

### LTKAK6 Series



#### Description

The LTKAK6 series offer superior clamping characteristics over standard SAD technologies by virtue of the Littelfuse Foldbak technology, which provides a clamping voltage lower than the avalanche voltage (but above the rated working voltage). Therefore, any voltage rise due to increased current conduction is contained to a minimum, providing the best possible protection level. They can also be connected in series and/or parallel to create various capability and flexible protection solutions.

LTKAK6 in SMT0-218 package provide the enhanced quality, easy manufacturing and compact mechanical design than current AK TVS families.

#### Agency Approvals

AGENCY	AGENCY FILE NUMBER
	E128662

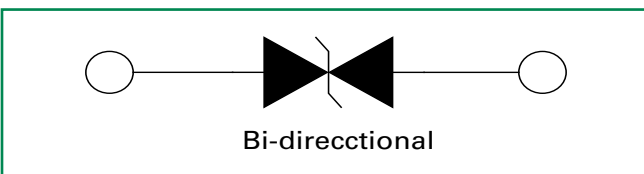
#### Maximum Ratings and Thermal Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	(-40 to 125	°C
Current Rating <sup>1</sup>	I <sub>PP</sub>	6	kA

**Note:**

1. Rated min I<sub>PP</sub> measured with 8/20μs pulse.

#### Functional Diagram



#### Features

- Compact design having the Hi Power TVS in surface mount package
- Bi-directional
- Foldbak Technology for superior clamping factor
- Option for pack in tube or tape and reel.
- Ideal for automatic pick and place assembly and reflow process to reduce the manufacturing cost and increase the soldering quality compared to axial leads package
- Low clamping and slope resistance.
- Sharp breakdown voltage.
- Halogen free and RoHS compliant
- 2nd level interconnect is Pb-free (IPC/JEDEC J-STD-609A.01)
- Patent pending package design
- Plastic package has underwriters laboratory flammability classification V-0

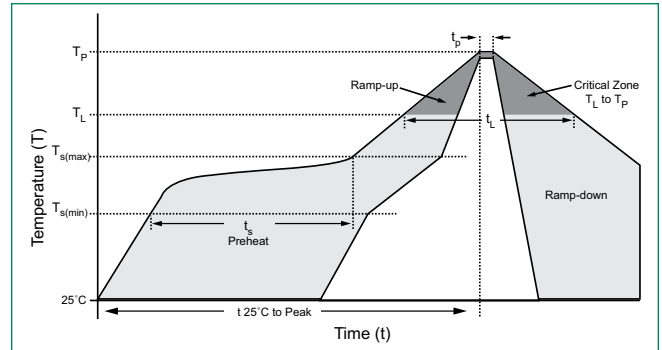
#### Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

Part Numbers	Standoff Voltage (V <sub>SO</sub> ) (V)	Max. Reverse Leakage (I <sub>R</sub> ) @ V <sub>SO</sub> (μA)	Reverse Breakdown Voltage (V <sub>BR</sub> ) @ I <sub>T</sub>		Test Current I <sub>T</sub> (mA)	Max. Clamping Voltage V <sub>CL</sub> @ Peak Pulse Current (I <sub>PP</sub> )				Max. Temp Coefficient of V <sub>BR</sub> (%/°C)	Max. Capacitance 0 Bias 10kHz (nF)	
			Min Volts	Max Volts		V <sub>CL</sub> Volts	I <sub>PP</sub> (8/20μS) (A)		I <sub>PP</sub> (10/350μS) (A)			
							min	typ	min			typ
LTKAK6-058C	58	10	64	70	10	110	6,000	-	1,000	-	0.1	6.5
LTKAK6-066C	66	10	72	80	10	120	6,000	-	600	-	0.1	5.5
LTKAK6-076C	76	10	85	95	10	140	6,000	9,500	1,100	-	0.1	4.5

**Note:** Using 8/20μS wave shaped defined in IEC 61000-4-5.

### 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 secs
Average ramp up rate (Liquidus Temp ( $T_A$ ) to peak)		3°C/second max
$T_{s(max)}$ to $T_A$ - Ramp-up Rate		3°C/second max
Reflow	- Temperature ( $T_A$ ) (Liquidus)	217°C
	- Time (min to max) ( $t_s$ )	60 – 150 seconds
Peak Temperature ( $T_p$ )		260 <sup>+0/-5</sup> °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



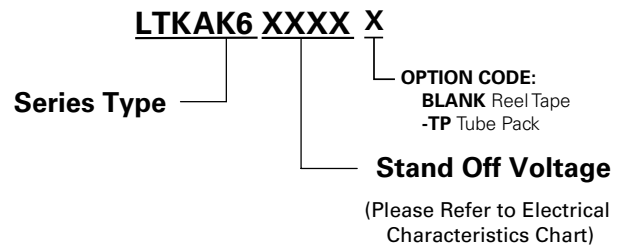
### Flow/Wave Soldering (Solder Dipping)

<b>Peak Temperature :</b>	265°C
<b>Dipping Time :</b>	10 seconds
<b>Soldering :</b>	1 time

### Physical Specifications

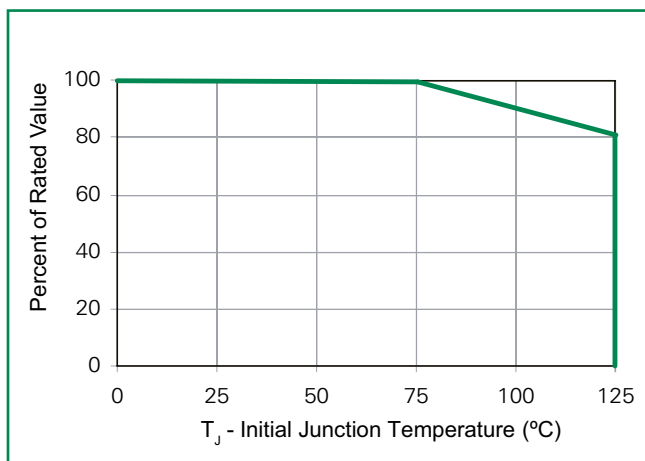
<b>Weight</b>	Contact manufacturer
<b>Case</b>	Epoxy encapsulated
<b>Terminal</b>	Tin plated lead, solderable per MIL-STD-202 Method 208

### Part Numbering System

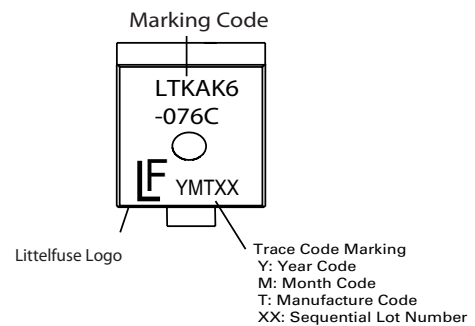


### Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)

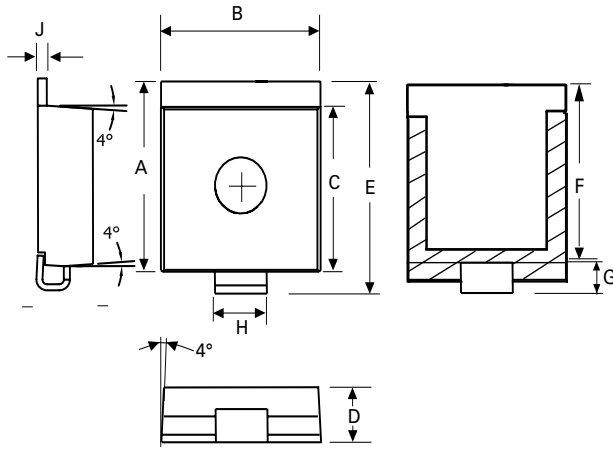
#### Peak Power Derating



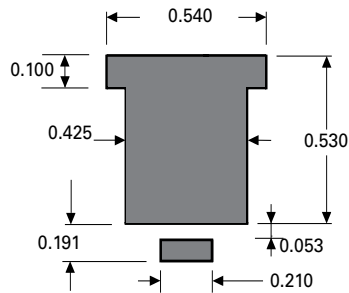
### Part Marking System



### Dimensions — SMT0-218



Dimension	Inches		Millimeters	
	Min	Max	Min	Max
A	0.621	0.655	15.78	16.63
B	0.529	0.594	13.43	15.09
C	0.544	0.561	13.83	14.24
D	0.273	0.285	6.94	7.24
E	0.702	0.737	17.82	18.72
F	0.567	0.581	14.40	14.76
G	0.074	0.104	1.88	2.64
H	0.193	0.222	4.89	5.65
J	0.028	0.033	0.72	0.85



Pad Layout

### Packaging

Part Number	Weight	Packing Mode	Base Quantity
LTKAK6-xxxC	4.34g	Tape & Reel – 32mm/13" tape	400
LTKAK6-xxxC-TP	4.34g	Tube Pack	100(25/Tube)

### Tape and Reel Specification

