Surface Mount Transient Voltage Suppressors

UNS2K Series

Description

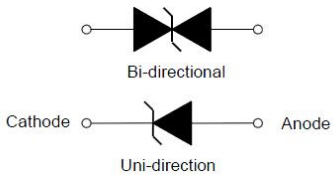
UNS2K series TVS is designed for DC power supply equipment in outdoor exposure environment.It is used to replace the traditional PTC, GDT and TVS combination solution, which is widely used to DC24V、DC12V port.etc

Working Voltage: 15 to 30 V

Features

- Glass passivated junction
- Excellent clamping capability
- Repetitive rate (duty cycle):0.01 %
- Low profile package and low inductance
- 2000A Peak Pulse power capability at 8/20us waveform
- Fast response time: typically less than 1.0ps from 0V to V_{BR} min
- High temperature soldering:260℃/10s at terminals.
- For surface mounted application in order to optimize board space

Functional Diagram



Applications

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

Maximum Ratings and Thermal Characteristics (T_A=25 ℃ unless otherwise noted)

Parameter	Symbol	Value	Units
Operating junction temperature range	**T_J**	- 55 to +125	° C
Power Dissipation on Infinite Heat Sink at T_L=75°C	**P_D**	8.0	W
Peak pulse current with a 8/20us waveform	**I_{PP}**	2000	A
Storage temperature range	**T_{STG}**	- 55 to +150	° C

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Electrical Characteristics (@ 25℃ 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} (μA)
Uni	Bi	Uni	Bi		MIN	MAX				
UNS2K15A	UNS2K15CA	2K15A	2K15CA	15	16.70	18.50	1	40	2000	1
UNS2K30A	UNS2K30CA	2K30A	2K30CA	30	32.00	37.00	1	65	2000	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 Ipp

I_R：Reverse Leakage Current

Ratings and Characteristics Curves (T_A=25℃ unless otherwise noted)

Figure 1 - Pulse Waveform

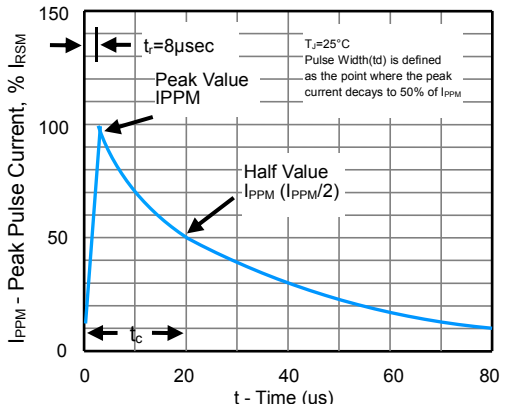
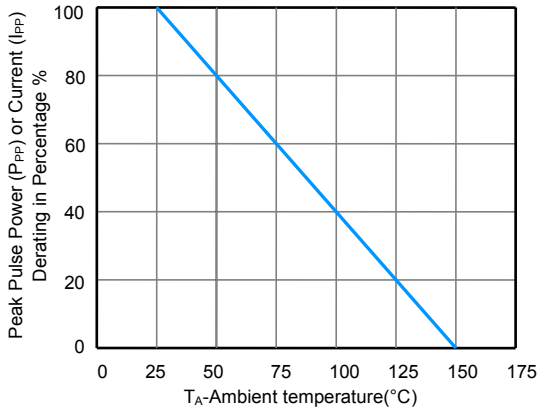
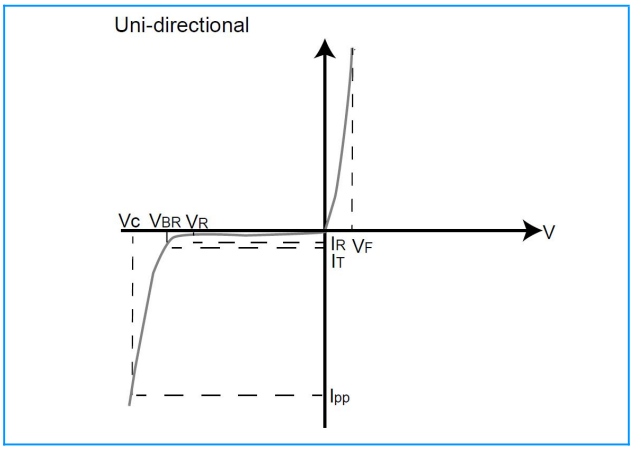
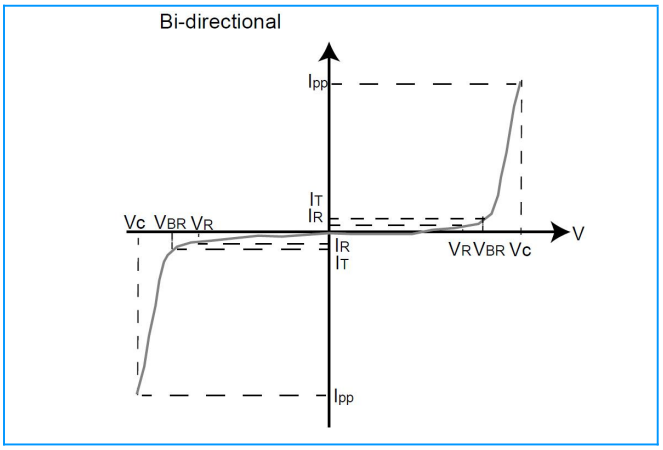


Figure 2 - Pulse Derating Curve



I-V Curve Characteristics





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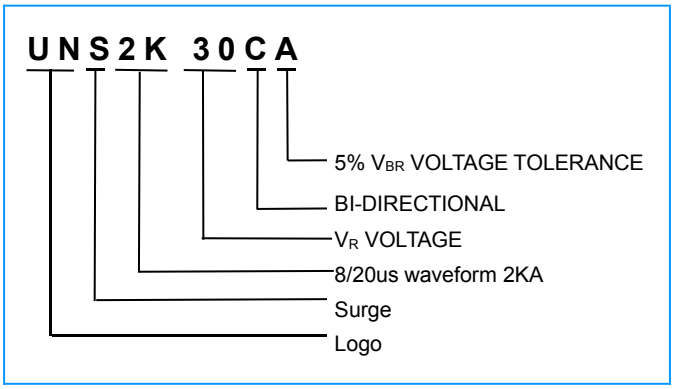
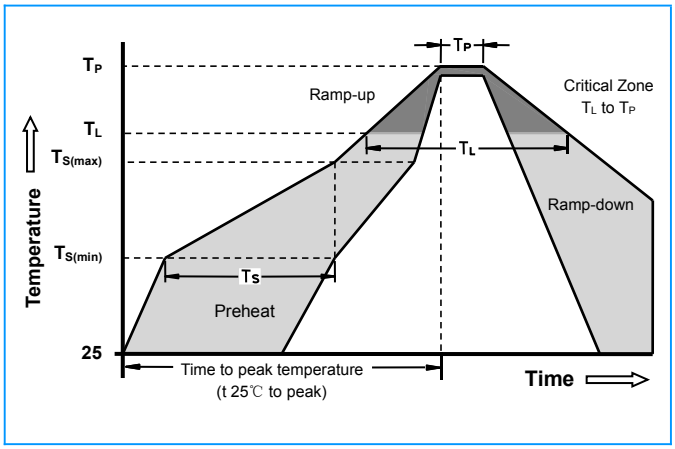
Part Numbering



Soldering Parameters



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

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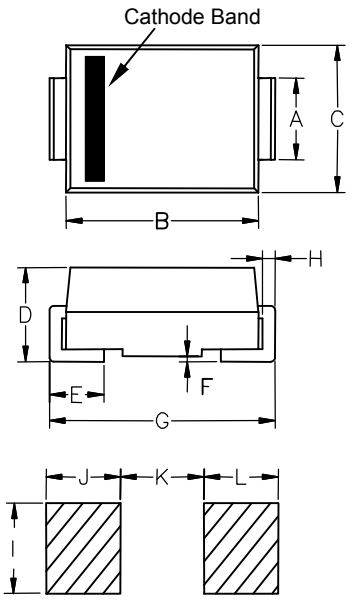
Dimensions

DO-214AB (SMC)



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	-

Packaging

Part Number	Component Package	Quantity	TAPE & REEL
UNS2KXXXX	DO-214AB	3000	13inch