LTKAK10 Series

HF RoHS UL P0 e3

Agency Approvals

AGENCY	AGENCY FILE NUMBER
UL	E128662

Maximum Ratings and Thermal Characteristics
(T$_A$=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Operating Junction and Storage Temperature Range	T$_J$, T$_{STG}$	(-)40 to 125	°C
Current Rating[1]	I$_{PP}$	10	kA

Note:
1. Rated min I$_{PP}$ measured with 8/20µs pulse.

Functional Diagram

Bi-direcctional

Description

The LTKAK10 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.

LTKAK10 in SMTO-218 package provide the enhanced quality, easy manufacturing and compact mechanical design than current AK TVS families.

Features

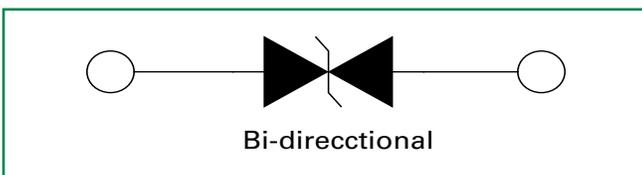- Compact design having the Hi Power TVS in surface mount package
- Bi-directional
- Foldbak Technology for superior clamping factor
- Option for pack in tube or tape and reel.
- Ideal for automatic pick and place assembly and reflow process to reduce the manufacturing cost and increase the soldering 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

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$_T$ (mA)	Max. Clamping Voltage V$_{CL}$ @ Peak Pulse Current (I$_{PP}$)					Max. Temp Coefficient of V$_{BR}$ (%/°C)	Max. Capacitance 0 Bias 10kHz (nF)
			Min Volts	Max Volts		V$_{CL}$ Volts	I$_{PP}$ (8/20µS) (A)		I$_{PP}$ (10/350µS) (A)			
							min	typ	min	typ		
LTKAK10-058C	58	10	64	70	10	110	10,000	-	-	-	0.1	8.5
LTKAK10-066C	66	10	72	80	10	120	10,000	13,000	800	-	0.1	7.5
LTKAK10-076C	76	10	85	95	10	140	10,000	12,000	450	-	0.1	6.5

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$^{+0/-5}$ °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
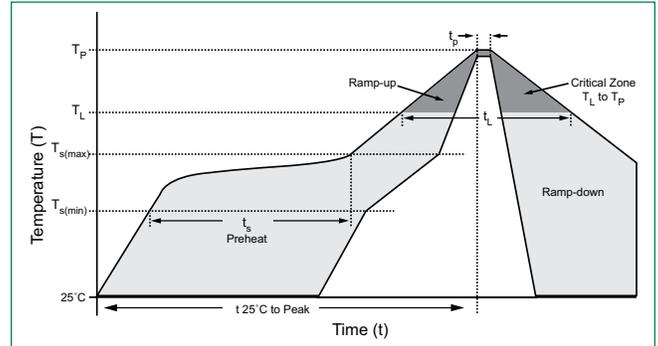
Flow/Wave Soldering (Solder Dipping)

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

LTKAK10 XXXX X

Series Type

OPTION CODE:
BLANK Reel Tape
-TP Tube Pack

Stand Off Voltage
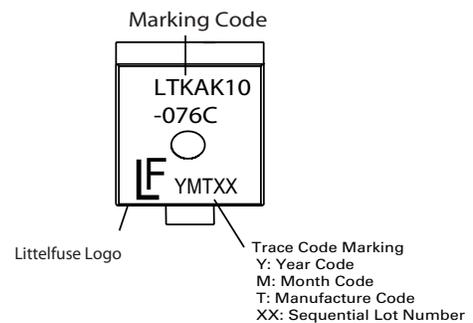
(Please Refer to Electrical Characteristics Chart)
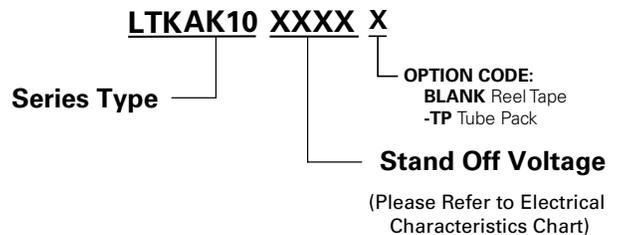
Ratings and Characteristic Curves (T$_A$=25°C unless otherwise noted)

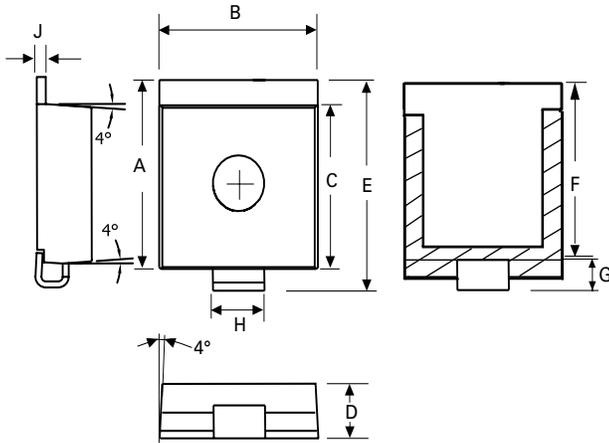### Peak Power Derating
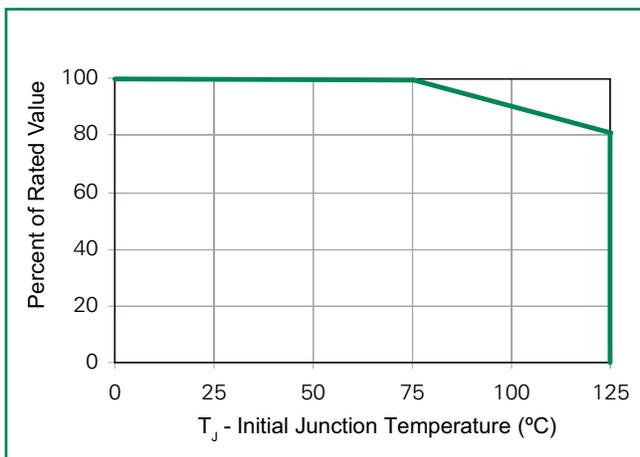
Part Marking System

Please contact Littelfuse for reliability or FIT/MTBF data , the performance is subject to vary and depends on the end customers' application condition.

Dimensions — SMTO-218 Tab

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
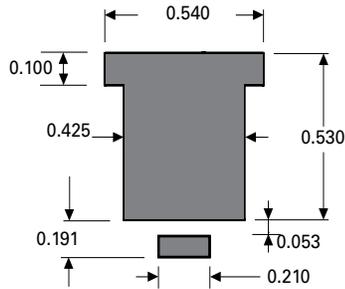
Pad Layout

Packaging

Part Number	Weight	Packing Mode	Base Quantity
LTKAK10-xxxC	4.34g	Tape & Reel – 32mm/13″ tape	400
LTKAK10-xxxC-TP	4.34g	Tube Pack	100(25/Tube)

Tape and Reel Specification
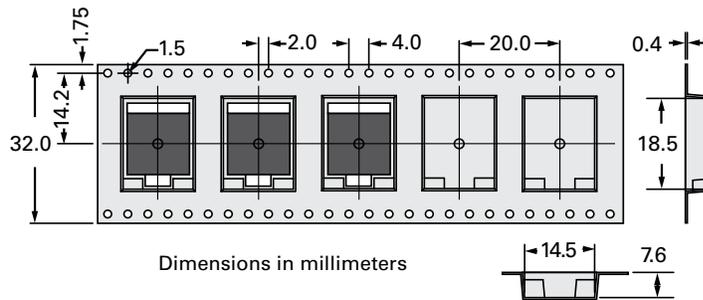
Dimensions in millimeters

Direction of Feed