

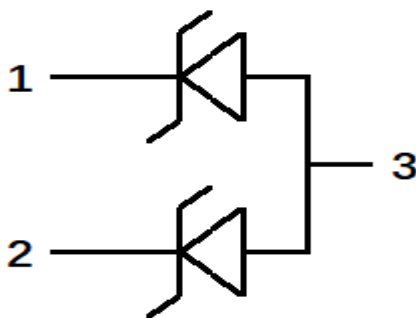
Features

- ◆ Ultra low leakage: nA level
- ◆ Operating voltage: 24V
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 20\text{kV}$
 - Contact discharge: $\pm 15\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 6A (8/20 μs)
- ◆ RoHS Compliant
- ◆ Package: SOT-23

Description

The ESDJ24UL0T1 is a Uni-directional 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 data and power line. The ESDJ24UL0T1 complies with the IEC 61000 -4 -2 standard with $\pm 20\text{ kV}$ air and $\pm 15\text{ kV}$ contact discharge. It is assembled into an ultra-small SOT-23 package. The small size and low capacitance protection make ESDJ24UL0T1 an ideal choice to protect Power and many other portable applications.

Circuit Diagram



Applications

- ◆ Wireless System
- ◆ Networks
- ◆ Portable Instrumentation
- ◆ RS485 Ports

Limiting Values(TA= 25 °C, unless otherwise specified)

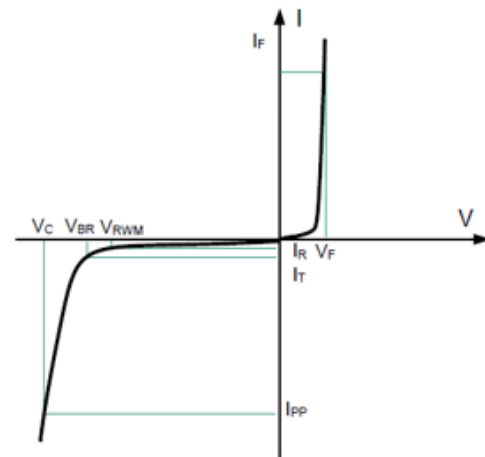
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	360	W
Peak Pulse Current (8/20μs)	IPP	6	A
ESD per IEC 61000-4-2 (Air)	VESD	±30	kV
ESD per IEC 61000-4-2 (Contact)		±30	
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

Electrical Characteristics(TA= 25 °C unless otherwise specified)

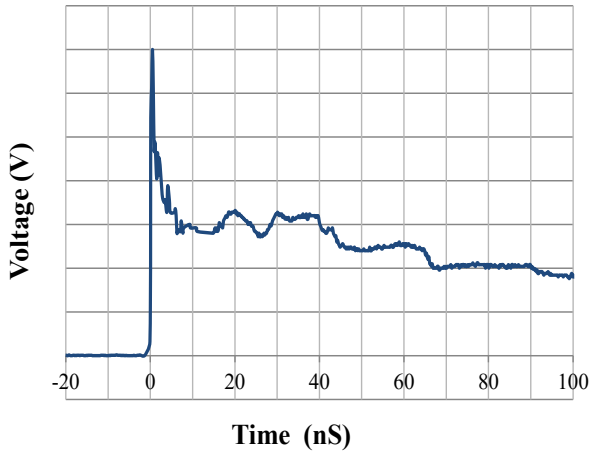
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V _{RWM}				24	V
Breakdown Voltage	V _{BR}	I _T = 1mA, Pin1/Pin2-Pin3	26.5		31	V
Breakdown Voltage	V _{BR}	I _T = 1mA, Pin1-Pin2	27		31.5	V
Reverse Leakage Current	I _R	V _{RWM} = 24V			0.1	μA
Clamping Voltage	V _C	I _{PP} = 1A (8 / 20μs pulse), Pin1/Pin2-Pin3			32	V
Clamping Voltage	V _C	I _{PP} = 6A (8 / 20μs pulse), Pin1/Pin2-Pin3			50	V
Clamping Voltage	V _C	I _{PP} = 1A (8 / 20μs pulse), Pin1-Pin2			43	V
Clamping Voltage	V _C	I _{PP} = 15A (8 / 20μs pulse), Pin1-Pin2			60	V
Junction Capacitance	C _J	V _R = 0V, f = 1MHz, Pin1/Pin2-Pin3		25	30	pF
Junction Capacitance	C _J	V _R = 0V, f = 1MHz, Pin1-Pin2		13	20	pF

Portion Electronics Parameter

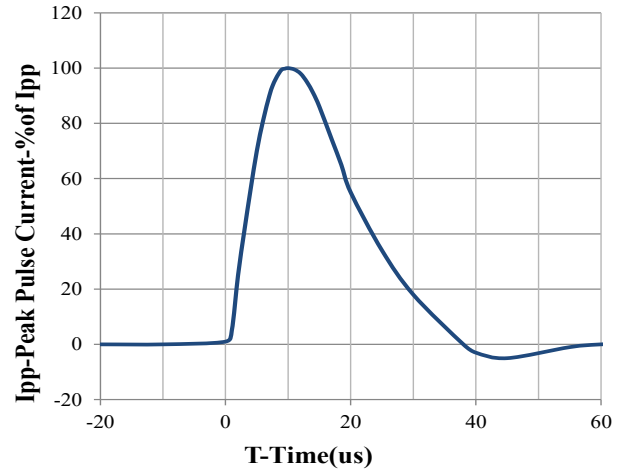
Symbol	Parameter
V _{RWM}	Peak Reverse Working Voltage
I _R	Reverse Leakage Current @ V _{RWM}
V _{BR}	Breakdown Voltage @I _T
I _T	Test Current
I _{PP}	Maximum Reverse Peak Pulse Current
V _C	Clamping Voltage @I _{PP}



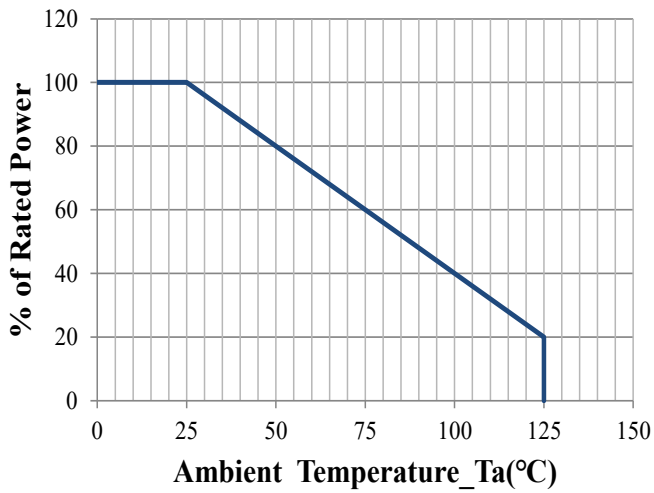
Typical Characteristics



IEC61000-4-2 Pulse Waveform

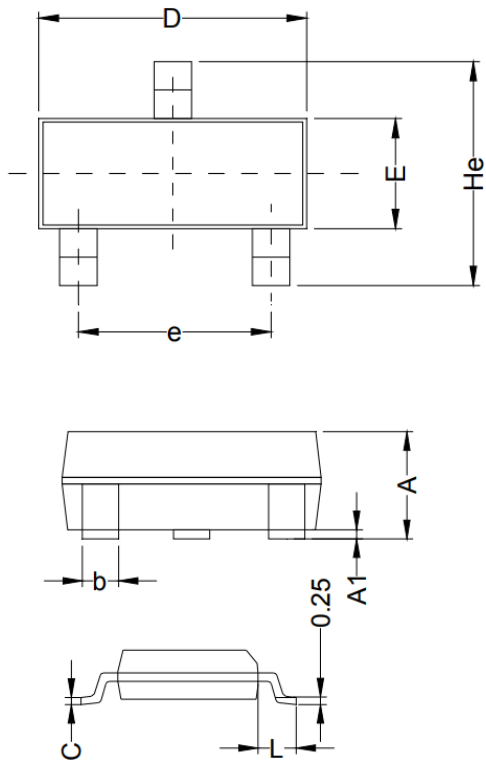


8 / 20us Pulse Waveform



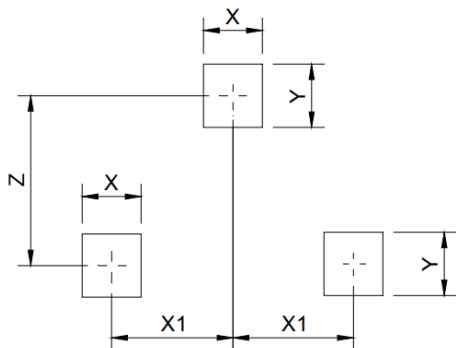
Power Derating Curve

SOT-23 Package Outline Drawing

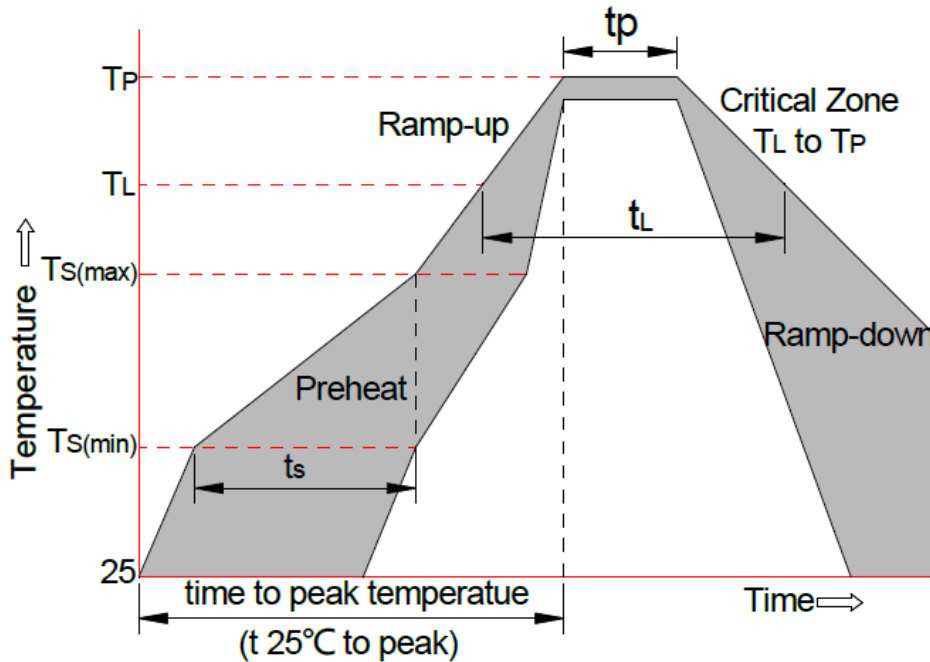


Symbol	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.90	1.063	1.15	0.035	0.042	0.045
A1	0.00	0.075	0.14	0.000	0.003	0.006
b	0.30	0.40	0.50	0.012	0.016	0.020
C	0.07	0.10	0.15	0.003	0.004	0.006
D	2.80	2.90	3.00	0.110	0.114	0.118
e	1.80	1.90	2.00	0.071	0.075	0.079
E	1.20	1.30	1.40	0.047	0.051	0.055
L	0.55REF			0.022REF		
He	2.25	2.40	2.55	0.089	0.094	0.100
X	0.80			0.031		
X1	0.95			0.037		
Y	0.80			0.031		
Z	2.02			0.080		

Suggested Land Pattern



Soldering Parameters



Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min (T_s (min))	+150°C
	-Temperature Max (T_s (max))	+200°C
	-Time (Min to Max) (t_s)	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/secs. Max
xTime 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C