

400W Transient Voltage Suppressor

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
- 400 W peak pulse power capability with a 10/1000 μ s Waveform.
- V_{RWM} 3.3-75V
- Low profile package and low inductance
- Typical IR less than 1 μ A above 12V
- Fast response time: typically less than 1.0ps from 0V to V_{BR} min.

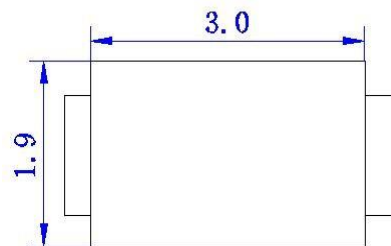
Applications

- computer system
- domestic appliance
- video input

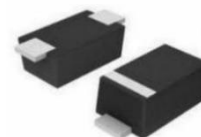
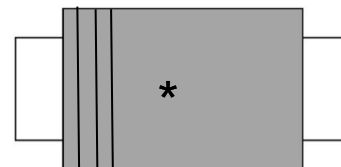
Mechanical Characteristics

- 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)

Dimensions & Symbol(Unit: mm Max)



Marking Information



Electrical Characteristics (T=25°C)

Part Number	Marking	V _R	I _R @V _R	V _{BR} @I _T		I _T	V _C @I _{PP}	I _{PP} ^①
		V	μA	min(V)	max(V)	mA	max(V)	A
PTVS3V3S1UR	A1	3.3	200	5.2	6	10	8.0	50.00
PTVS5V0S1UR	A2	5.0	400	6.40	7.00	10	9.2	43.48
PTVS6V0S1UR	A3	6.0	400	6.67	7.37	10	10.3	38.84
PTVS6V5S1UR	A4	6.5	250	7.22	7.98	10	11.2	35.72
PTVS7V0S1UR	A5	7.0	100	7.78	8.60	10	12.0	33.34
PTVS7V5S1UR	A6	7.5	50	8.33	9.21	1	12.9	31.01
PTVS8V0S1UR	A7	8.0	25	8.89	9.83	1	13.6	29.42
PTVS8V5S1UR	A8	8.5	10	9.44	10.40	1	14.4	27.78
PTVS9V0S1UR	A9	9.0	5	10.00	11.10	1	15.4	25.98
PTVS10VS1UR	AA	10.0	2.5	11.10	12.30	1	17.0	23.53
PTVS11VS1UR	AB	11.0	2.5	12.20	13.50	1	18.2	21.98
PTVS12VS1UR	AC	12.0	2.5	13.30	14.70	1	19.9	20.11
PTVS13VS1UR	AD	13.0	1	14.40	15.90	1	21.5	18.61
PTVS14VS1UR	AE	14.0	1	15.60	17.20	1	23.2	17.25
PTVS15VS1UR	AF	15.0	1	16.70	18.50	1	24.4	16.40
PTVS16VS1UR	AG	16.0	1	17.80	19.70	1	26.0	15.39
PTVS17VS1UR	AH	17.0	1	18.90	20.90	1	27.6	14.50
PTVS18VS1UR	AK	18.0	1	20.00	22.10	1	29.2	13.70
PTVS20VS1UR	AL	20.0	1	22.20	24.50	1	32.4	12.35
PTVS22VS1UR	AM	22.0	1	24.40	26.90	1	35.5	11.27
PTVS24VS1UR	AN	24.0	1	26.70	29.50	1	38.9	10.29
PTVS26VS1UR	AP	26.0	1	28.90	31.90	1	42.1	9.51
PTVS28VS1UR	AR	28.0	1	31.10	34.40	1	45.4	8.82
PTVS30VS1UR	AS	30.0	1	33.30	36.80	1	48.4	8.27
PTVS33VS1UR	AT	33.0	1	36.70	40.60	1	53.3	7.51
PTVS36VS1UR	AU	36.0	1	40.00	44.20	1	58.1	6.89
PTVS40VS1UR	AV	40.0	1	44.40	49.10	1	64.5	6.21
PTVS43VS1UR	AW	43.0	1	47.80	52.80	1	69.4	5.77
PTVS45VS1UR	AX	45.0	1	50.00	55.30	1	72.7	5.51
PTVS48VS1UR	AY	48.0	1	53.30	58.90	1	77.4	5.17
PTVS51VS1UR	AZ	51.0	1	56.70	62.70	1	82.4	4.86

Electrical Characteristics (T=25°C)

Part Number	Marking	V _R	I _R @V _R	V _{BR} @I _T		I _T	V _C @I _{PP}	I _{PP} ①
		V	μA	min(V)	max(V)	mA	max(V)	A
PTVS54VS1UR	B1	54.0	1	60.00	66.30	1	87.1	4.60
PTVS58VS1UR	B2	58.0	1	64.4	71.20	1	93.6	4.28
PTVS60VS1UR	B3	60.0	1	66.7	73.70	1	96.8	4.14
PTVS64VS1UR	B4	64.0	1	71.10	78.60	1	103.0	3.89
PTVS70VS1UR	*	70.0	1	77.8	86.00	1	113.0	3.54
PTVS75VS1UR	*	75.0	1	83.3	92.10	1	121.0	3.31

Notes:

① Surge waveform: 10/1000μs

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 I_{PP} I_R

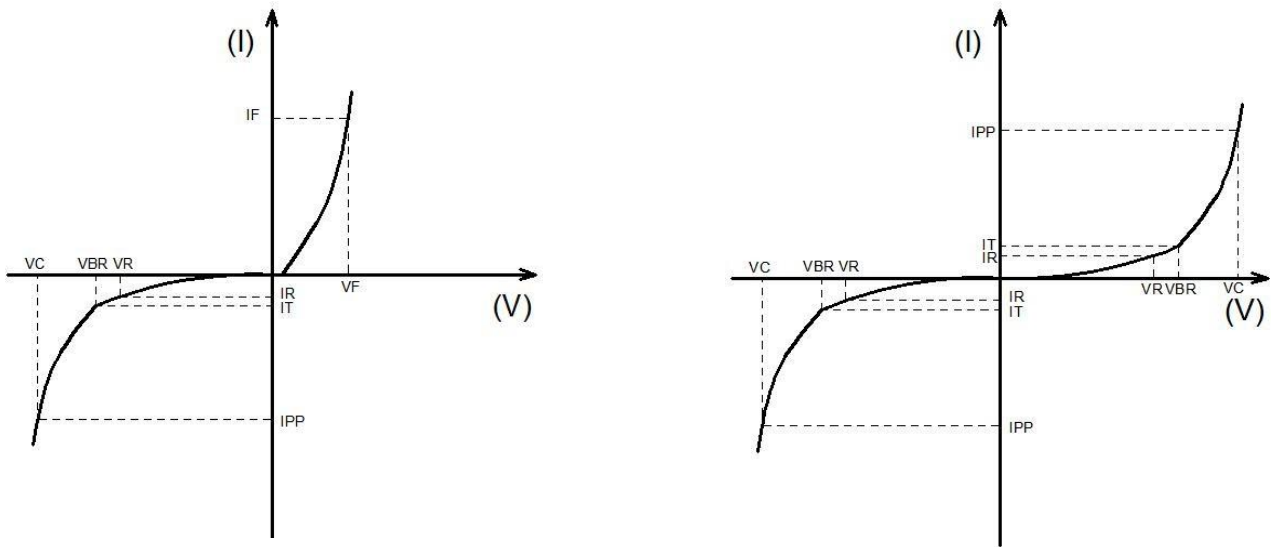
: Reverse Leakage Current

Absolute Maximum Ratings(T=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 10/1000μs waveform	P _{PP}	400	W
Steady state power dissipation at T _L =75°C	P _{M(AV)}	1.0	W
Operating junction temperature range	T _j	-55 to +125	°C
Storage temperature range	T _{stg}	-55 to +150	°C

Ratings And V-I Characteristics Curves (T=25°C, unless otherwise noted)

FIG1: V-I cure characteristics



Typical Characteristics

FIG2: Pulse Derating Curve

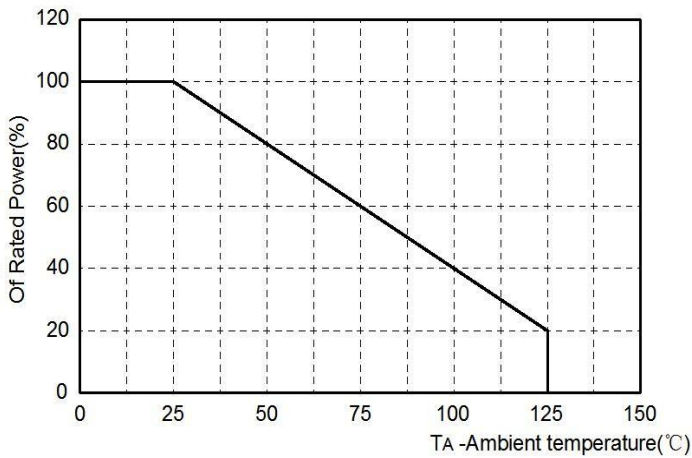


FIG3: Pulse Waveform

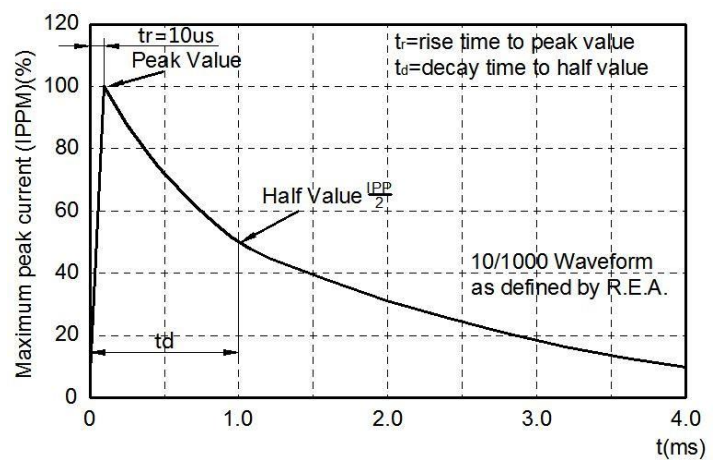


FIG4: Peak Pulse Power Rating Curve

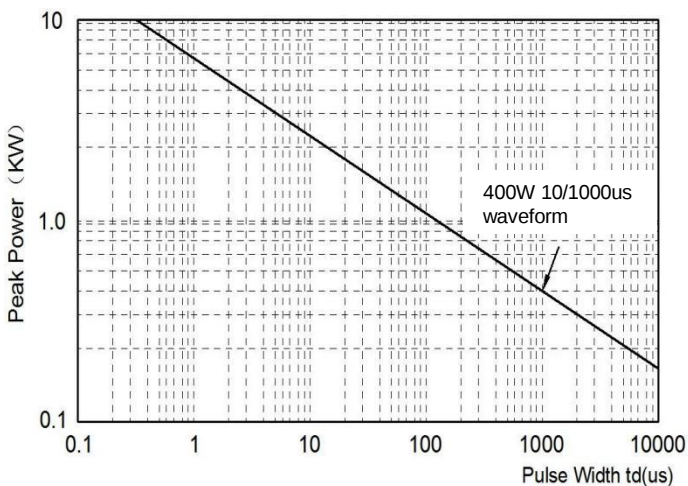
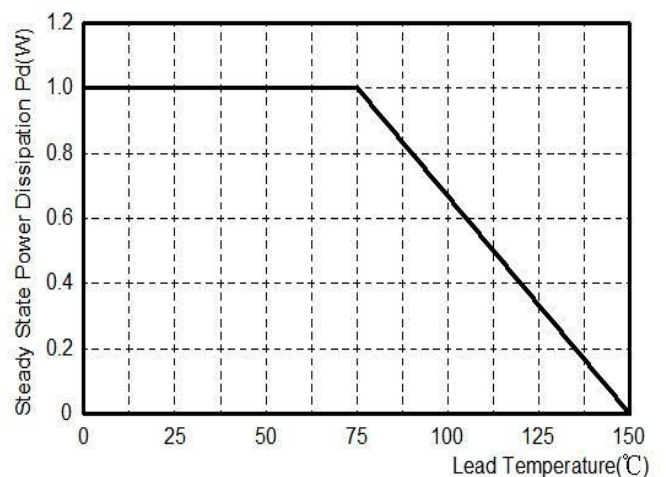
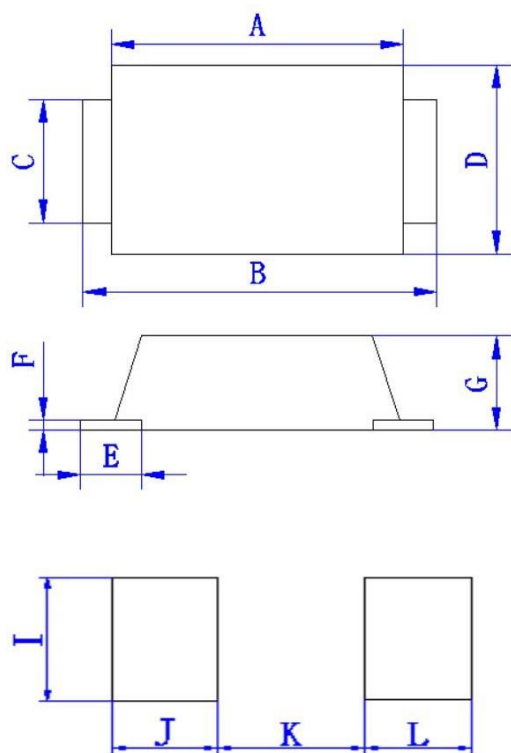


FIG5: Steady State Power Dissipation



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	