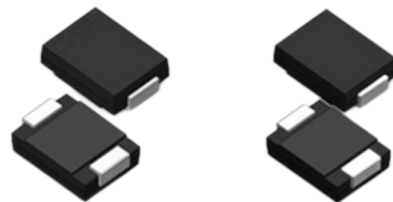


Features

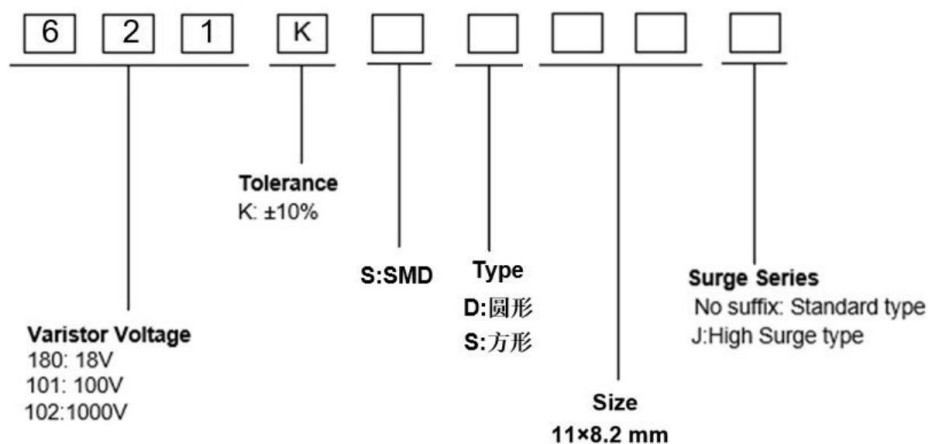
- ◆ Operating voltage (V_{1mA}): 620V
- ◆ Fast responding to transient over-voltage
- ◆ Large absorbing transient energy capability
- ◆ Low clamping ratio and no follow-on current
- ◆ SMD plastic package
- ◆ Meets MSL level 1, per J-STD-020
- ◆ Operating Temperature: $-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$
- ◆ Storage Temperature: $-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$



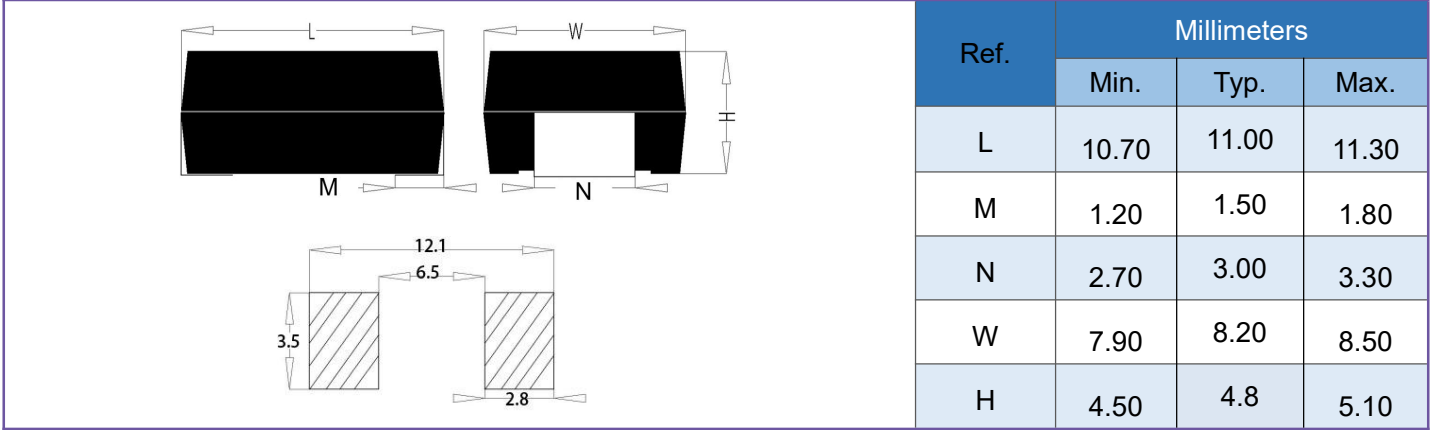
Applications

- ◆ Power supplies for telecommunication systems
- ◆ Protection for LED circuits
- ◆ Protection for consumer, industrial equipment
- ◆ Protection for automotive electronics

Part Number Coding System



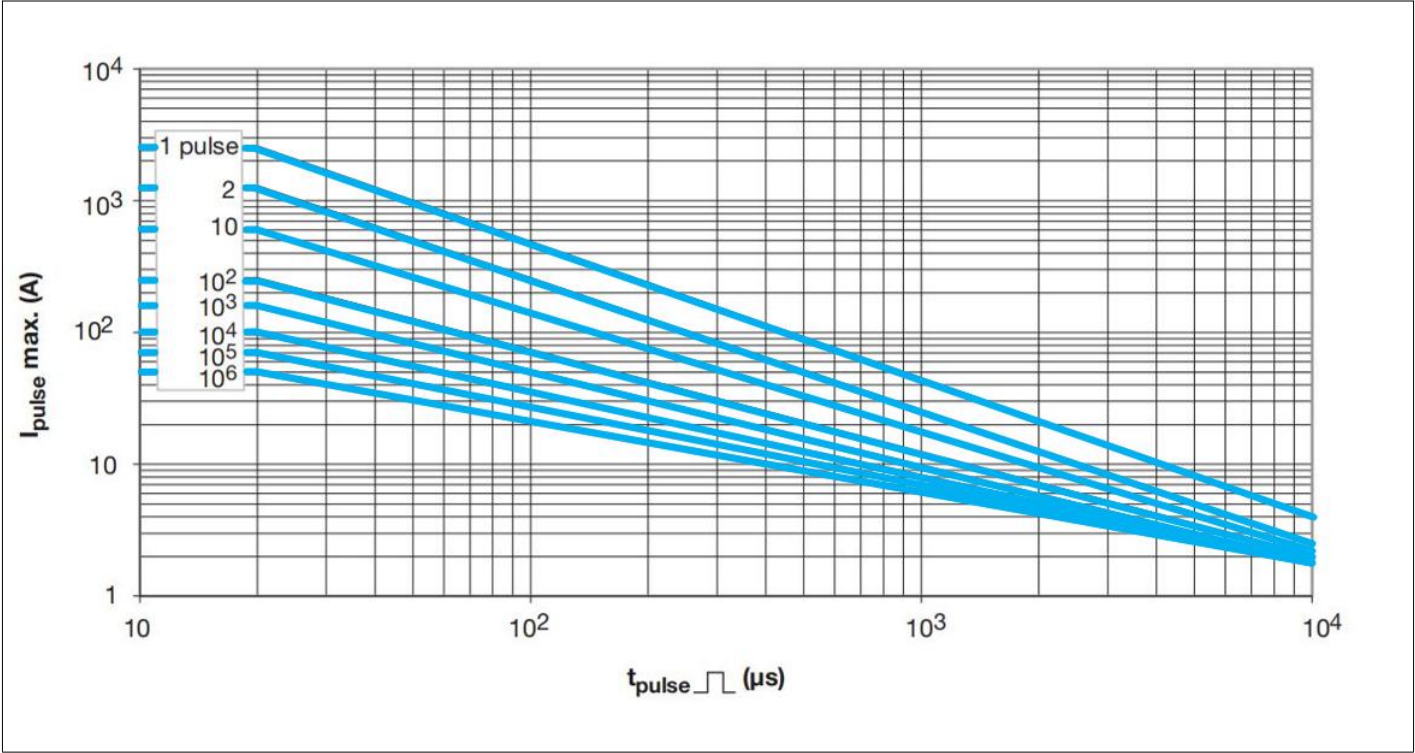
Dimensions



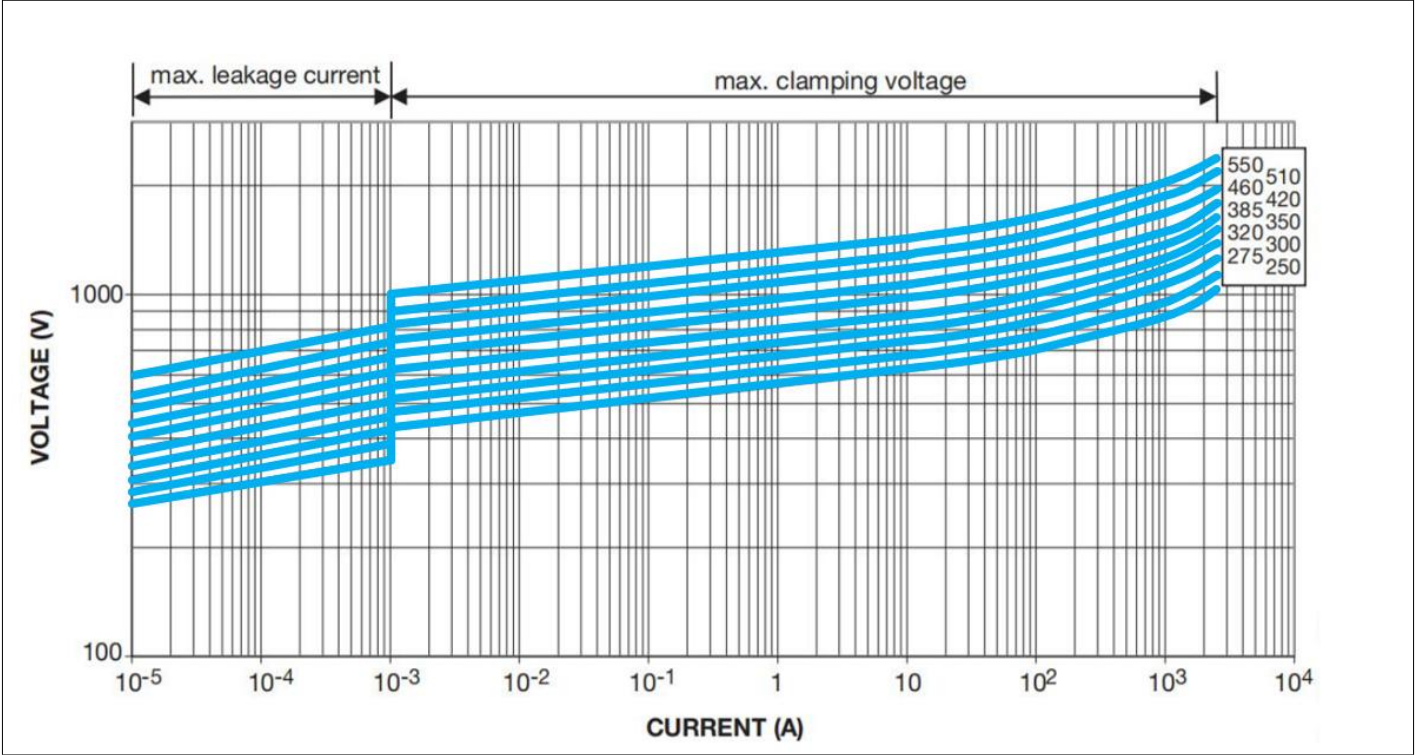
Electrical Characteristics (T_A=25℃, unless otherwise noted)

Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current (8/20μs)	Maximum Energy (10/1000μs)	Rated Power	Typical Capacitance (Reference)
	V _{AC} (V)	V _{DC} (V)		I _P (A)	V _C (V)				
Standard			V _{1mA} (V)			I (A) Standard	(J) Standard	(W)	@1KHz (pF)
621KSS1182	395	510	620(558~682)	25	1020	2500	70.0	0.4	160

Maximum Surge Current Derating Curve



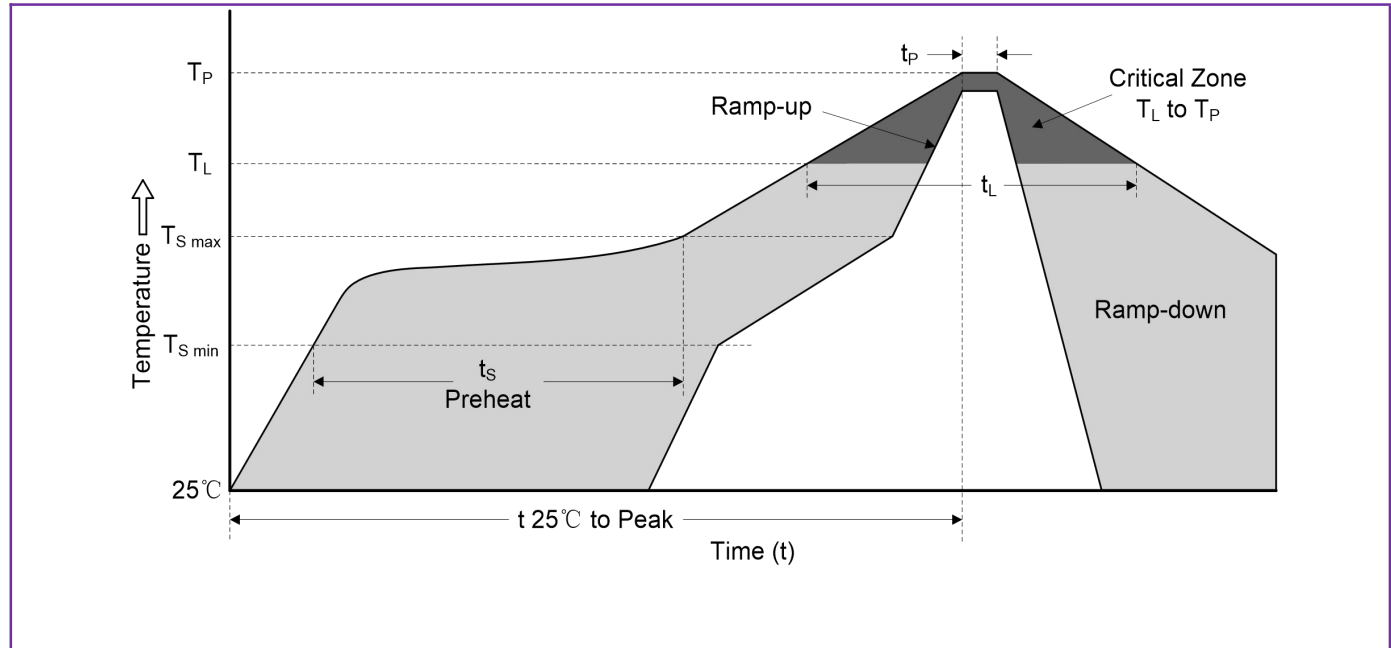
Maximum Leakage Current and Maximum Clamping Voltage Curve



Reliability

Items	Standard	Specifications	Test conditions / Methods			
Tensile Strength of Terminals	IEC60068-2-21	No visible damage $ \Delta V1mA/V1mA \leq 5\%$	Gradually applying the force specified and keeping the unit fixed for 10 ± 1 sec. Terminal diameter (mm) Force (kg) $0.5 < d \leq 0.8$ 1.0 $0.8 < d \leq 1.25$ 2.0 $1.25 < d$ 4.0			
Bending Strength of Terminals	IEC60068-2-21	No visible damage $ \Delta V1mA/V1mA \leq 5\%$	Hold specimen and apply the force specified below to each lead. Bend the specimen to 90° , then return to the original position. Repeat the procedure in the opposite direction. Terminal diameter (mm) Force (kg) $0.5 < d \leq 0.8$ 0.5 $0.8 < d \leq 1.25$ 1.0 $1.25 < d$ 2.0			
Vibration	IEC60068-2-6	No visible damage $ \Delta V1mA/V1mA \leq 5\%$	Frequency range: 10~55 Hz Amplitude: 0.75mm or 98m/s ² Direction: 3 mutually perpendicular directions, 2hrs each.			
Solderability	IEC60068-2-20	At least 95% of terminal electrode is covered by new solder	Solder Temp: $245 \pm 5^\circ\text{C}$ Dipping Time: 2 ± 0.5 sec			
Resistance to Soldering Heat	IEC60068-2-20	No visible damage $ \Delta V1mA/V1mA \leq 5\%$	Solder Temp: $260 \pm 5^\circ\text{C}$ Dipping Time: 10 ± 1 sec			
High Temperature Storage	IEC60068-2-2	No visible damage $ \Delta V1mA/V1mA \leq 5\%$	Ambient Temp: $125 \pm 2^\circ\text{C}$ Duration: 1000 ± 24 hrs			
Low Temperature Storage	IEC60068-2-1	No visible damage $ \Delta V1mA/V1mA \leq 5\%$	Ambient Temp: $-40 \pm 2^\circ\text{C}$ Duration: 1000 ± 24 hrs			
Damp Heat, Steady State	IEC60068-2-78	No visible damage $ \Delta V1mA/V1mA \leq 10\%$ Insulation Resistance $\geq 100\text{M}\Omega$	The test is divided into two groups . a. $40 \pm 2^\circ\text{C}$, 90~95% RH for 1344 ± 24 hrs b. $40 \pm 2^\circ\text{C}$, 90~95% RH, at 10%VDC , 1344 ± 24 hrs			
High Temperature Load	MIL-STD-202 Method 108	$ \Delta V1mA/V1mA \leq 10\%$	Ambient Temp: $105 \pm 2^\circ\text{C}$ Duration: 1000 ± 24 hrs Load: Max. Allowable Voltage In AC.			
Temperature Cycle	IEC60068-2-14	No visible damage $ \Delta V1mA/V1mA \leq 5\%$	The conditions shown below shall be repeated 5 cycles			
			Step	Temperature ($^\circ\text{C}$)	Period (minutes)	
			1	-40 ± 3	30 ± 3	
			2	Room temperature	5 ± 3	
			3	125 ± 3	30 ± 3	
			4	Room temperature	5 ± 3	
8/20 μs Surge Life	IEC61051-1	No visible damage $\Delta V_b(1\text{mA}) \leq \pm 10\%$	1.2/50@8/20 μs waveform, 6KV/3KA , 4 phase angles $0^\circ/90^\circ/180^\circ/270^\circ$, 10 times per phase, a total of 40 times, with an interval of 1 minute			
10/1000 μs Surge Life	IEC61051-1	No visible damage $ \Delta V1mA/V1mA \leq 10\%$	1.2/50@8/20 μs waveform, 6KV/3KA , 4 phase angles $0^\circ/90^\circ/180^\circ/270^\circ$, 10 times per phase, Total 40 times, interval time: 1min			
Voltage Proof	IEC61051-1	No visible damage	Metal balls method, 2500Vac 1 min.			

Reflow Soldering Parameters



Reflow Condition		Lead-free Assembly
Preheat	-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 (T_L to T_P)		3°C/second max.
$T_{S\ max}$ to T_L -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)		20-40 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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