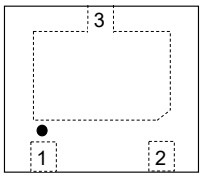
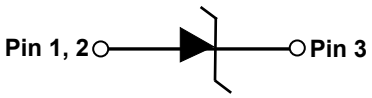
Transient Voltage Suppressors for ESD Protection

Description

The SXTVSHC3N24VU protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. They feature large cross-sectional area junctions for conducting high transient currents, offer desirable electrical characteristics for board level protection, such as fast response time, low operating voltage. It gives designer the flexibility to protect one bi-directional line in applications where arrays are not practical.

DFN2020-3L





Feature

6000W Peak pulse power per line (t_P = 8/20μs)
DFN2×2-3L package
Response time is typically < 1 ns
Protect one I/O or power line
RoHS compliant
Transient protection for data lines to
IEC 61000-4-2(ESD) ±30KV(air), ±30KV(contact);
IEC 61000-4-4 (EFT) 80A (5/50ns),
IEC 61000-4-5 (Lightning) 110A (8/20us)

Mechanical Characteristics

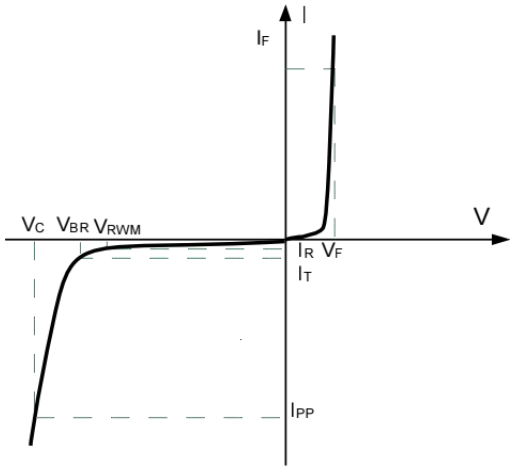
Lead finish:100% matte Sn(Tin)
Mounting position: Any
Qualified max reflow temperature:260℃
Pure tin plating: 7 ~ 17 um

Applications

Cell phone handsets and accessories
Personal digital assistants (PDA's)
Notebooks, desktops, and servers
Portable instrumentation
Cordless phones
Digital cameras
Peripherals
MP3 players

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}
P_{PP}	Peak Pulse Power
C_J	Junction Capacitance
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical characteristics per line@25℃(unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}				24	V
Breakdown Voltage	V_{BR}	I_t =1mA	25	27	30	V
Reverse Leakage Current	I_R	V_{RWM} =24V			1	μA
Maximum Reverse Peak Pulse Current	I_{PP}			110		A
Clamping Voltage	V_C	I_{PP}=70A t_P = 8/20μs		45	48	V
Clamping Voltage	V_C	I_{PP}=100A t_P = 8/20μs		51	54	V
Junction Capacitance	C_j	V_R=0V f = 1MHz		635	680	pF

Notes ： Measured from pin 3 to pin 1 and pin 2.

Absolute maximum rating@25℃

Rating	Symbol	Value	Units
Peak Pulse Power (t_P = 8/20μS)	P_{pp}	6000	W
Lead Soldering Temperature	T_L	260 (10 sec)	℃
Operating Temperature	T_J	-55 to +150	℃
Storage Temperature	T_{STG}	-55 to +150	℃

Typical Characteristics

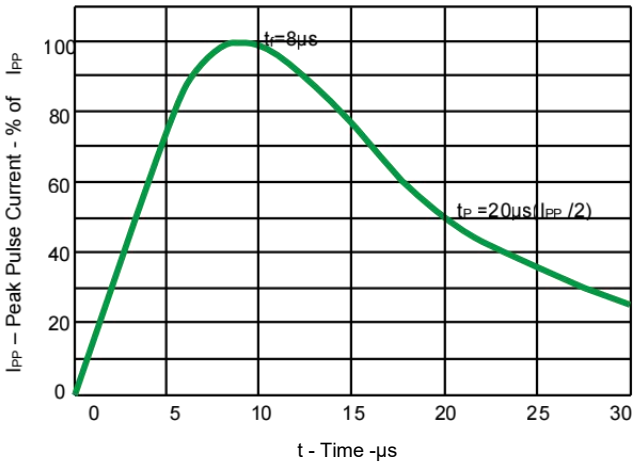


Fig 1.Pulse Waveform

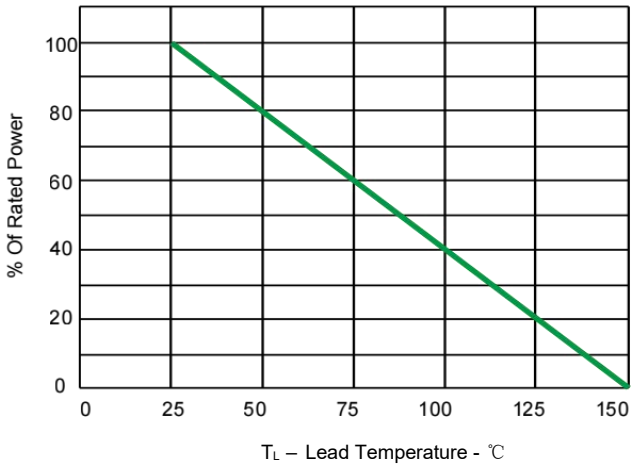


Fig 2.Power Derating Curve

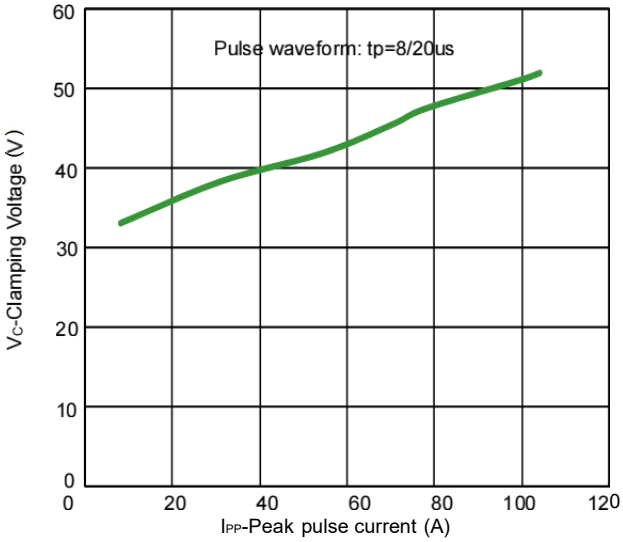


Fig 3. Clamping voltage vs. Peak pulse current

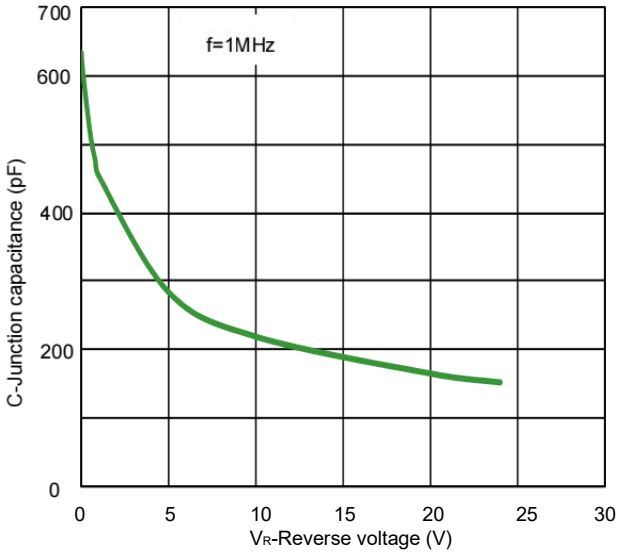


Fig 4. Capacitance vs. Reveres voltage

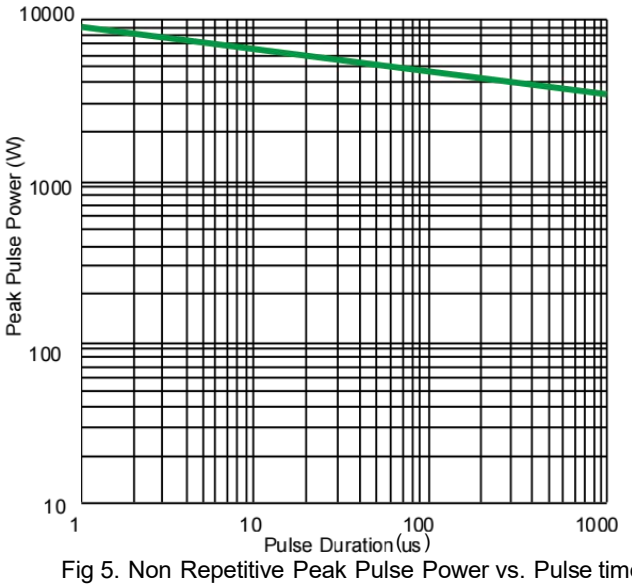


Fig 5. Non Repetitive Peak Pulse Power vs. Pulse time

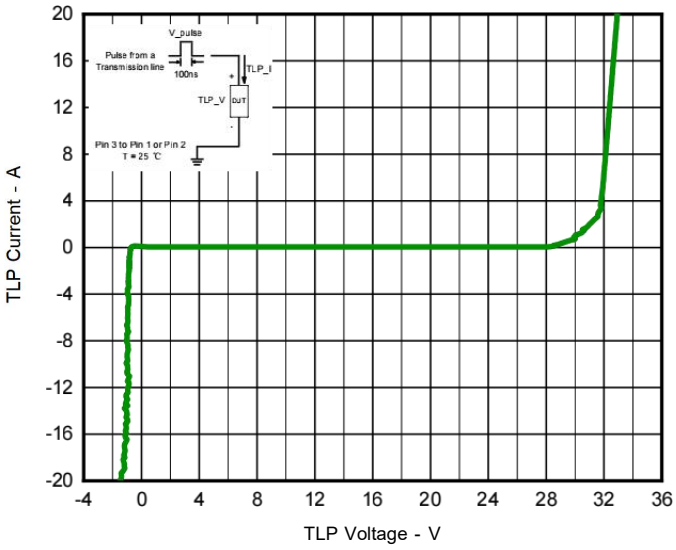
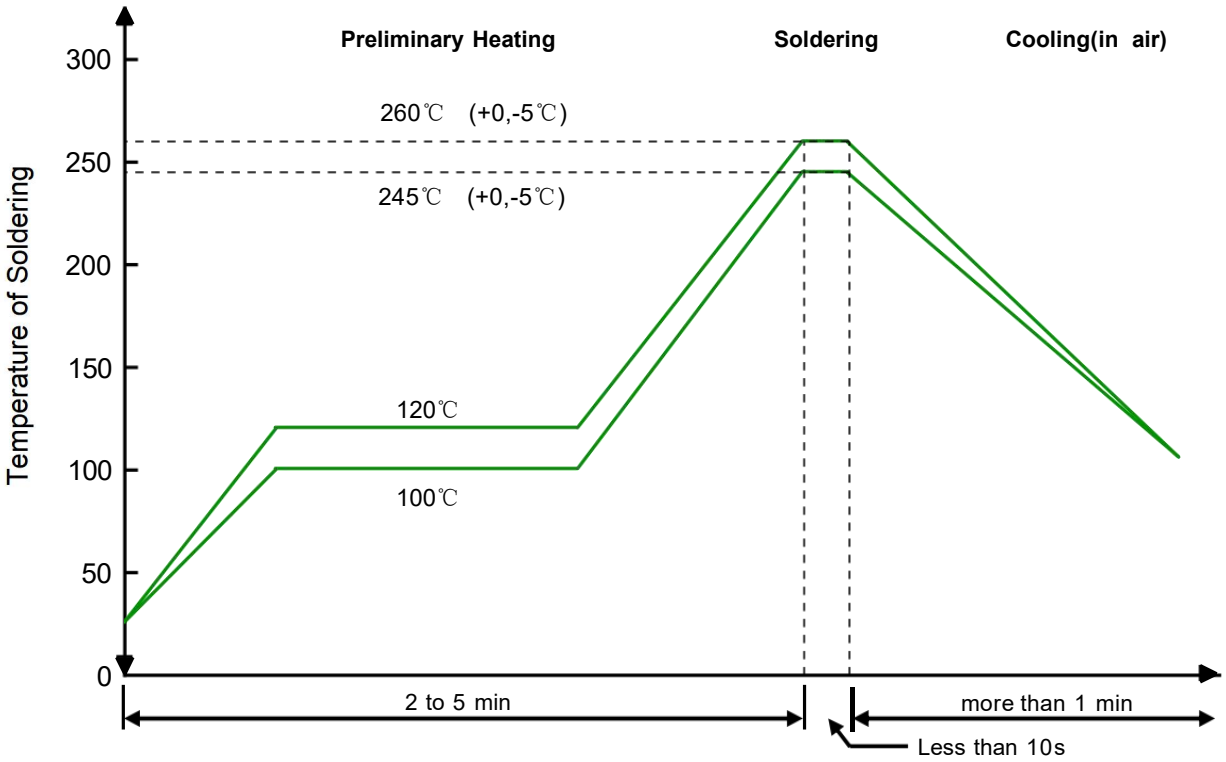


Fig 6. TLP Measurement

Solder Reflow Recommendation

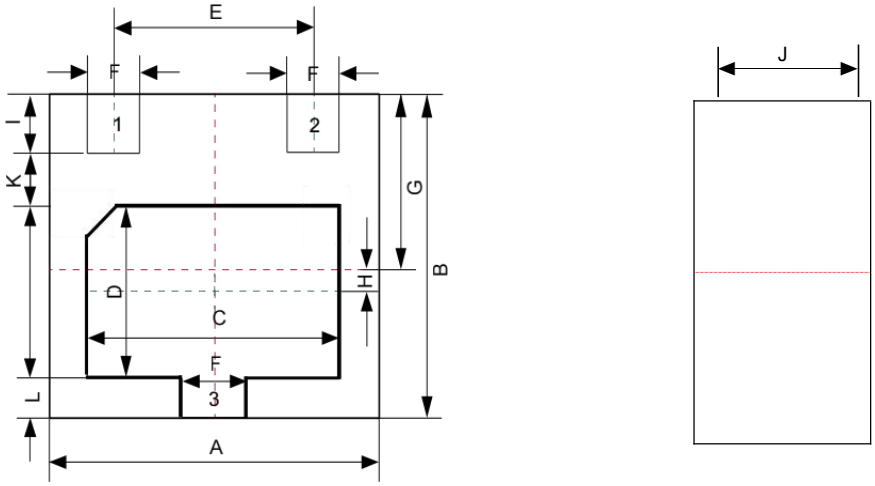


Remark: Pb free for 260℃; Pb for 245℃.

Ordering information

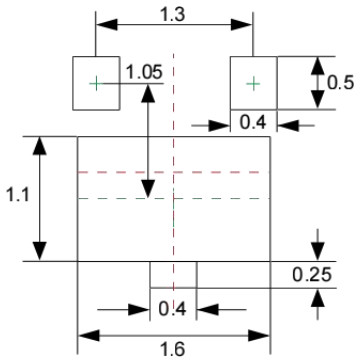
Device	Package	Reel	Shipping
TAPING	DFN2×2-3L (Pb-Free)	7"	3000 / Tape & Reel

Product dimension (DFN2×2-3L)



Bottom View

Dim	Millimeters	
	MIN	MAX
A	1.90	2.10
B	1.90	2.10
C	1.40	1.60
D	0.90	1.10
E	1.30BSC	
F	0.25	0.35
G	0.95	1.05
H	0.20	0.30
I	0.35	0.45
J		0.65
K	0.30	0.35
L	0.15	0.20



Unit:mm

Recommended Soldering Pad