

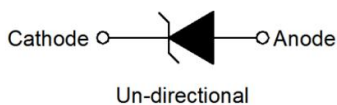
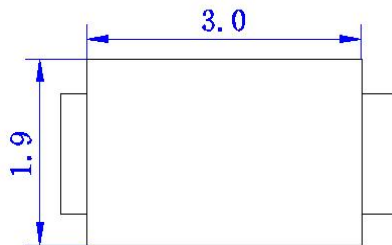
Description

Transient voltage suppression diodes, also known as TVS diodes, are protective electronic parts that protect electrical equipment from voltage spikes introduced by wires.

Features

- For surface mounted applications
- Excellent clamping capability
- 6400 W peak pulse power capability with a 8/20 μ s Waveform.
- V_{RWM} 24V
- Low profile package and low inductance
- IEC-61000-4-2 ESD 30KV(Air),30KV(Contact)
- Fast response time: typically less than 1.0ps from 0V to V_{BR} min.

Dimensions & Symbol(Unit: mm Max)



Applications

- computer system
- domestic appliance
- video input

Mechanical Characteristics

- Package: SMF/SOD-123FL
- Case Material:Molded Plastic. UL Flammability Classification Rating 94V-0 .RoHS compliant
- Moisture Sensitivity: Meet MSL 1
- Terminal: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode except bi-directional models
- Weight: 0.017g(approximate)

Marking Information



EIZ:PTVSHC1TF24VU Marking code

Ordering information

Out line	Reel (pcs)	Percartn (pcs)	Reel diameters
Taping	3K	270K	7inch

Electrical Characteristics (T=25°C)

Part Number	Reverse Stand off Voltage VRWM (Volts)	Breakdown Voltage VBR(Volts)@IT		Test Current IT (mA)	Maximum Clamping Voltage Vc@IPP (Volts)	Maximum Peak Pulse Current Ipp (Amps)	Maximum Reverse Leakage IR@VRWM (μA)
		MIN	MAX				
PTVSHC1TF24VU	24	25	28.5	1	32	200	1

Notes:

① Surge waveform: 8/20μs

V_R : Stand-off Voltage -- Maximum voltage that can be applied

V_{BR}: Breakdown Voltage

V_C: Clamping Voltage -- Peak voltage measured across the suppressor at a specified Ipp

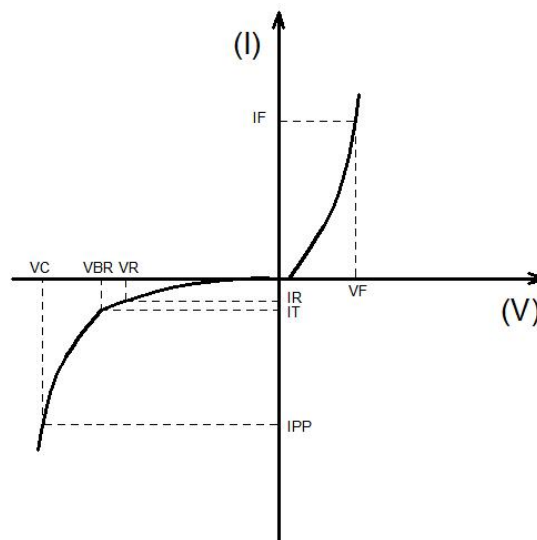
I_R: Reverse Leakage Current

Absolute Maximum Ratings($T=25^{\circ}\text{C}$, $\text{RH}=45\%-75\%$, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20 μs waveform	P_{PP}	6400	W
Steady state power dissipation at $T_L=75^{\circ}\text{C}$	$P_{M(AV)}$	1.0	W
Operating junction temperature range	T_j	-55 to +125	$^{\circ}\text{C}$
Storage temperature range	T_{stg}	-55 to +150	$^{\circ}\text{C}$

Ratings And V-I Characteristics Curves ($T=25^{\circ}\text{C}$, unless otherwise noted)

FIG1: V-I cure characteristics



Symbol	Parameter
V_R	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_R
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

FIG2: Pulse Derating Curve

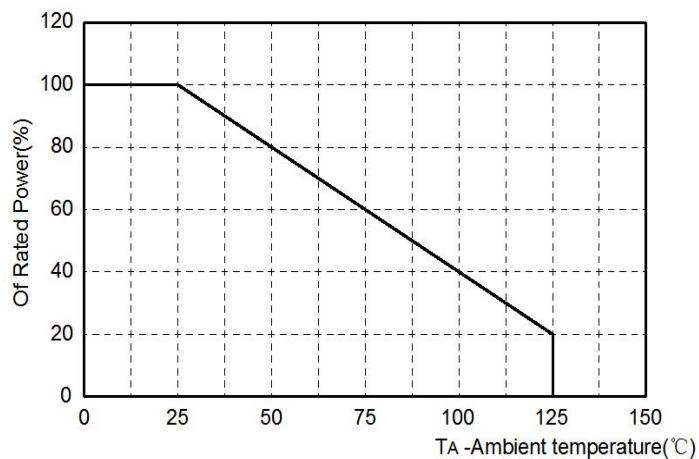


FIG3: Pulse Waveform

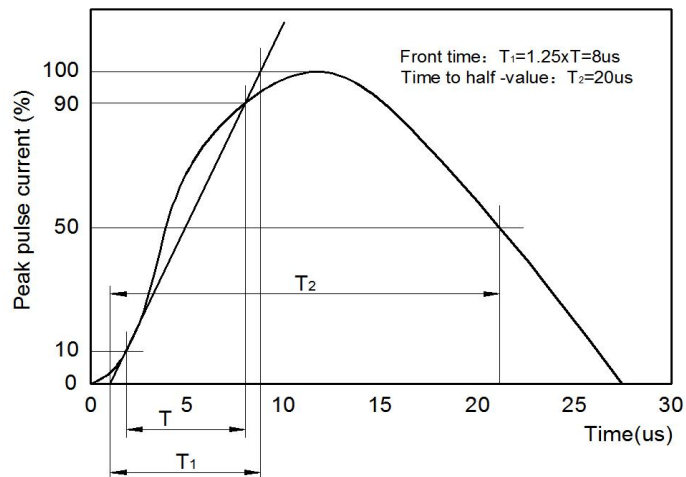


FIG4: Peak Pulse Power Rating Curve

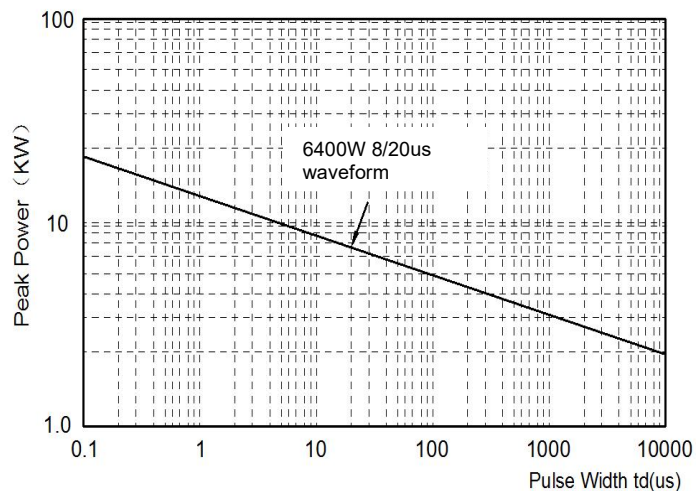
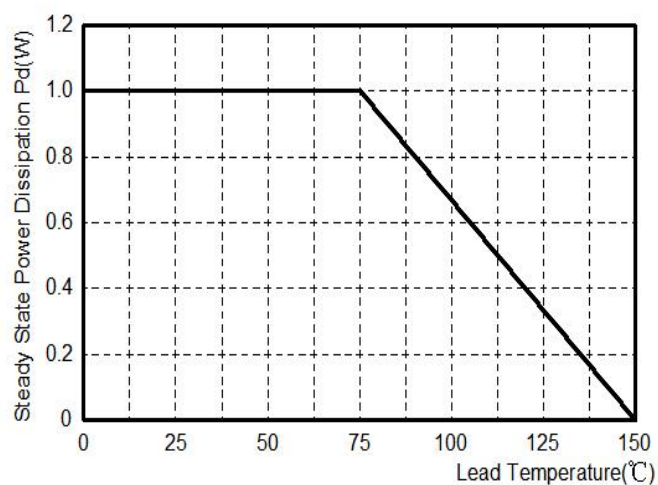
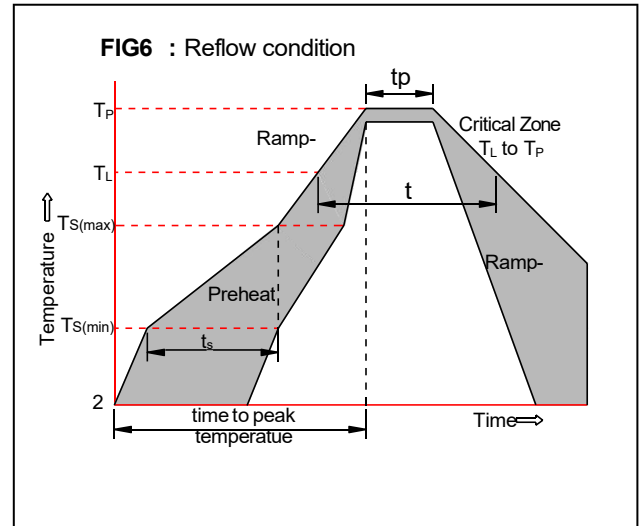


FIG5: Steady State Power Dissipation

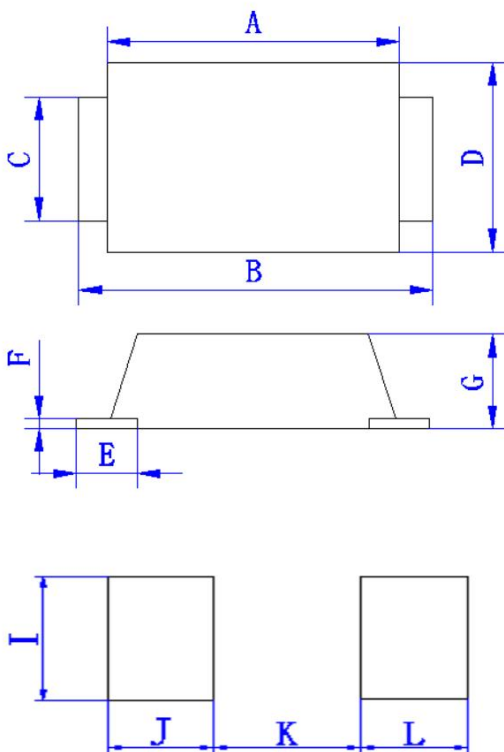


Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	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/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

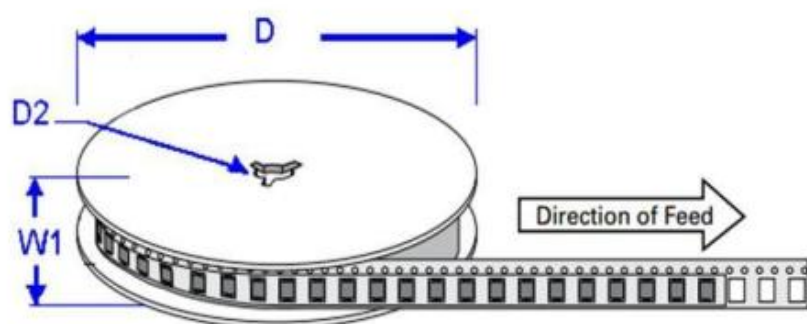
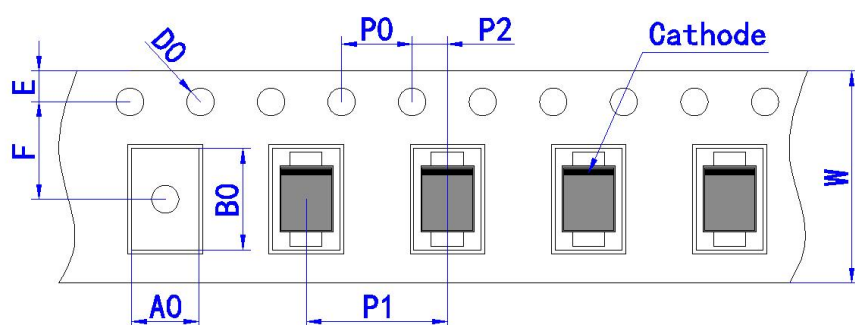


Package mechanical data & Suggested Land Pattern



Ref.(mm)	Millimeters	
	Min.	Max.
A	2.5	3.0
B	3.4	4.0
C	0.7	1.1
D	1.5	1.9
E	0.45	0.95
F	0.05	0.26
G	0.9	1.1
I	1.2	
J	0.85	
K		2.3
L	0.85	

Tape & reel specification - SOD-123FL



Ref.	Millimeters
A0	2.15 ± 0.20
B0	3.95 ± 0.20
C	178.00
D0	1.55 ± 0.10
E	1.75 ± 0.20
E1	13.50 ± 1.00
F	3.50 ± 0.10
P0	4.00 ± 0.20
P1	4.00 ± 0.20
P2	2.00 ± 0.20
W	8.00 ± 0.30
W1	9.00 ± 4.00
D	177.8 ± 4.00
D2	13.5 ± 0.2