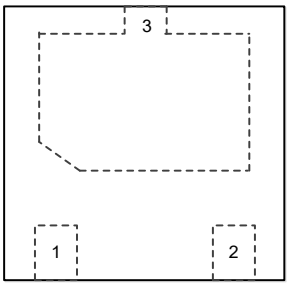
Description

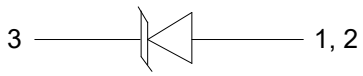
The D24V0S1U3LP20-7-CN is a high power TVS, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive lines.
The D24V0S1U3LP20-7-CN complies with the IEC 61000-4-2 (ESD) with ±30kV air and ±30kV contact discharge. It is assembled into a 3-pin DFN2020-3 lead-free package. 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.



DFN2020-3 Pin configuration

Features

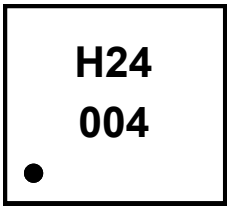
- Low leakage: nA level
- Low operating voltage: 24V
- Ultra low clamping voltage
- One power line protects
- Complies with following standards:
  – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  – IEC61000-4-5 (Lightning) 140A (8/20μs)
- RoHS Compliant



Circuit diagram

Mechanical Characteristics

- Package: DFN2020-3
- Case Material: “Green” Molding Compound
- Terminal Connections: See Diagram Below
- Marking Information: See Below



H24= Series code
004= Device code
The larger black dot denotes pin 1

Marking (Top View)

Applications

- Power Management
- Industrial Application
- Power Supply Protection

Ordering Information

Part Number	Packaging	Reel Size
D24V0S1U3LP20-7-CN	3000/Tape & Reel	7 inch

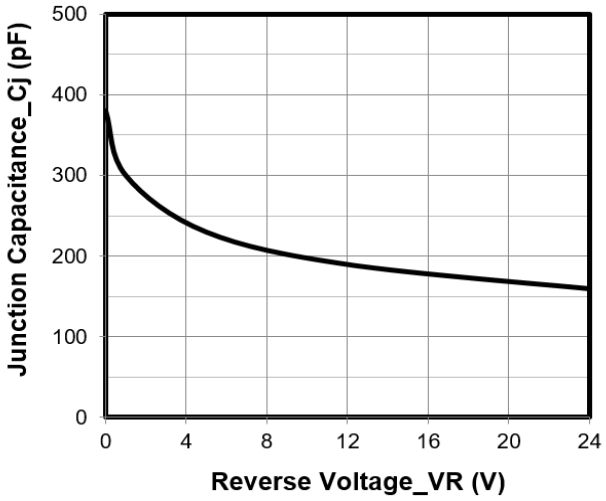
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	6440	W
Peak Pulse Current (8/20μs)	I_{PP}	140	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

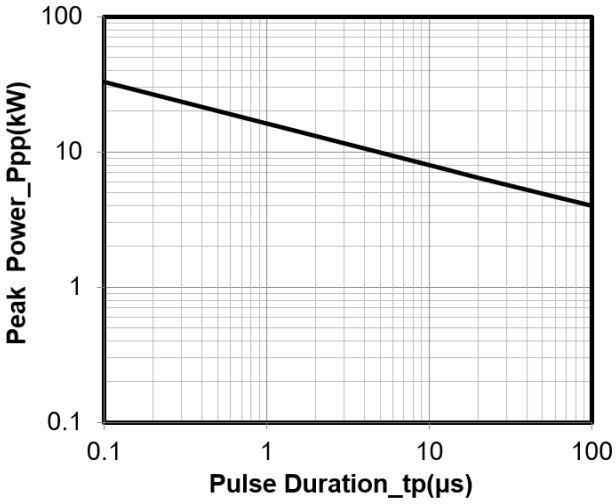
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}		24		V	
Breakdown Voltage	V_{BR}	24.8			V	I_T = 1mA
Reverse Leakage Current	I_R			1.0	μA	V_{RWM} = 24V
Clamping Voltage	V_C			35	V	I_{PP} = 50A (8 x 20μs pulse)
Clamping Voltage	V_C			46	V	I_{PP} = 140A (8 x 20μs pulse)
Junction Capacitance	C_J		380		pF	VR = 0V, f = 1MHz

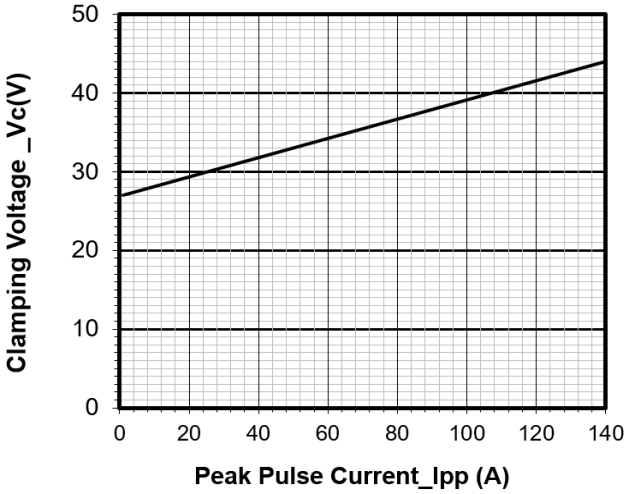
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



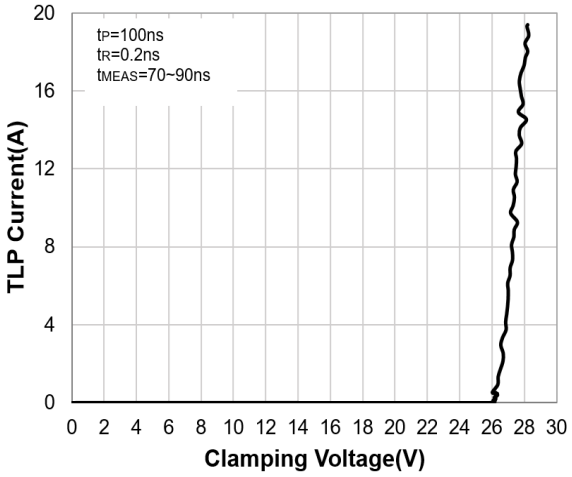
Junction Capacitance vs. Reverse Voltage



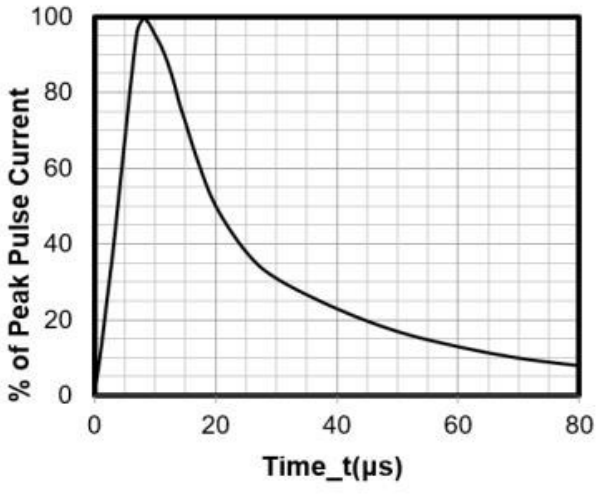
Peak Pulse Power vs. Pulse Time



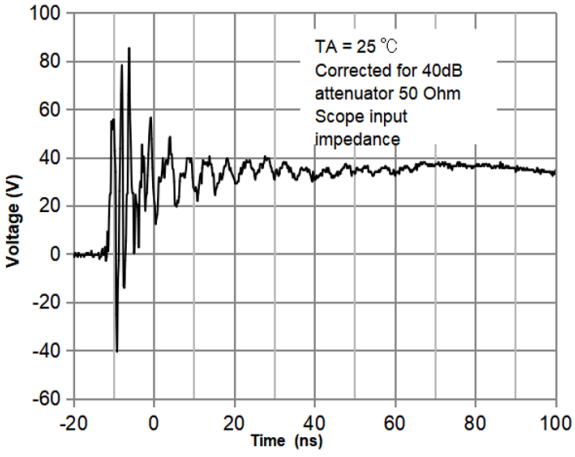
Clamping Voltage vs. Peak Pulse Current



TLP Curve

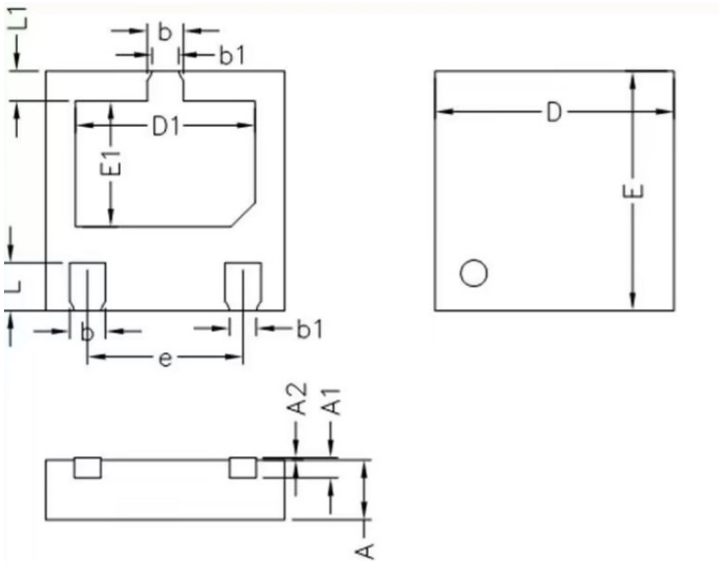


8 X 20μs Pulse Waveform



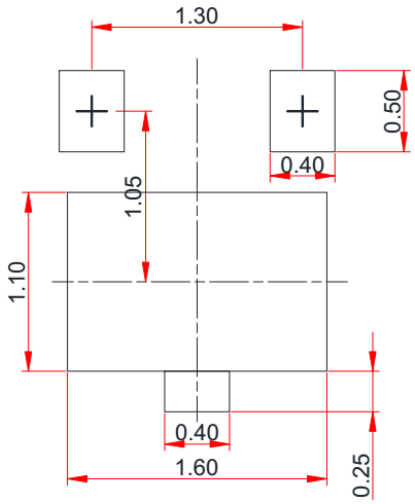
ESD Clamping Voltage
8 kV Contact per IEC61000−4−2

DFN2020-3 Package Outline Drawing



SYM	MILLIMETERS		
	MIN	NOM	MAX
D	1.95	2.00	2.05
E	1.95	2.00	2.05
D1	1.45	1.50	1.55
E1	1.00	1.05	1.10
L1	0.20	0.25	0.30
L	0.35	0.40	0.45
b1	0.22REF		
b	0.25	0.30	0.35
e	1.30BSC		
A1	0.15REF		
A2	0.00	0.02	0.05
A	0.45	0.50	0.55

Suggested Land Pattern



Unit：mm

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