

UNS1K Series

ROHS

Surface Mount Transient Voltage Suppressors

Description

UNS1K series TVS is designed for DC power supply equipment in outdoor exposure environment. It is used to replace the traditional PTC, GDT and TVS combination solution, which is widely used to DC48V、AC24V port.etc
Working Voltage: 48 V、58V

Features

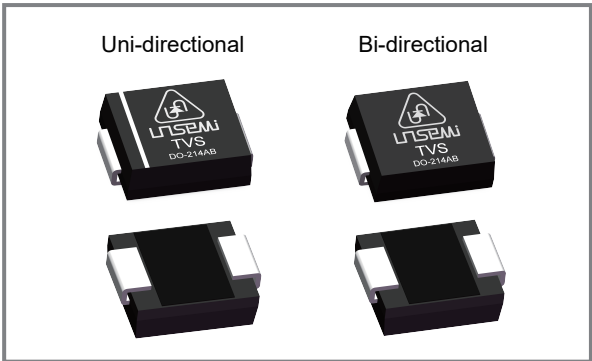
- ◆ Glass passivated junction
- ◆ Excellent clamping capability
- ◆ Repetitive rate (duty cycle):0.01%
- ◆ Low profile package and low inductance
- ◆ 1000A Peak Pulse power capability at 8/20us waveform
- ◆ Fast response time: typically less than 1.0ps from 0V to VBR min
- ◆ High temperature soldering:260°C/10s at terminals
- ◆ For surface mounted application in order to optimize board space
- ◆ Plastic package has Underwriters Laboratory Flammability 94V-0
- ◆ Halogen free and RoHS compliant
- ◆ IEC-61000-4-2 ESD 30kV(Air), 30kV (Contact)
- ◆ ESD protection of data lines in accordance with IEC 61000-4-2
- ◆ EFT protection of data lines in accordance with IEC 61000-4-4

Applications

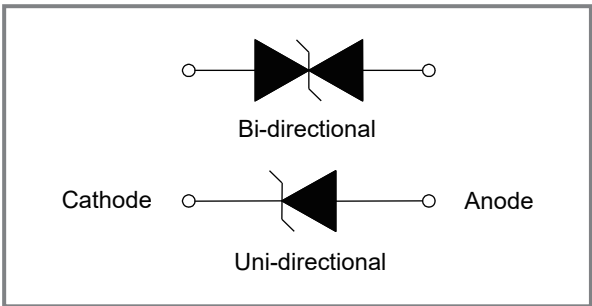
TVS devices are ideal for the protection of I/O interfaces, Vcc bus and other vulnerable circuits used in Telecom, Computer, Industrial and Consumer electronic applications.



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Functional Diagram



Maximum Ratings and Thermal Characteristics (TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse current with a 8/20us waveform	I _{PP}	1000	A
Power Dissipation on Infinite Heat Sink at T _L =75°C	P _D	8.0	W
Junction and Storage temperature range	T _J , T _{STG}	- 55 to +150	°C
Operating temperature range	T _{OP}	- 55 to +125	°C

Electrical Characteristics (@ 25°C Unless Otherwise Specified)

Part Number		Marking		Reverse Stand-Off Voltage V_{RWM} (V)	Breakdown Voltage V_{BR} (V) @ I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C @ I_{PP} (V)	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R @ V_{RWM} (μ A)
Uni	Bi	Unl	Bi		MIN	MAX				
UNS1K48A	UNS1K48CA	1K48A	1K48CA	48	53.30	58.90	1	82	1000	1
UNS1K58A	UNS1K58CA	1K58A	1K58CA	58	60.00	72.00	1	90	1000	1

NOTE1: Surge waveform: 8/20 μ s

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

Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

Figure 1 - Pulse Waveform

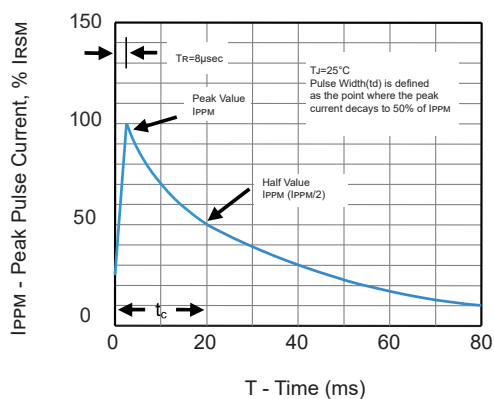
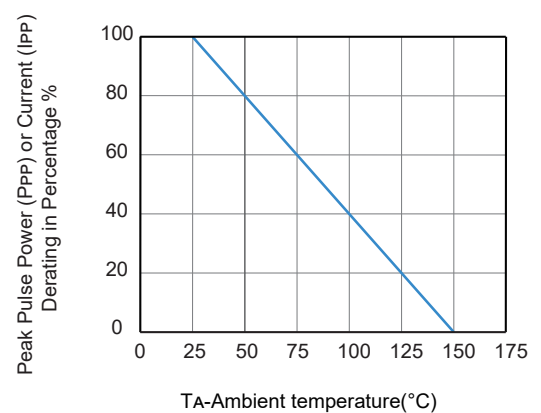
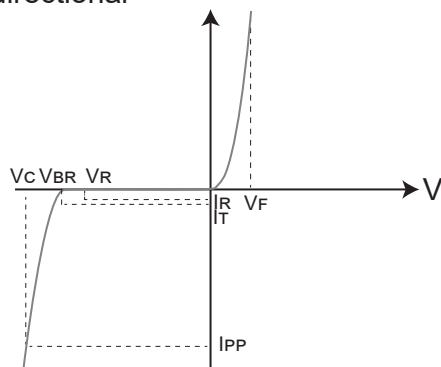


Figure 2 - Pulse Derating Curve

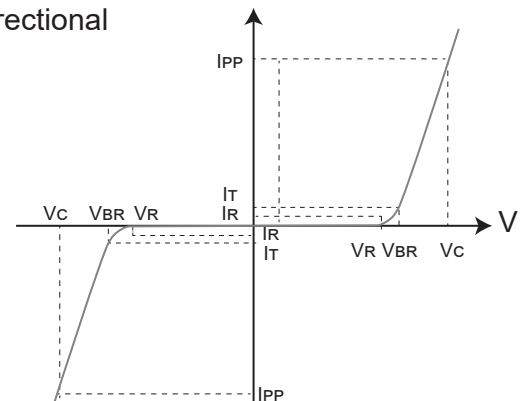


I-V Curve Characteristics

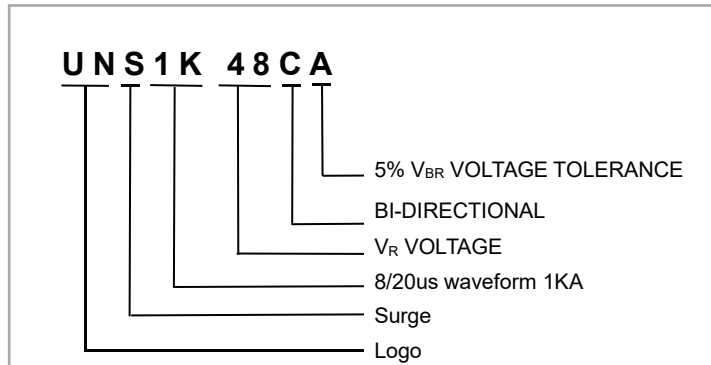
Uni-directional



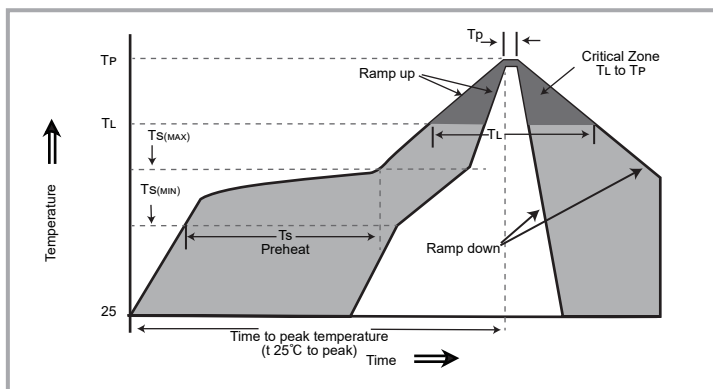
Bi-directional



Part Numbering

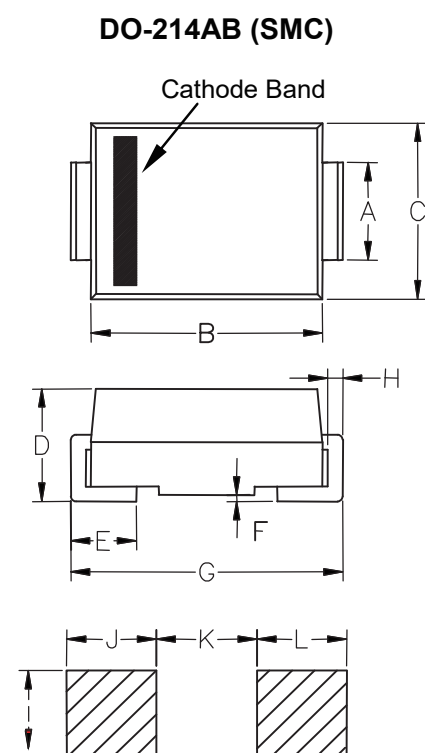


Soldering Parameters



Reflow Condition		Lead-free assembly
Pre Heat	-Temperature Min (Ts(min))	150°C
	-Temperature Max (Ts(max))	200°C
	- Time (min to max) (Ts)	60 -180 Seconds
Average ramp up rate (Liquidus Temp TL) to peak		3°C/second max
Ts(max) to TL - Ramp-up Rate		5°C/second max
Reflow	- Temperature (TL) (Liquidus)	217°C
	- Time (min to max) (Ts)	60 -150 Seconds
Peak Temperature (TP)		260 +0/-5°C
Time within 5°C of actual peak Temperature (TP)		30 Seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (TP)		8 minutes Max
Do not exceed		260°C

Dimensions



Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.114	0.126	2.86	3.160
B	0.260	0.280	6.520	7.020
C	0.220	0.245	5.520	6.150
D	0.079	0.103	1.980	2.590
E	0.030	0.060	0.750	1.510
F	-	0.008	-	0.203
G	0.305	0.320	7.640	8.020
H	0.006	0.012	0.152	0.305
I	0.129	-	3.300	-
J	0.094	-	2.400	-
K	-	0.165	-	4.200
L	0.094	-	2.400	-

Ordering Information

Part Number	Component Package	Quantity	TAPE & REEL
UNS1KXXXX	DO-214AB(SMC)	3,000 pcs/Reel	13inch

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