

Description

The ESD4V5J901TAP 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.

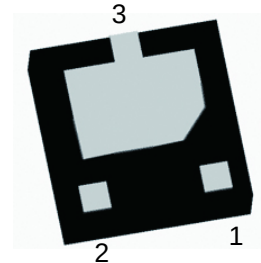
Features

- Stand-off voltage: $\pm 4.5\text{V}$ Max
- Transient protection for each line according to IEC61000-4-2 (ESD): $\pm 30\text{kV}$ air discharge $\pm 30\text{kV}$ contact discharge IEC61000-4-5 (surge): 300A (8/20 μs)
- Solid-state silicon technology
- Package: DFN2020-3, 2.0mm*2.0mm*0.55mm

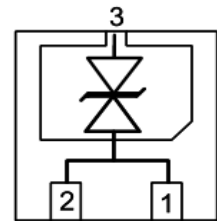
Applications

- Computers
- Printers
- Communication systems
- Cellular phones handsets and accessories
- Wireline and wireless telephone sets
- Set top boxes

DFN2020-3



PIN CONFIGURATION



Order information

Device	Package	Shipping	Mark
ESD4V5J901TAP	DFN2020-3	3000/Tape&Reel	4.5H

Absolute maximum ratings

Parameter	Symbol	Rating	Unit
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	5000	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	300	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 30	kV
ESD according to IEC61000-4-2 contact discharge		± 30	
Operation junction temperature	T_J	-55~125	$^{\circ}C$
Lead temperature	T_L	260	$^{\circ}C$
Storage temperature	T_{STG}	-55~150	$^{\circ}C$

Electrical characteristics (TA=25 $^{\circ}C$,unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				± 4.5	V
Reverse leakage current	I_R	$V_{RWM} = 4.5V$			3.0	μA
Reveres breakdown voltage	V_{BR}	$I_T = 1mA$	4.8	5.5	6.5	V
Clamping voltage	V_C	$I_{pp} = 100A$ $t_p = 8/20\mu s$			9.5	V
		$I_{pp} = 300A$ $t_p = 8/20\mu s$			17.0	V
Junction capacitance	C_J	$V_R = 0V$, $f = 1MHz$		900	1000	pF

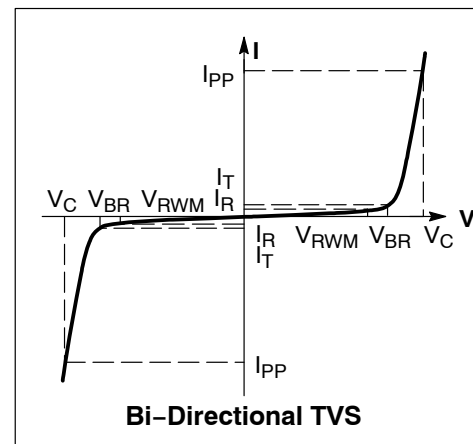
Electrical performance curve

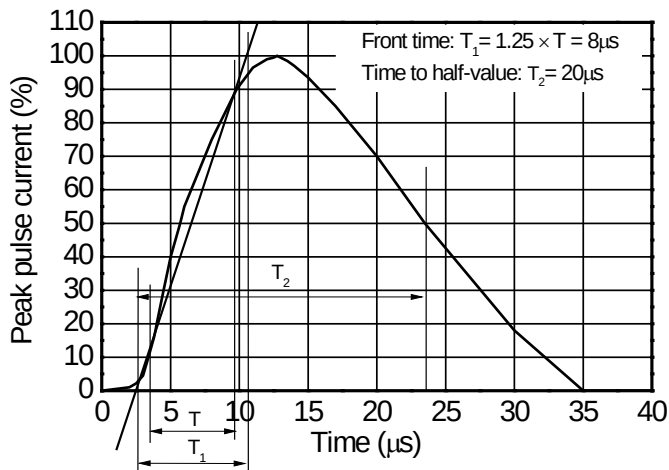
V_C : Maximum clamping voltage

V_{br} : Reverse breakdown voltage

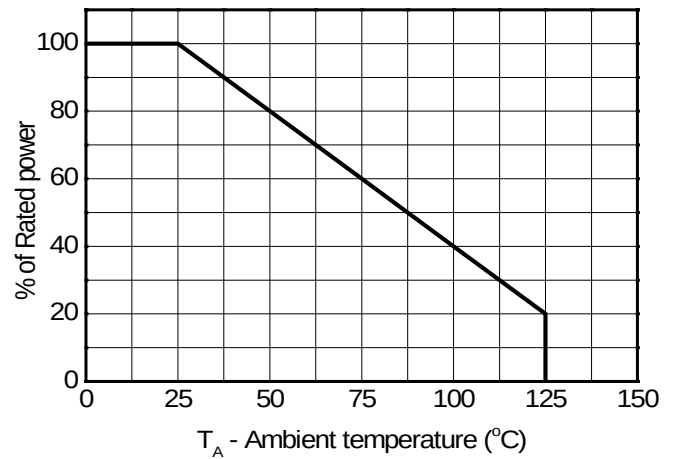
V_{RWM} : Working voltage

I_{PP} : Maximum peak current

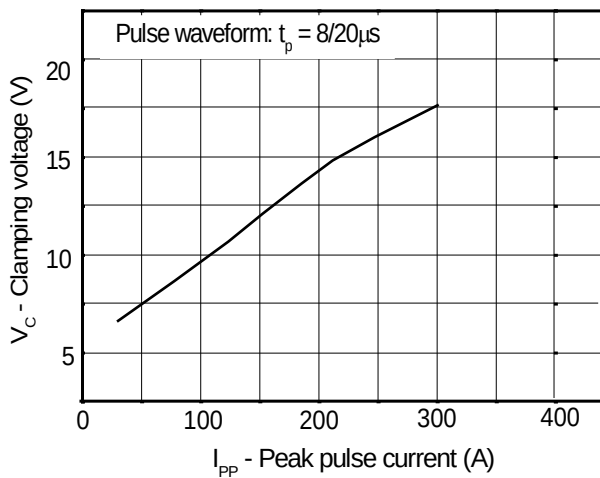




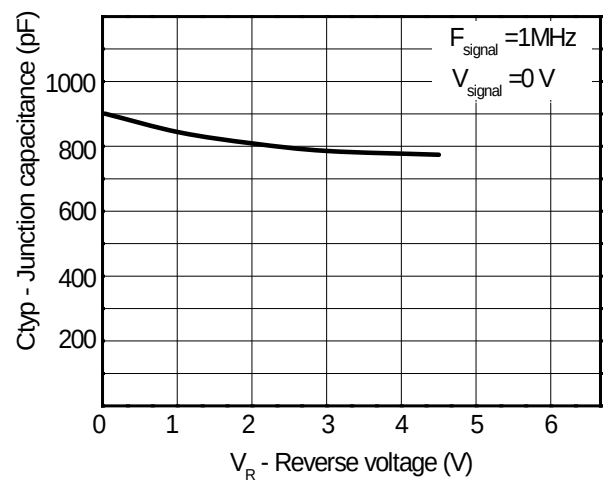
8/20μs waveform per IEC61000-4-5



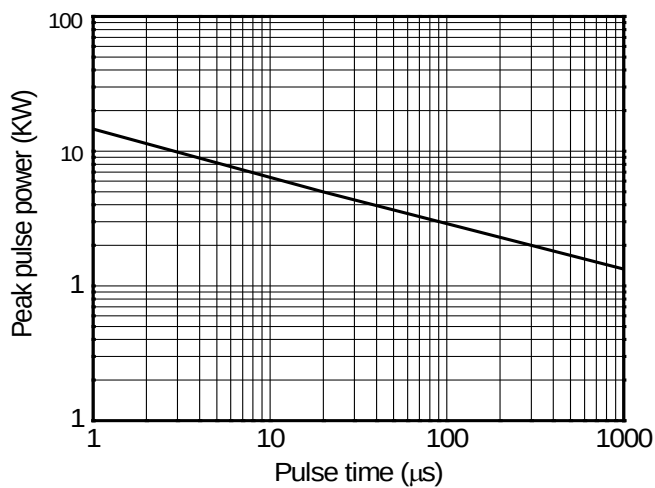
Power derating vs. Ambient temperature



Clamping voltage vs. Peak pulse current

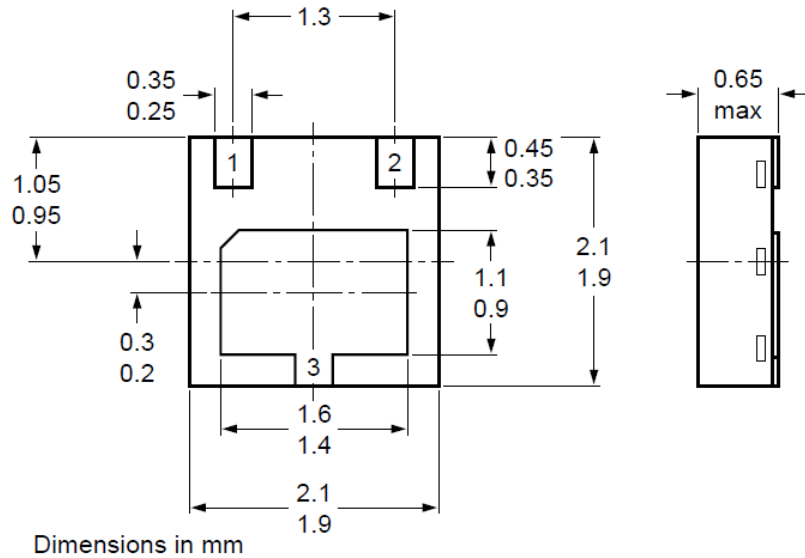


Capacitance vs. Reverse voltage

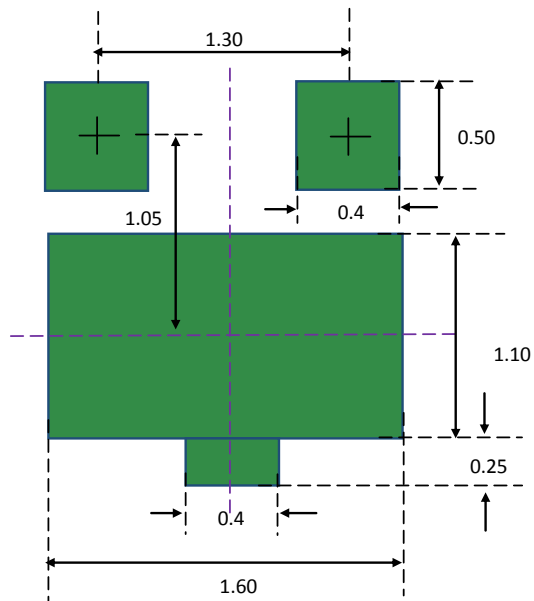


Non-repetitive peak pulse power vs. Pulse time

DFN2020-3 Package Outline Drawing



Suggested Land Pattern



Braid information

