

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

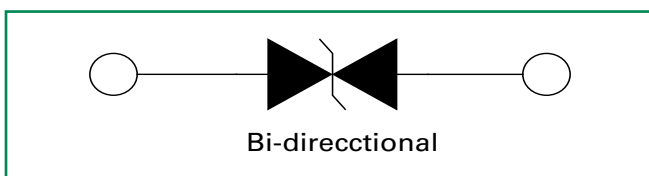
Maximum Ratings and Thermal Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Operating Junction and Storage Temperature Range	T_J, T_{STG}	(-40 to 125	$^{\circ}\text{C}$
Current Rating ¹	I_{PP}	6	kA

Note:

1. Rated min I_{PP} measured with 8/20 μs 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-O

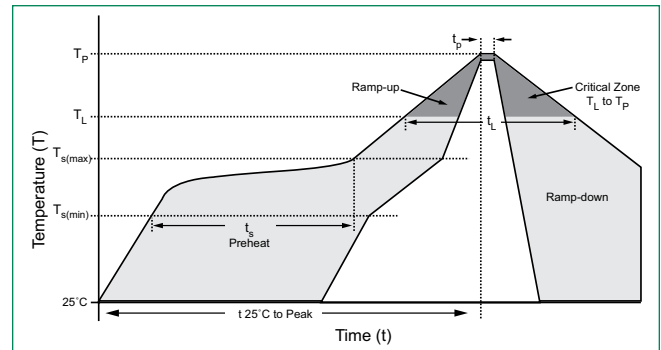
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Part Numbers	Standoff Voltage (V _{SO}) (V)	Max. Reverse Leakage (I _R) @ V _{SO} (μA)	Reverse Breakdown Voltage (V _{BR}) @ I _T		Test Current I _T	Max. Clamping Voltage V _{CL} @ Peak Pulse Current (I _{PP})					Max. Temp Coefficient of V _{BR}	Max. Capacitance 0 Bias 10kHz	
			Min Volts	Max Volts		(mA)	V _{CL} Volts	I _{PP} (8/20μS) (A)		I _{PP} (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 8/20 μs 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 ^{+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



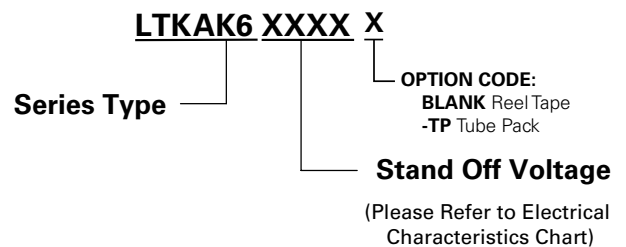
Flow/Wave Soldering (Solder Dipping)

Peak Temperature :	265°C
Dipping Time :	10 seconds
Soldering :	1 time

Physical Specifications

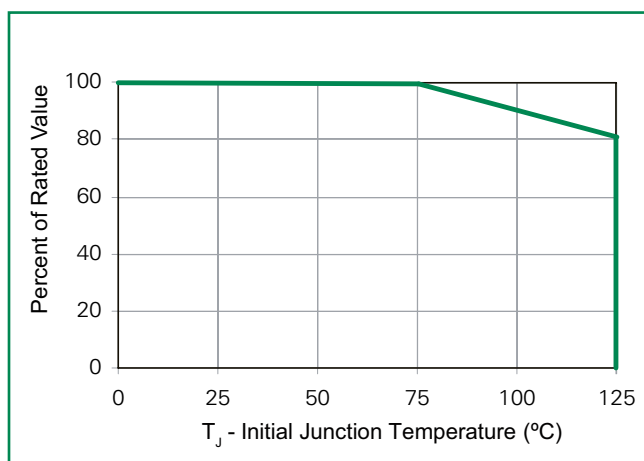
Weight	Contact manufacturer
Case	Epoxy encapsulated
Terminal	Tin plated lead, solderable per MIL-STD-202 Method 208

Part Numbering System

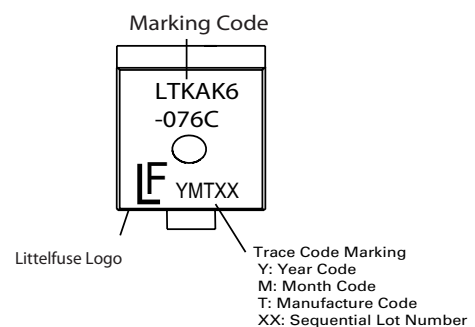


Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

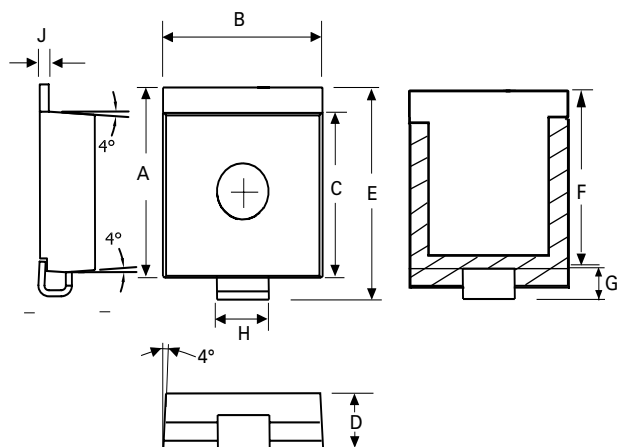
Peak Power Derating



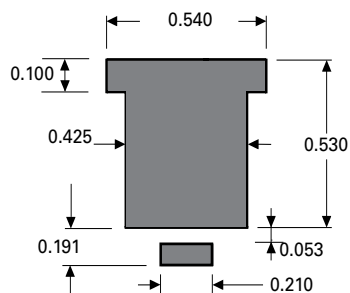
Part Marking System



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

