

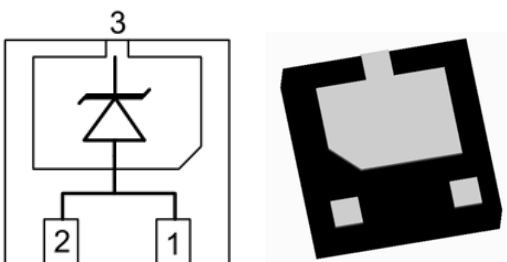
Features

- ◆ 7200W peak pulse power (8/20 μ s)
- ◆ Low leakage: nA level
- ◆ Low operating voltage: 24V
- ◆ Ultra low clamping voltage
- ◆ One power line protects
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: ± 30 kV
 - Contact discharge: ± 30 kV
 - IEC61000-4-5 (Lightning) 120A (8/20 μ s)
- ◆ RoHS Compliant
- ◆ Package: DFN2020-3, 2.0mm*2.0mm* 0.55mm
- ◆ Lead finish: lead free

Description

The ESDJ24UG1D5 is a high power TVS, 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. It is assembled into a 3-pin DFN2020-3 lead-free package. The leads are finished with NiPdAu. Each device will protect one line. The combination of small size, and high surge capability makes them ideal for use in applications such as cellular phones, LCD displays, USB, and multi media card interfaces.

Circuit Diagram



Applications

- ◆ Power Management
- ◆ Industrial Application
- ◆ Power Supply Protection
- ◆ Many other portable devices

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

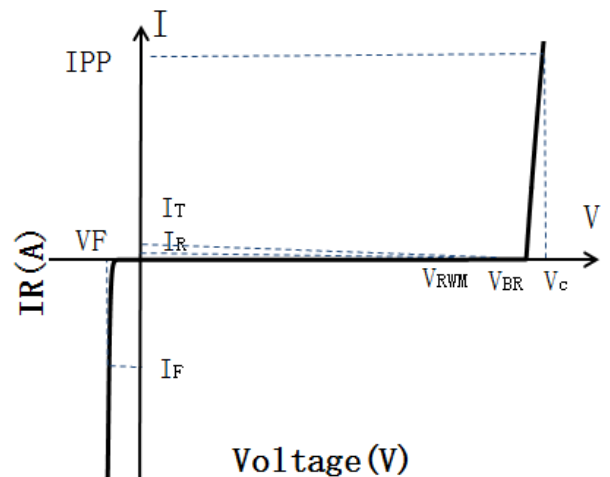
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20µs)	Ppk	7200	W
Peak Pulse Current (8/20µs)	IPP	120	A
ESD per IEC 61000-4-2 (Air)	VESD	±30	kV
ESD per IEC 61000-4-2 (Contact)		±30	
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

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

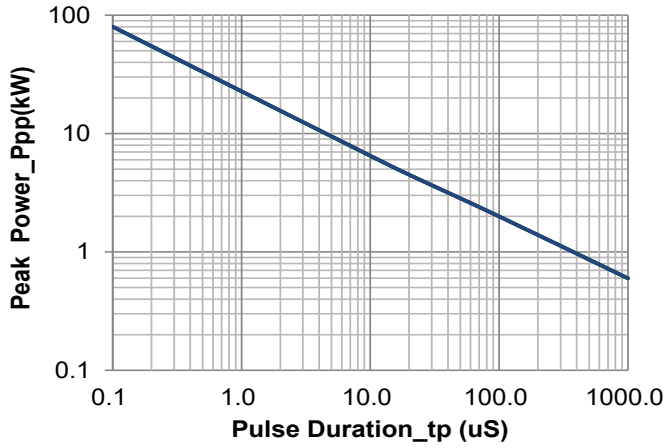
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	VRWM				24.0	V
Breakdown Voltage	VBR	IT = 1mA	26.0	27.0	30.0	V
Reverse Leakage Current	IR	VRWM = 24V			1.0	µA
Clamping Voltage	VC	IPP = 1A (8 / 20µs pulse)			35.0	V
Clamping Voltage	VC	IPP = 120A (8 / 20µs pulse)			60.0	V
Junction Capacitance	CJ	VR = 0V, f = 1MHz		750		pF

Portion Electronics Parameter

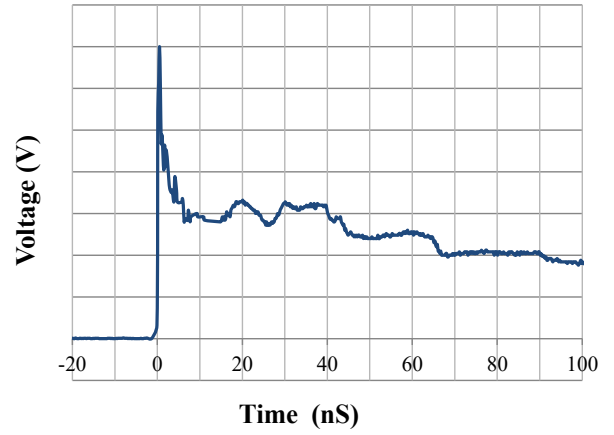
Symbol	Parameter
VRWM	Peak Reverse Working Voltage
IR	Reverse Leakage Current @ VRWM
VBR	Breakdown Voltage @IT
IT	Test Current
IPP	Maximum Reverse Peak Pulse Current
VC	Clamping Voltage @IPP
VF	Forward Voltage @IF



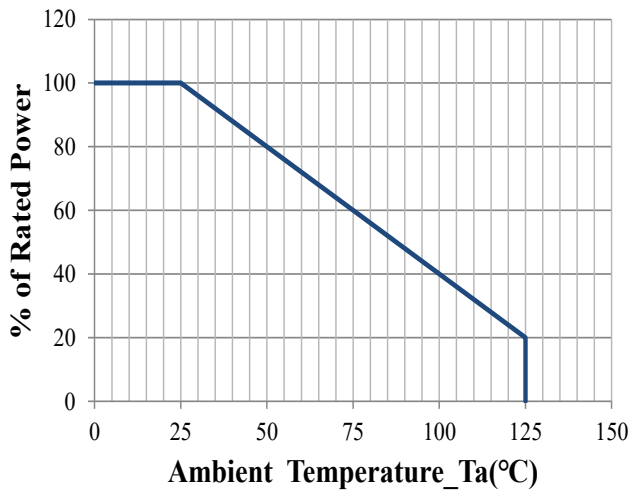
Typical Characteristics



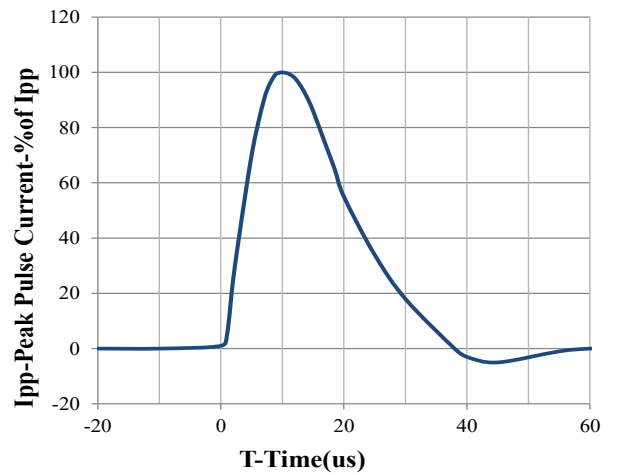
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

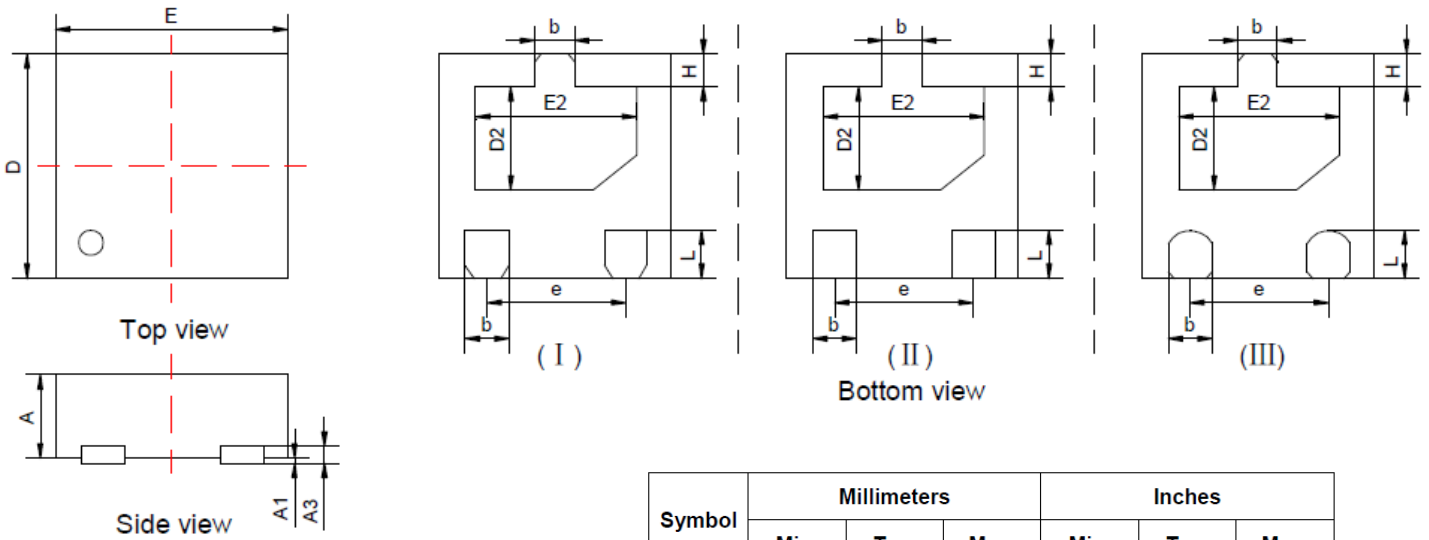


Power Derating Curve



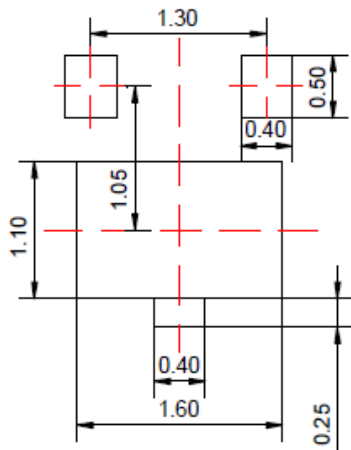
8 X 20us Pulse Waveform

DFN2020-3 Package Outline Drawing

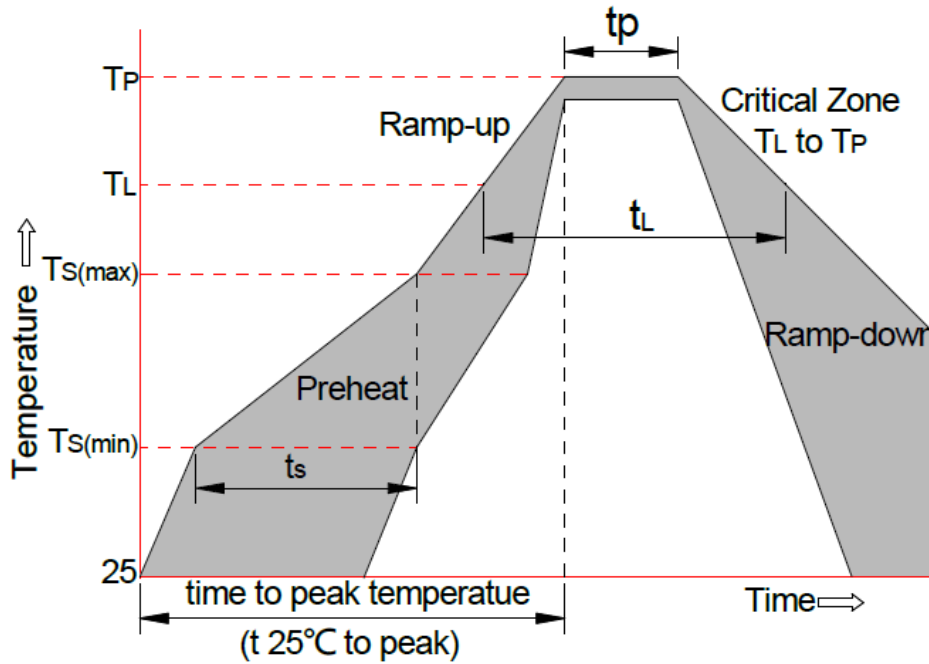


Symbol	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.45	0.50	0.60	0.018	0.020	0.024
A1	0.00	0.02	0.05	0.000	0.001	0.002
A3	0.15REF			0.006REF		
b	0.25	0.30	0.35	0.010	0.012	0.014
D	1.90	2.00	2.10	0.075	0.079	0.083
E	1.90	2.00	2.10	0.075	0.079	0.083
D2	0.85	1.05	1.15	0.033	0.041	0.045
E2	1.40	1.50	1.60	0.055	0.059	0.063
e	1.30BSC			0.051BSC		
H	0.20	0.25	0.30	0.008	0.010	0.012
L	0.35	0.40	0.45	0.014	0.016	0.018

Suggested Land Pattern



Soldering Parameters



Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min (Ts (min))	+150°C
	-Temperature Max (Ts (max))	+200°C
	-Time (Min to Max) (ts)	60-180 secs
Average ramp up rate(Liquid us Temp (TL) to peak)		3°C/sec. Max
Ts (max) to TL-Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature (TL) (Liquid us)	+217°C
	-Temperature (tL)	60-150 secs
Peak Temp (Tp)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (tp)		30 secs. Max
Ramp-down Rate		6 °C/secs. Max
xTime 25°C to Peak Temp (TP)		8 min. Max
Do not exceed		+260°C