



Descriptions

The AK10 series of high power TVS diode is specially designed for meeting severe surge test environment of both AC and DC line protection applications. It features a very fast response and ultra low clamping characteristics over traditional metal oxide (MOV) solutions. They can be connected in series and / or parallel to create a very high surge current protection solution..



Descriptions

- Very low clamping voltage
- Ultra compact: less than one-tenth the size of traditional discrete solutions
- Sharp breakdown voltage
- Low slope resistance
- Bi-directional
- Foldbak technology for superior clamping factor
- Symmetric in leads width for easier soldering during assembly.
- IEC-61000-4-2 ESD 15kV(Air), 8kV (Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2
- EFT protection of data lines in accordance with IEC 61000-4-4
- Halogen-free
- RoHS compliant
- Glass passivated junction
- Pb-free E4 means 2nd level interconnect is Pb-free and the terminal finish material is Silver

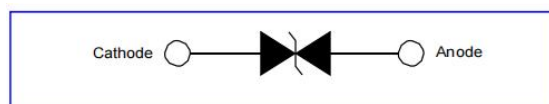
Maximum Ratings and Thermal Characteristics (TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Operating Junction and Storage Temperature Range	TJ ,TSTG	(-)55 to 125	°C
Current Rating ¹	I _{PP}	10	KA

Note:

1. Rated I_{PP} with 8/20μs pulse.

Functional Diagram



Electrical Characteristics (T_A=25°C unless otherwise noted)

Part Number	Reverse Stand-Off Voltage	Breakdown Voltage @IT		Test Current	Maximum Clamping Voltage @IPP(V)	Maximum Peak Pulse Current	Maximum Reverse Leakage @VRWM	Package
	VRWM(V)	VBR MIN (V)	VBR MAX (V)	IT(mA)	VC(V)	8/20us (KA)	IR(μA)	
AK10-030C-BC	30	32	37	10	58	10	1	BPSS
AK10-038C-BC	38	40.5	49.5	10	63.5	10	1	BPSS
AK10-058C-BC	58	64	70	10	110	10	1	BPSS
AK10-066C-BC	66	72	80	10	120	10	1	BPSS
AK10-076C-BC	76	85	95	10	140	10	1	BPSS
AK10-170C-BC	170	180	220	10	260	10	1	BPSS
AK10-190C-BC	190	200	245	10	290	10	1	BPSS
AK10-240C-BC	240	250	285	10	340	10	1	BPSS
AK10-300C-BC	300	310	345	10	480	10	1	BPSS
AK10-380C-BC	380	401	443	10	520	10	1	BPSS
AK10-430C-BC	430	440	490	10	625	10	1	BPSS
AK10-530C-BC	530	560	619	10	750	10	1	BPSS

Physical Specifications

Weight	Contact manufacturer
Case	Epoxy encapsulated
Terminal	Silver plated leads, solderable per MIL-STD-750 Method 2026

Flow/Wave Soldering (Solder Dipping)

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

Wave Solder Profile

Figure 1 - Non Lead-free Profile

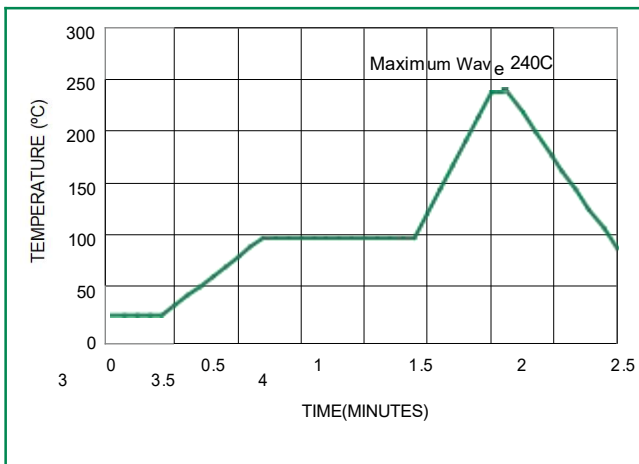
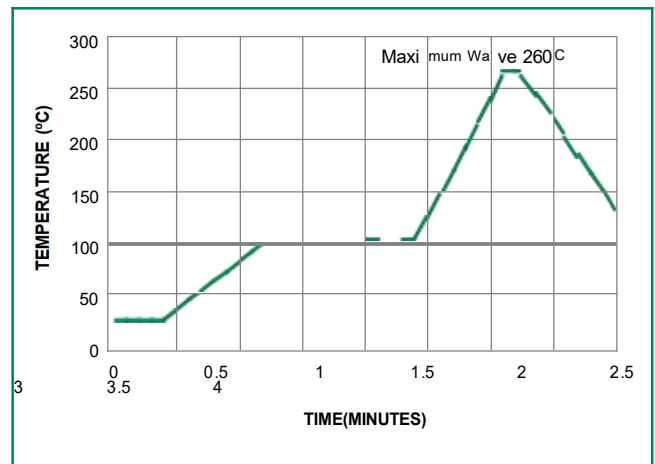
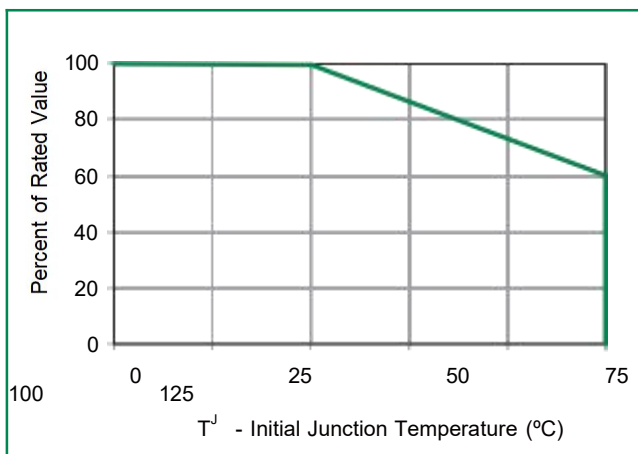


Figure 2 - Lead-free Profile



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

Figure 3 - Peak Power Derating



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

Figure 5 - Typical Peak Pulse Power Rating Curve

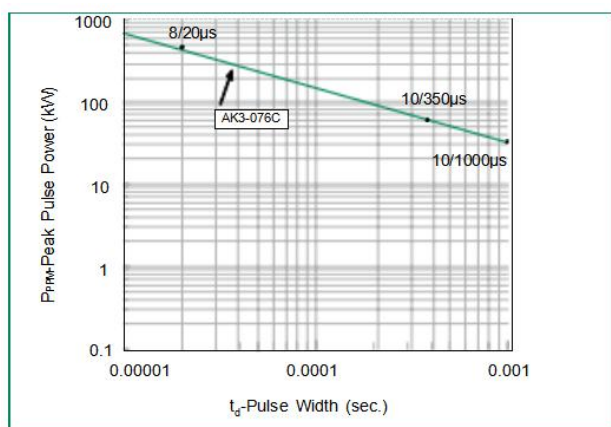


Figure 6 - Typical V_{BR} Vs Junction Temperature

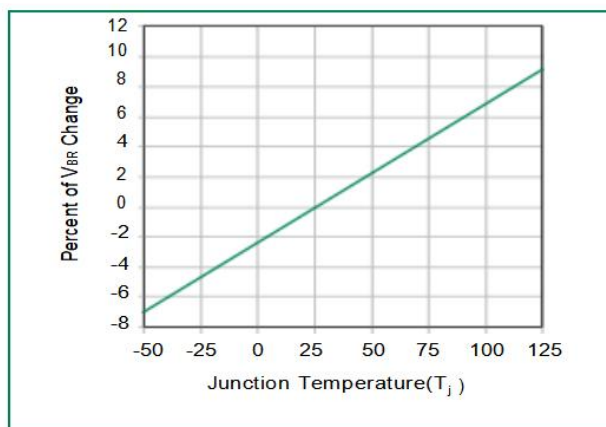


Figure 7 -Surge Response (8/20 Surge current waveform)

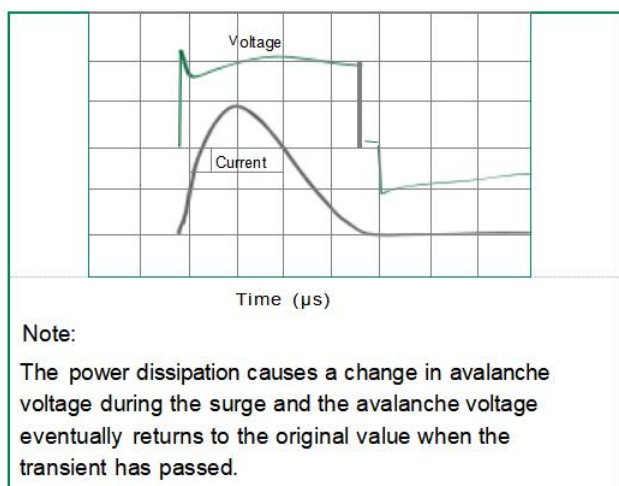
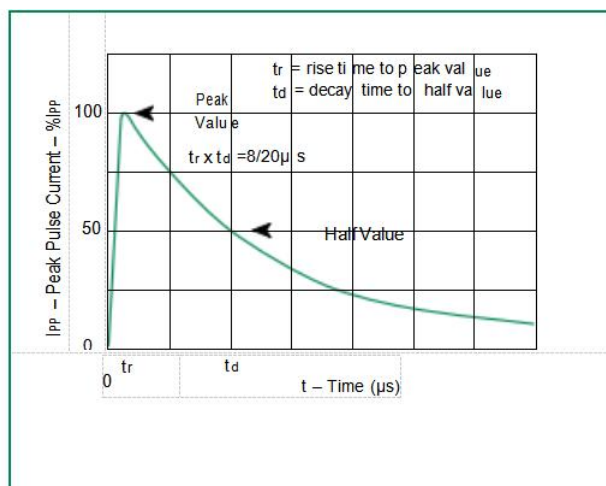
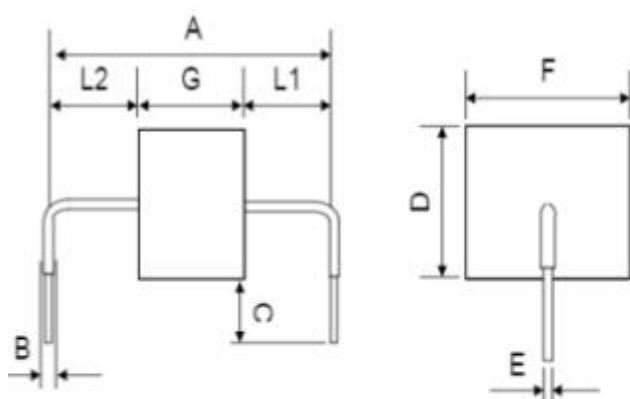


Figure 8 - Pulse Waveform



Dimensions



AK10尺寸图	
Ref. (mm)	Millimeters
A	24.15 ± 1.00
A-530C	29.5 ± 1.00
B	2.4 ± 0.60
C	6.0MIN
D	16.0MAX
E	1.28 ± 0.02
F	16.0MAX
G-030C/C-038C	6.0MAX
G-058C/C66C/076C/086C	8.0MAX
G170C/190C/240C	14MAX
G300C/G380C/430C	18MAX
G-530C	22MAX
L1=L2 tolerance ± 1.2mm	