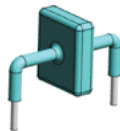


# AK6E

## 6000 A Transient voltage suppressor



### Product features

- Low slope resistance
- Very low clamping voltage
- Sharp breakdown voltage
- Glass passivated junction
- Snapback technology for superior clamping factor
- High temperature wave soldering: +265 °C /10 s at terminal
- UL 1449 recognized.  
File No. : E340782 Guide VZCA2

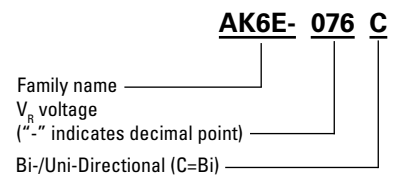
### Applications

- Consumer electronics
- Telecommunications
- Computing and servers
- Appliances
- Industrial automation
- Vac line protection

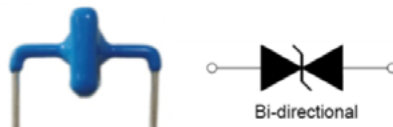
### Environmental compliance and general specifications



### Ordering part number



### PIN configuration

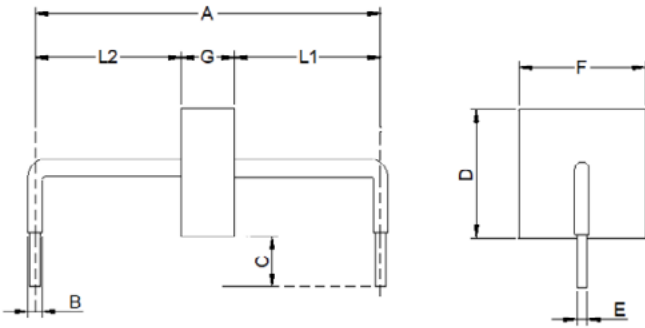


**Absolute maximum ratings**

(+25 °C, RH=45%-75%, unless otherwise noted)

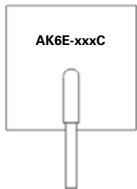
Parameter	Symbol	Value	Unit
Peak current rating per 8/20 μs IEC 61000-4-5	$I_{PP}$	6	kA
Operating junction temperature range	$T_J$	-55 to +125	°C
Storage temperature range	$T_{STG}$	-55 to +150	°C

**Mechanical parameters- mm**



	Inches	Millimeters
A	0.951 ±0.039	24.15 ±1.00
B	0.094 ±0.024	2.40 ±0.60
C	0.236 ±0.039	6.00 ±1.00
D	0.570 max	14.48 max
E	0.050 ±0.002	1.27 ±0.05
F	0.500 max	12.70 max
	015C to 025C	0.169 ±0.047 4.30 ±1.20
	030C to 042C	0.197 ±0.047 5.00 ±1.20
	058C to 076C	0.228 ±0.047 5.80 ±1.20
	100C	0.260 ±0.047 6.60 ±1.20
G	133C	0.287 ±0.047 7.30 ±1.20
	170C to 190C	0.346 ±0.047 8.80 ±1.20
	240C	0.406 ±0.047 10.30 ±1.20
	275C to 300C	0.496 ±0.047 12.60 ±1.20
	380C to 430C	0.559 ±0.047 14.20 ±1.20
$L_1/L_2$	L1=L2 tolerance ± 0.047inch (±1.20 mm)	

**Part marking**



Side view

**Part number:**

AK6E-015C; AK6E-020C  
AK6E-025C; AK6E-030C  
AK6E-042C; AK6E-058C  
AK6E-066C; AK6E-076C  
AK6E-100C; AK6E-133C



Top view

**Part number:**

AK6E-170C  
AK6E-190C  
AK6E-240C  
AK6E-275C  
AK6E-300C  
AK6E-380C  
AK6E-430C

**Packaging information (mm)**

Bulk: 56 parts per box

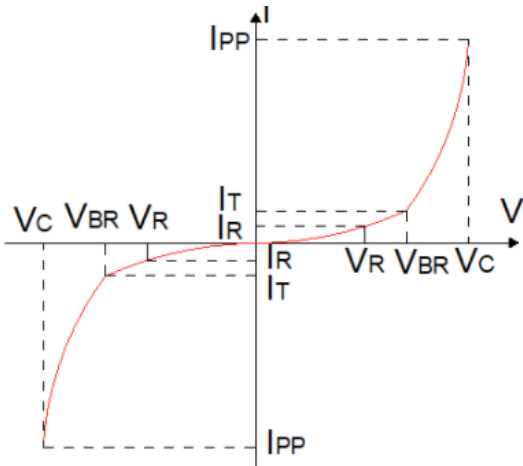
**Electrical characteristics** (+25 °C)

<b>Part number</b> <b>Bi-Polar</b>	<b>V<sub>R</sub></b> <b>(V)</b>	<b>V<sub>BR</sub> @ I<sub>T</sub></b> <b>min (V)</b>	<b>max (V)</b>	<b>I<sub>T</sub></b> <b>(mA)</b>	<b>I<sub>R</sub> @ V<sub>R</sub></b> <b>(μA)</b>	<b>V<sub>C</sub> @ I<sub>PP</sub></b> <b>(V)</b>	<b>I<sub>PP</sub></b> <b>(A)</b>	<b>UL recognized</b>
AK6E-015C	15	16	19	10	10	28	6000	
*AK6E-020C	20	22	24	10	10	50	6000	
*AK6E-025C	25	28	30	10	10	60	6000	
AK6E-030C	30	32	37	10	10	90	6000	
*AK6E-042C	42	47	51	10	10	105	6000	
*AK6E-058C	58	64	70	10	10	110	6000	X
*AK6E-066C	66	72	80	10	10	120	6000	X
*AK6E-076C	76	85	95	10	10	140	6000	X
*AK6E-100C	100	110	122	10	10	165	6000	
*AK6E-133C	133	147	162	10	10	220	6000	
*AK6E-170C	170	180	220	10	10	260	6000	X
*AK6E-190C	190	200	245	10	10	290	6000	
*AK6E-240C	240	250	285	10	10	340	6000	
*AK6E-275C	275	300	335	10	10	435	6000	
*AK6E-300C	300	330	366	10	10	470	6000	
*AK6E-380C	380	401	443	10	10	520	6000	X
*AK6E-430C	430	440	490	10	10	625	6000	X

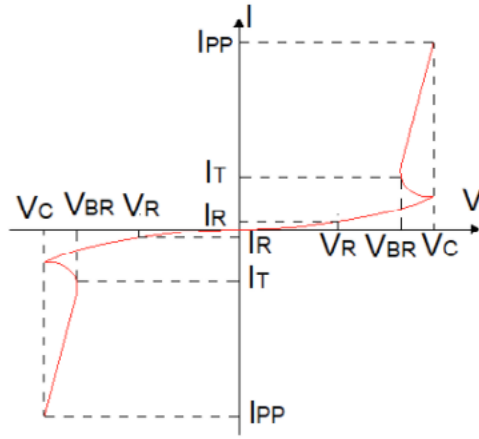
\*Products with negative resistance

**Ratings and V-I characteristic curves** (+25 °C unless otherwise noted)

**V- I curve characteristics (Bi-directional)**



**V- I curve characteristics (Bi-directional with negative resistance)**



Surge waveform: 8/20  $\mu$ s

$V_R$ : Stand-off voltage – Maximum voltage that can be applied

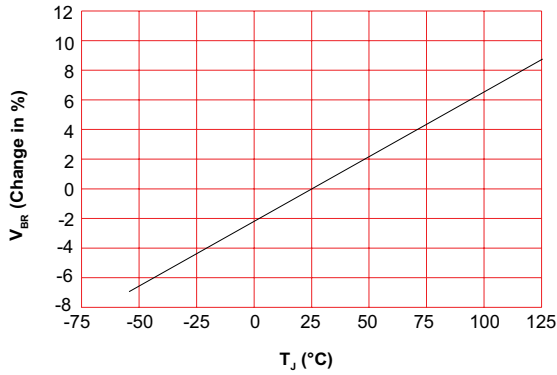
$V_{BR}$ : Breakdown voltage

$V_C$ : Clamping voltage – Peak voltage measured across the suppressor at a specified  $I_{pp}$

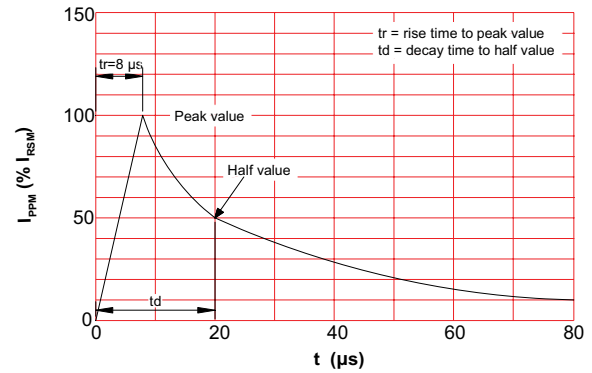
$I_R$ : Reverse leakage current

$I_T$ : Test current

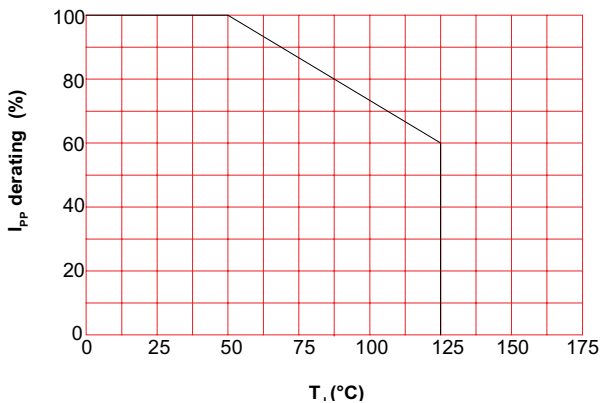
**Typical  $V_{BR}$  vs junction temperature**



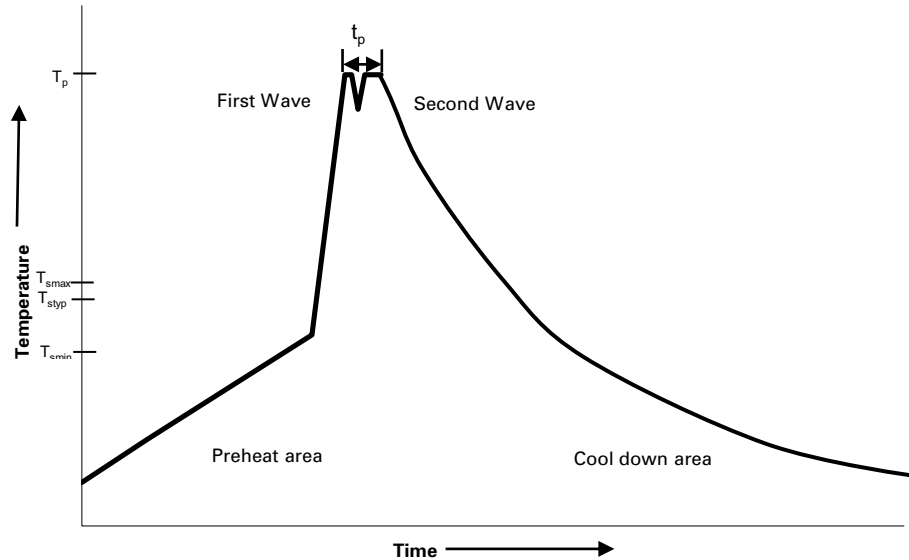
**Pulse waveform**



**Pulse derating curve**



**Wave solder profile**



**Reference EN 61760-1:2006**

Profile feature	Standard SnPb solder	Lead (Pb) free solder
Preheat		
• Temperature min. ( $T_{smin}$ )	100 °C	100 °C
• Temperature typ. ( $T_{styp}$ )	120 °C	120 °C
• Temperature max. ( $T_{smax}$ )	130 °C	130 °C
• Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )	70 seconds	70 seconds
$\Delta$ preheat to max Temperature	150 °C max.	150 °C max.
Peak temperature ( $T_p$ )*	235 °C – 260 °C	250 °C – 265 °C
Time at peak temperature ( $t_p$ )	10 seconds max 5 seconds max each wave	10 seconds max 5 seconds max each wave
Ramp-down rate	~ 2 K/s min ~3.5 K/s typ ~5 K/s max	~ 2 K/s min ~3.5 K/s typ ~5 K/s max
Time 25 °C to 25 °C	4 minutes	4 minutes

**Manual solder**

+350 °C (4-5 seconds by soldering iron), generally manual/hand soldering is not recommended

Life Support Policy: Eaton does not authorize the use of any of its products for use in life support devices or systems without the express written approval of an officer of the Company. Life support systems are devices which support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.

Eaton reserves the right, without notice, to change design or construction of any products and to discontinue or limit distribution of any products. Eaton also reserves the right to change or update, without notice, any technical information contained in this bulletin.

**Eaton**  
**Electronics Division**  
1000 Eaton Boulevard  
Cleveland, OH 44122  
United States  
Eaton.com/electronics

© 2020 Eaton  
All Rights Reserved  
Printed in USA  
Publication No. 11209 BU-MC20187  
November 2020

Eaton is a registered trademark.

All other trademarks are property of their respective owners.

Follow us on social media to get the latest product and support information.



## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:*

*Click to view products by [Eaton](#) manufacturer:*

Other Similar products are found below :

[60KS200C](#) [D12V0H1U2WS-7](#) [D18V0L1B2LP-7B](#) [82356050220](#) [D5V0M5U6V-7](#) [NTE4902](#) [P4KE27CA](#) [P6KE11CA](#) [P6KE39CA-TP](#)  
[P6KE8.2A](#) [SA110CA](#) [SA60CA](#) [SA64CA](#) [SMBJ12CATR](#) [SMBJ8.0A](#) [SMLJ30CA-TP](#) [ESD101-B1-02ELS E6327](#) [ESD112-B1-02EL E6327](#)  
[ESD119B1W01005E6327XTSA1](#) [ESD5V0L1B02VH6327XTSA1](#) [ESD7451N2T5G](#) [19180-510](#) [CPDT-5V0USP-HF](#) [3.0SMCJ33CA-F](#)  
[3.0SMCJ36A-F](#) [HSPC16701B02TP](#) [D3V3Q1B2DLP3-7](#) [D55V0M1B2WS-7](#) [DESD5V0U1BL-7B](#) [DRTR5V0U4SL-7](#) [SCM1293A-04SO](#)  
[ESD200-B1-CSP0201 E6327](#) [ESD203-B1-02EL E6327](#) [SM12-7](#) [SMF8.0A-TP](#) [SMLJ45CA-TP](#) [CEN955 W/DATA](#) [82350120560](#)  
[82356240030](#) [VESD12A1A-HD1-GS08](#) [CPDUR5V0R-HF](#) [CPDUR24V-HF](#) [CPDQC5V0U-HF](#) [CPDQC5V0USP-HF](#) [CPDQC5V0-HF](#)  
[D1213A-01LP4-7B](#) [D1213A-02WL-7](#) [ESDLIN1524BJ-HQ](#) [5KP100A](#) [5KP15A](#)