

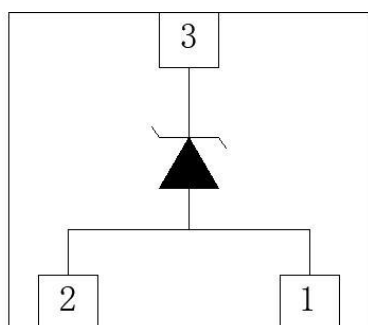
### Description

The SLES2411P4 is a high power 24V TVS diode, 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 lines. Small size, high surge capability of SLES2411P4 makes them ideal for use in applications such as cellular phones, LCD displays, USB, and multi media card interfaces.

### Features

- Peak pulse power (6500W @ 8/20us)
- Working voltage: 24 V
- Ultra low clamping voltage
- 3-pins leadless package
- RoHS Compliant

### Dimensions & Symbol (Unit: mm Max)



Circuit and Symbol definition

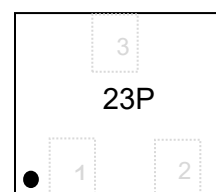
### Mechanical Characteristics

- Package: DFN2020-3L (2.0X2.0X0.6mm)
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020

### Applications

- Power Management
- Industrial Application
- Power Supply Protection

### Marking & Ordering information



Remark: 23P is normal marking, any special marks please contact with local salitech sales.

Part Number	Packaging	Reel Size
SLES2411P4	3000/Tape & Reel	7 inch

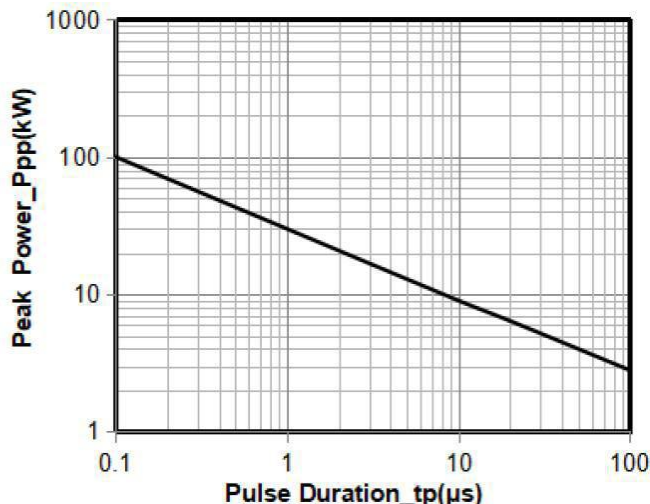
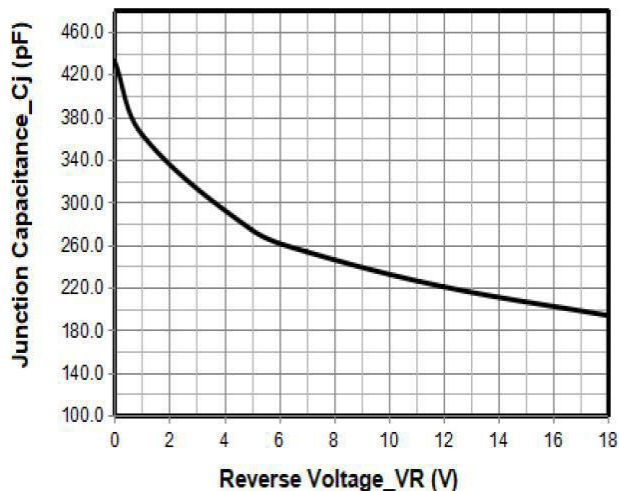
## Absolute maximum ratings ( $T_A=25^{\circ}\text{C}$ , RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power ( $t_p=8/20\mu\text{s}$ waveform)	$P_{pp}$	6500	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	$I_{pp}$	140	A
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	$T_J$	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^{\circ}\text{C}$

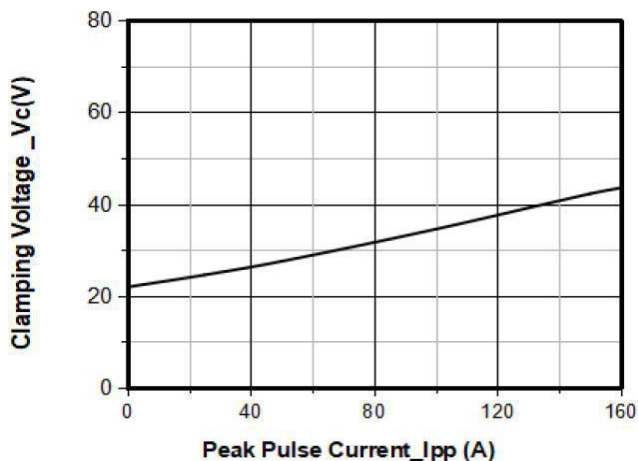
## Electrical characteristics ( $T_A=25^{\circ}\text{C}$ )

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	$V_{RWM}$			24	V	
Breakdown Voltage	$V_{BR}$	24.8			V	$I_T = 1\text{mA}$
Reverse Leakage Current	$I_R$			1.0	$\mu\text{A}$	$V_{RWM} = 24\text{V}$
Clamping Voltage	$V_C$			32	V	$I_{PP} = 50\text{A}$ (8 x 20 $\mu\text{s}$ pulse)
Clamping Voltage	$V_C$			50	V	$I_{PP} = 140\text{A}$ (8 x 20 $\mu\text{s}$ pulse)
Junction Capacitance	$C_J$		410		pF	$V_R = 0\text{V}$ , $f = 1\text{MHz}$

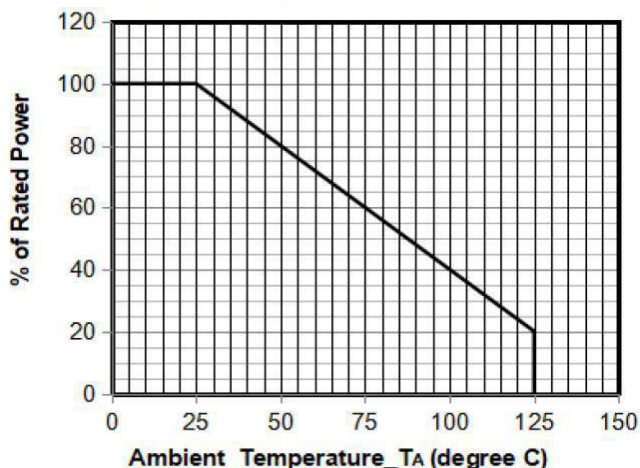
Typical Performance Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise Specified)



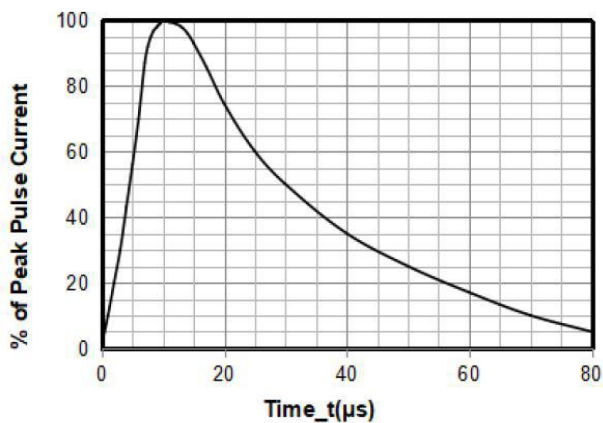
Novction Capacitance vs. Reverse Voltage



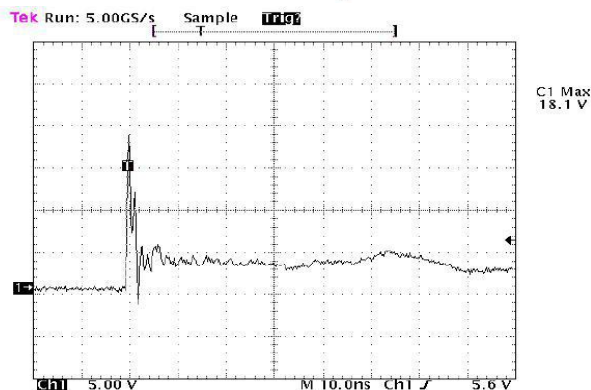
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



Note: Data is taken with a 10x attenuator

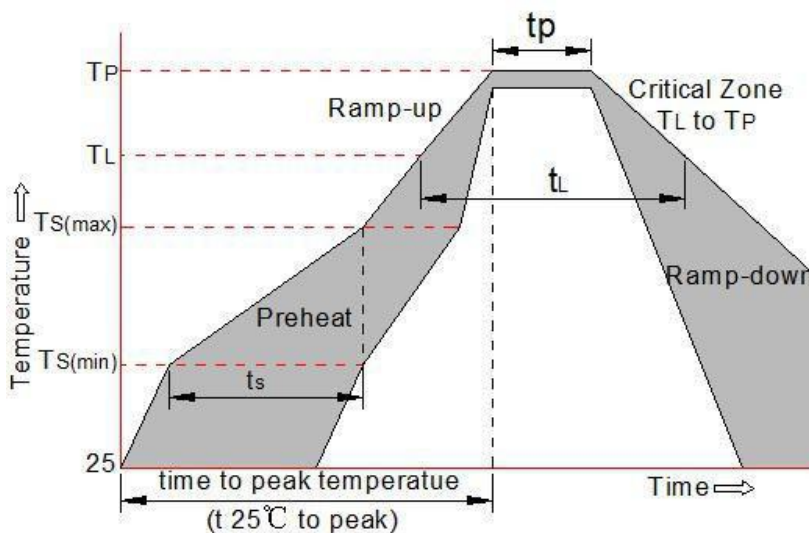
ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

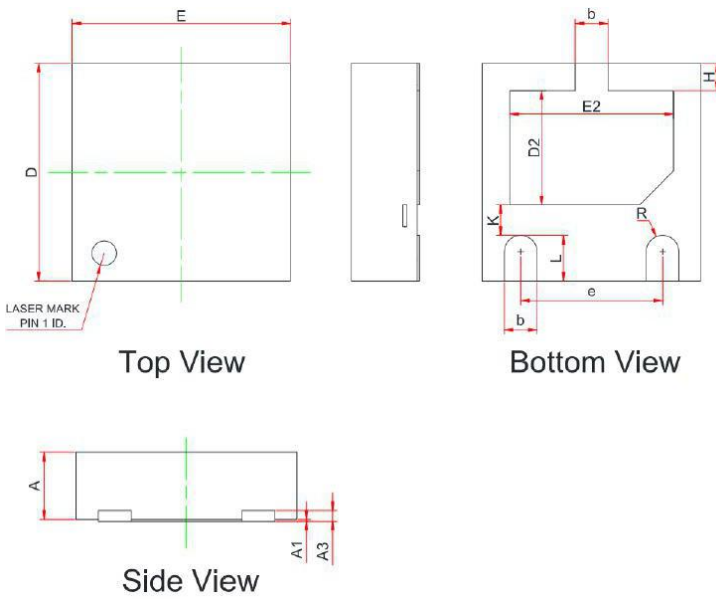
8 X 20μs Pulse Waveform

## Soldering Parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature( $T_L$ ) (Liquid us)	+217°C
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_p$ )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp ( $t_p$ )		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260°C

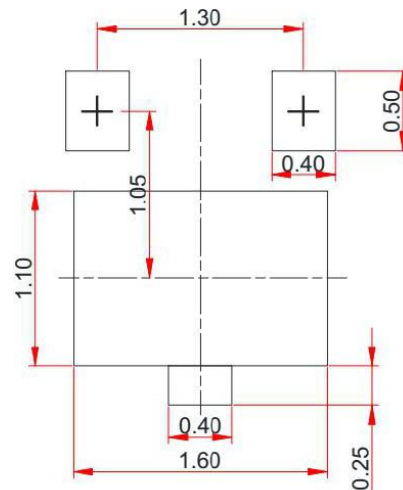


**Package Mechanical Data**



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.55	0.60	0.65
A1	0.00	0.02	0.05
A3	0.10REF		
b	0.25	--	0.35
D	1.90	--	2.10
E	1.90	--	2.10
D2	0.95	--	1.15
E2	1.40	--	1.60
e	1.20		1.40
H	0.20	--	0.30
K	0.20		0.40
L	0.35	--	0.45
R	0.13	--	--

**Suggested Land Pattern for PCB**



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