



JLE15URS5 -2

1-Line Uni-directional TVS Diode

Jialan-Microelectronics

Description

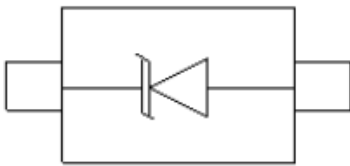
The JLE15URS5 -2 is an uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and ultra low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line.

The JLE15URS5 -2 complies with the IEC 61000-4-2 (ESD) with ± 30kV air and ± 30kV contact discharge. It is assembled into an ultra-small SOD-523 lead-free package. The small size and high ESD surge protection make JLE15URS5-2 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- * 350W peak pulse power (8/20µs)
- * Low leakage : nA level
- * Low operating voltage: 15V
- * Low clamping voltage
- * One power line protects
- * Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: ±30kV
 - Contact discharge: ±30kV
 - IEC61000-4-5 (Lightning) 11A (8/20µs)
- * RoHS Compliant

Circuit Diagram



Circuit and Pin Schematic

Applications

- * Cellular Handsets and Accessories
- * Personal Digital Assistants
- * Notebooks, Desktops, Servers
- * Portable Instrumentation
- * Video equipment
- * Printers
- * Analog Inputs
- * Video equipment
- * Communication systems
- * Laser Diode Protection

Ordering Information

Marking Diagram



Transparent top view

15E:Device Marking Code

Part Number	Packaging	Reel Size
JLE15URS5-2	3000/Tape & Reel	7 inch



JLE15URS5-2

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

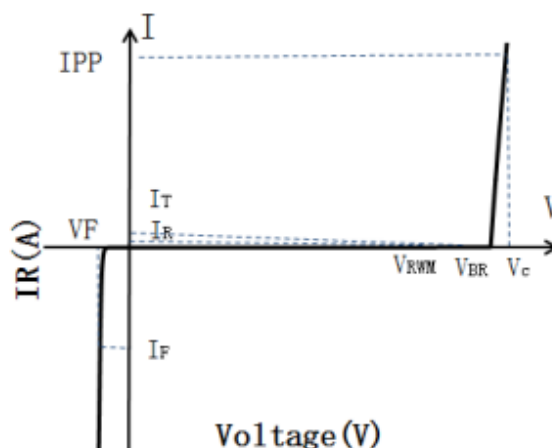
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	350	W
Peak Pulse Current (8/20 μs)	IPP	11	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55to +125	$^\circ\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				15	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	18			V
Reverse Leakage Current	I_R	$V_{RWM} = 15\text{V}$			0.2	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)			23	V
Clamping Voltage	V_C	$I_{PP} = 11\text{A}$ (8 x 20 μs pulse)			32	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$			80	pF

Portion Electronics Parameter

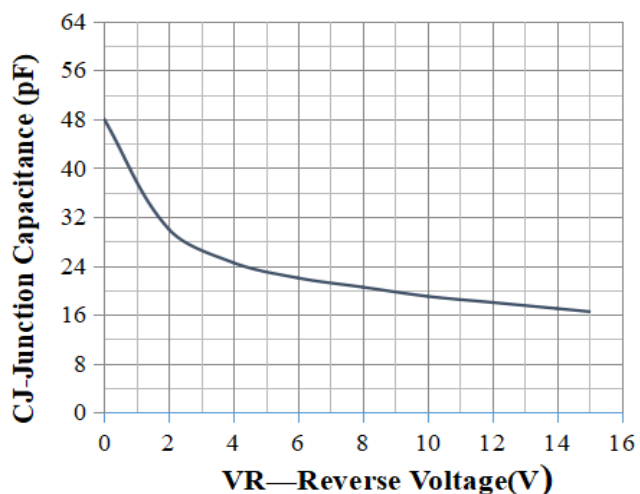
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_C



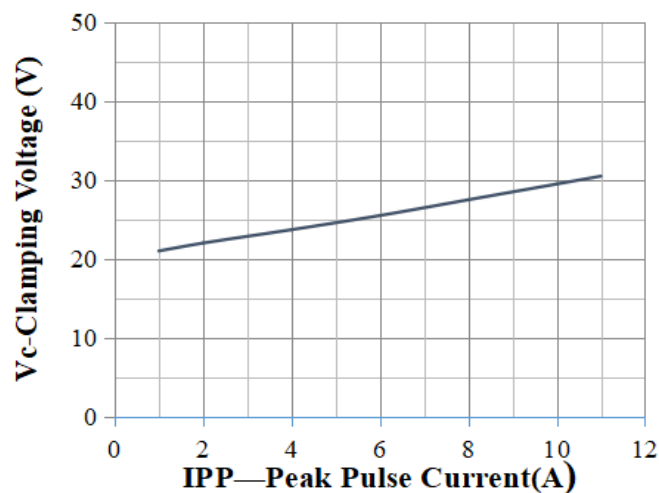


JLE15URS5-2

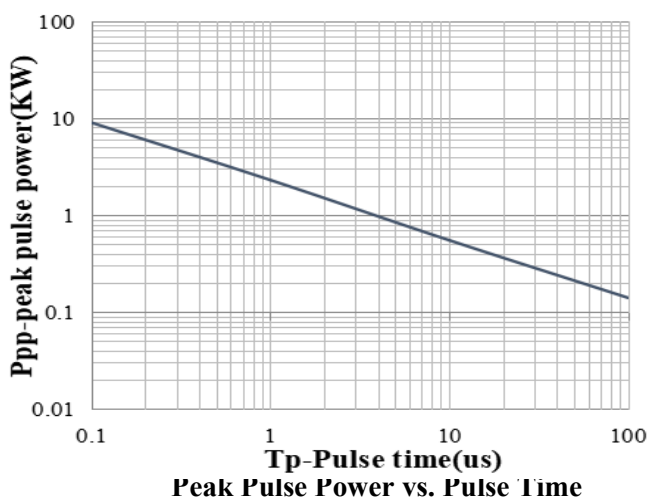
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



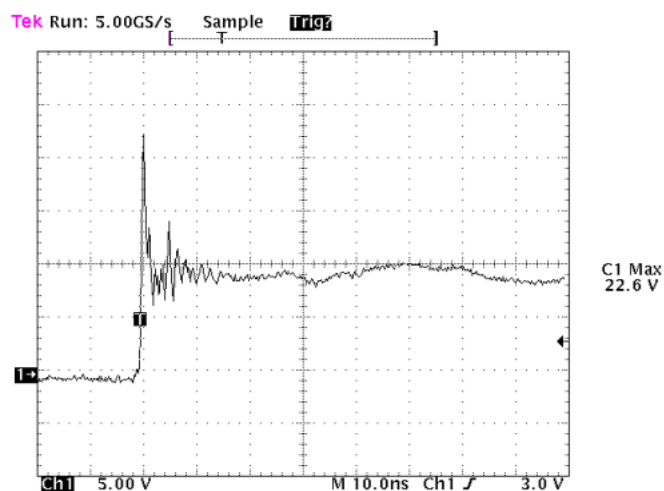
Junction Capacitance vs. Reverse Voltage



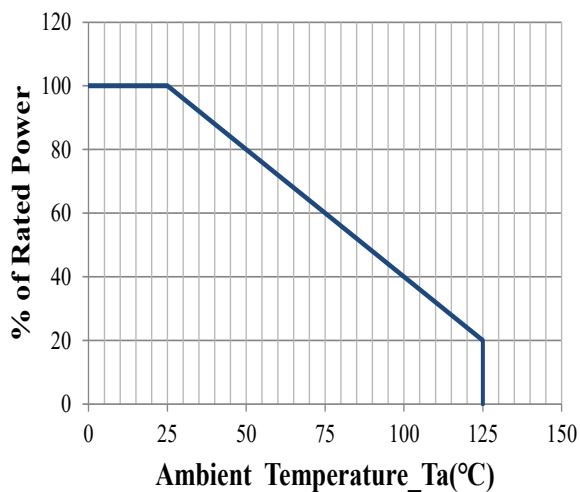
Clamping Voltage vs. Peak Pulse Current



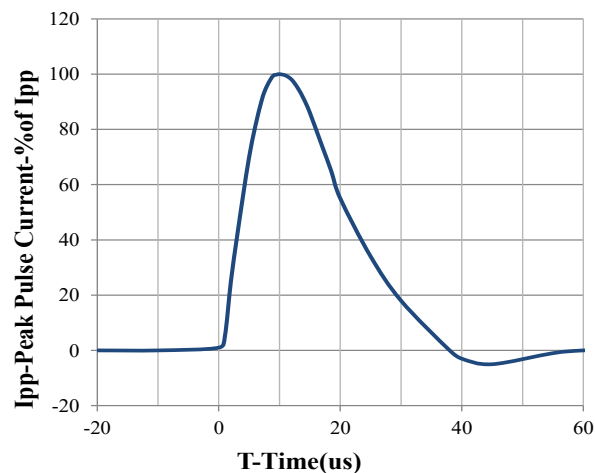
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



Power Derating Curve

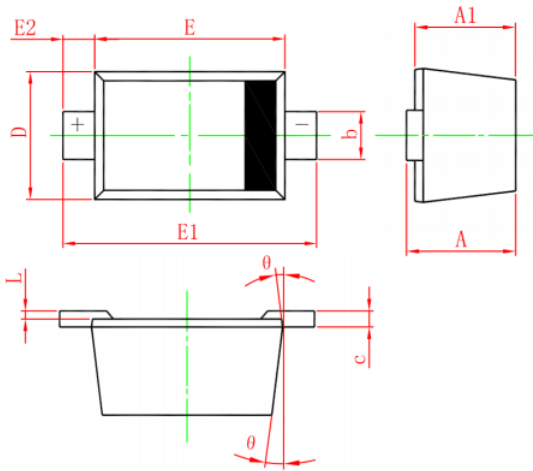


8 X 20us Pulse Waveform



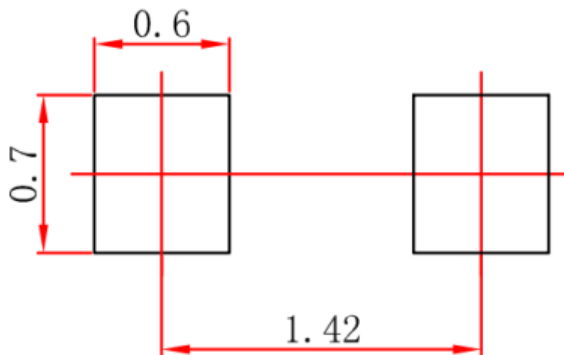
JLE15URS5-2

SOD-523 Package Outline Drawing (Dimensions in millimeters)



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.51	--	0.77	0.020	--	0.031
A1	0.50	--	0.70	0.020	--	0.028
b	0.25	--	0.35	0.010	--	0.014
c	0.08	--	0.15	0.003	--	0.006
D	0.75	--	0.85	0.030	--	0.033
E	1.10	--	1.30	0.043	--	0.051
E1	1.50	--	1.70	0.059		0.067
E2	0.20REF			0.008REF		
L	0.01	--	0.07	0.001	--	0.003
Θ	7° REF			7° REF		

Suggested Land Pattern



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