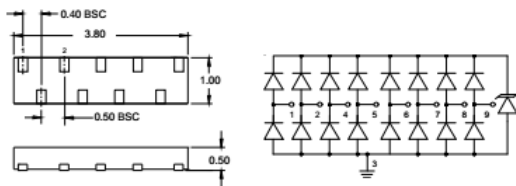
8-Line Uni-directional High Power TVS Diode

Jialan-Microelectronics

Description

The JLE05URD9-9 is an ultra low capacitance TVS array, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The JLE05URD9-9 has an ultra-low capacitance with a typical value at 0.29pF, and complies with the IEC 61000-4-2 (ESD) standard with $\pm 15\text{kV}$ air and $\pm 8\text{kV}$ contact discharge. It is assembled into a 9-pin lead-free DFN package. The flow through style package allows for easy PCB layout and matched trace lengths necessary to maintain consistent impedance between high speed differential lines. The

Circuit Diagram



Dimensions and Circuit Diagram

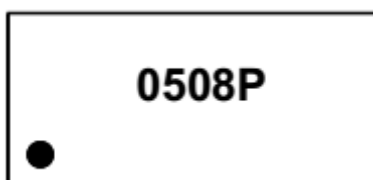
Features

- * 100W peak pulse power (8/20 μs)
- * Low leakage:nA level
- * Operating voltage: 5V
- * Ultra low clamping voltage
- * Eight power line protects
- * Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 15\text{kV}$
 - Contact discharge: $\pm 8\text{kV}$
 - IEC61000-4-5 (Lightning) 5A (8/20 μs)
- * RoHS Compliant
- * Package: DFN3810-9

Applications

- * Fast-charge battery chargers
- * Power management system
- * Cellular Handsets and Accessories
- * Personal Digital Assistants
- * Notebooks and Handhelds
- * Portable Instrumentation
- * Digital Cameras

Marking Diagram



Transparent top view

0508P:Device Marking Code

Ordering Information

Part Number	Packaging	Reel Size
JLE05URD9-9	3000/Tape & Reel	7 inch



JLE05URD9-9

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

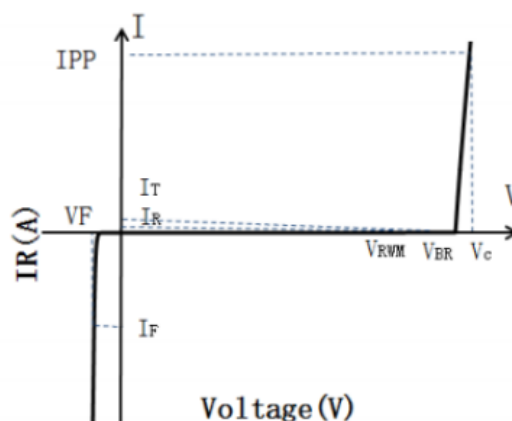
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	100	W
Peak Pulse Current (8/20 μs)	IPP	5	A
ESD per IEC 61000-4-2 (Air)	VESD	± 15	kV
ESD per IEC 61000-4-2 (Contact)		± 8	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_{\text{T}} = 1\text{mA}$	6			V
Reverse Leakage Current	I_{R}	$V_{\text{RWM}} = 5\text{V}$			0.5	μA
Clamping Voltage	V_{C}	$I_{\text{PP}} = 1\text{A}$ (8 x 20 μs pulse)			15	V
Clamping Voltage	V_{C}	$I_{\text{PP}} = 5\text{A}$ (8 x 20 μs pulse)			20	V
Junction Capacitance	C_{J}	$V_{\text{R}} = 0\text{V}$, $f=1\text{MHz}$, any I/O pin to ground		0.29	0.35	pF

Symbol	Parameter
I_{T}	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_{C}	Clamping Voltage @ I_{C}

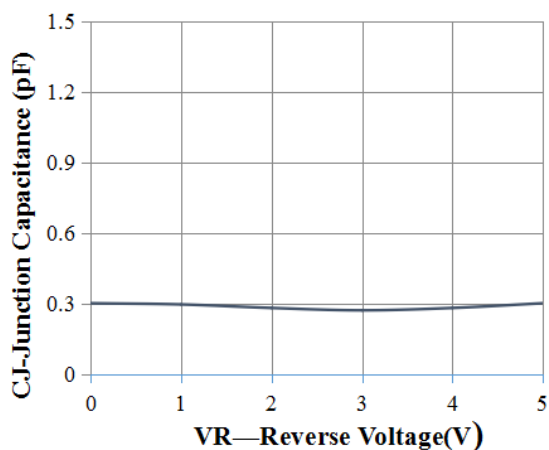
Portion Electronics Parameter



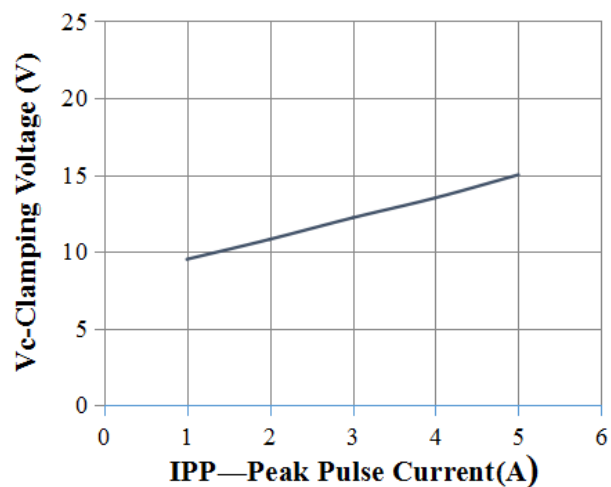


JLE05URD9-9

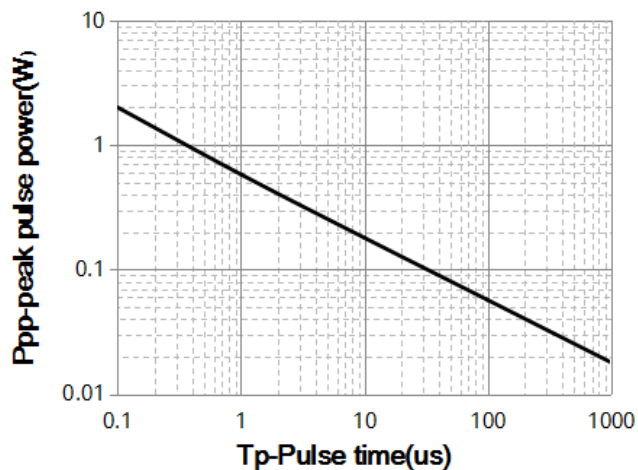
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



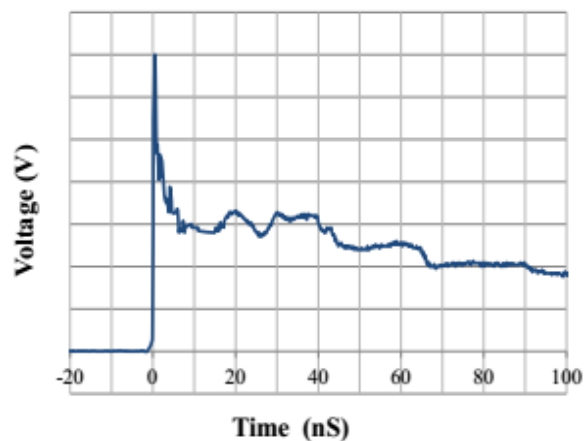
Junction Capacitance vs. Reverse Voltage



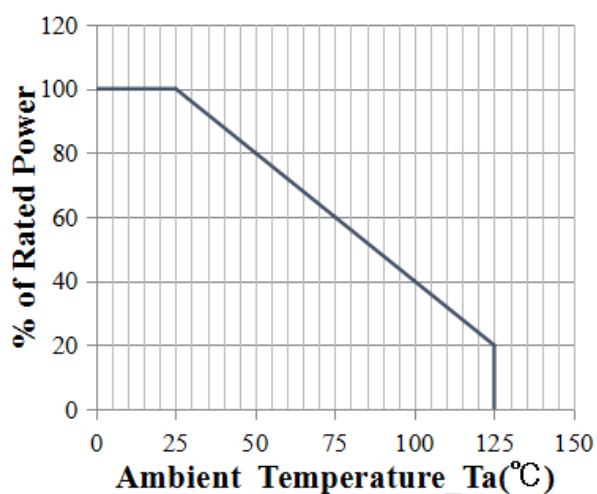
Clamping Voltage vs. Peak Pulse Current



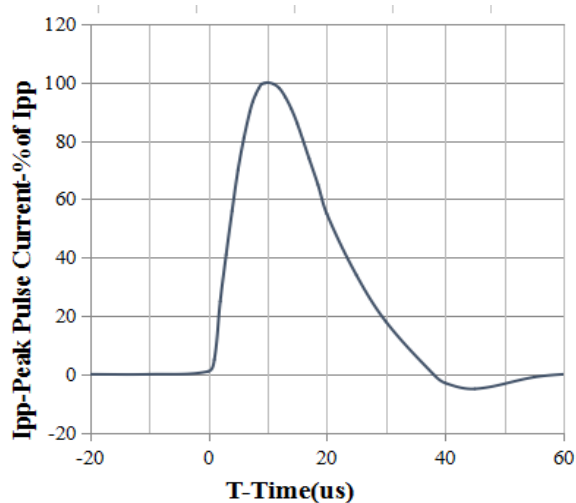
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



Power Derating Curve

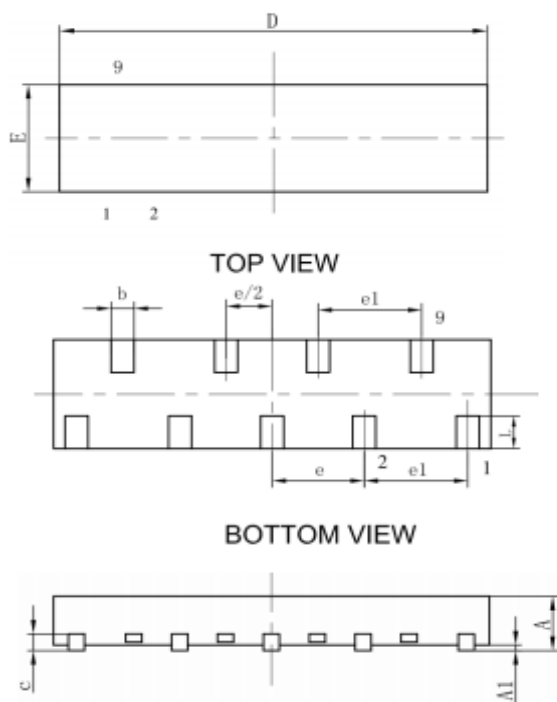


8 X 20 μs Pulse Waveform



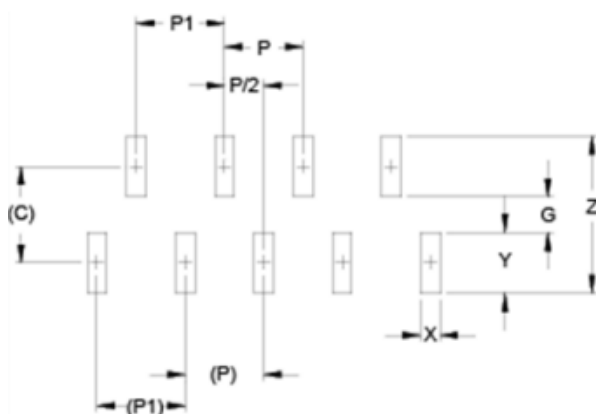
JLE05URD9-9

DFN3810-9 Package Outline Drawing (Dimensions in millimeters)



SYM	MILLIMETERS		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	—	0.02	0.05
b	0.15	0.20	0.25
c	0.10	0.15	0.20
D	3.70	3.80	3.90
e	0.80BSC		
e1	0.90BSC		
E	0.90	1.00	1.10
L	0.20	0.30	0.40

Suggested Land Pattern



DIMENSIONS	
DIM	MILLIMETERS
C	(0.95)
G	0.35
P	0.80
P1	0.90
X	0.20
Y	0.60
Z	1.55

NOTICE

Jelan-Link reserves the right to make changes without further notice to any products here in.

Only obligations are those in the Jelan-Link Standard Terms and Conditions of Sale and in no case will Jelan-Link be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of its products.