



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

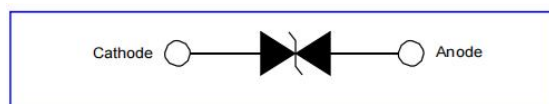
Maximum Ratings and Thermal Characteristics (TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Operating Junction and Storage Temperature Range	TJ ,TSTG	(-)55 to 125	°C
Current Rating1	Ipp	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)	VBRMIN (V)	VBRMAX (V)	IT (mA)	VC (V)	8/20μs (KA)	IR (μA)	
AK10-015C-BC	15	16	19	10	28	10	1	BPSS
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

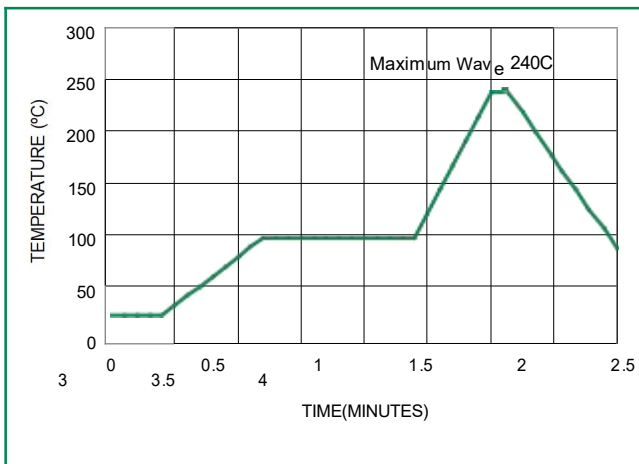
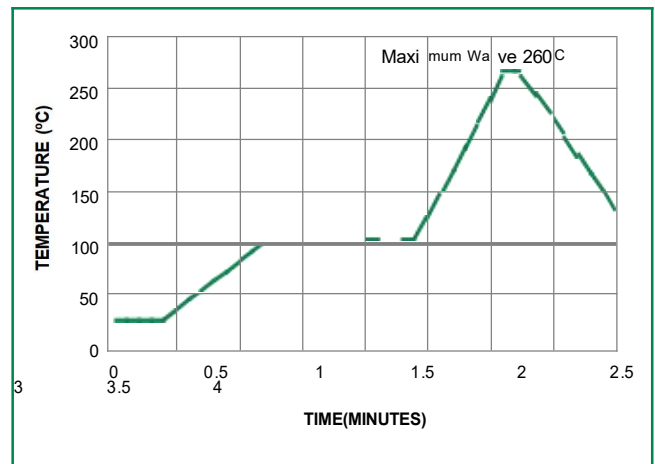
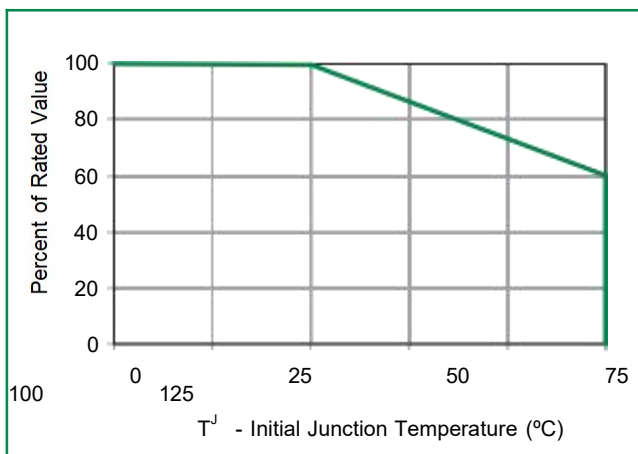


Figure 2 - Lead-free Profile



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

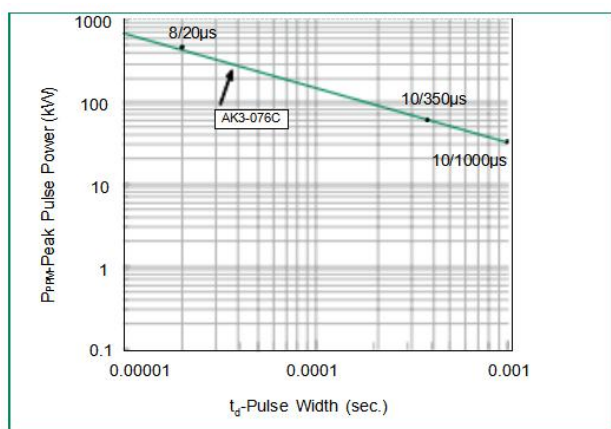


Figure 6 - Typical V_{BR} Vs Junction Temperature

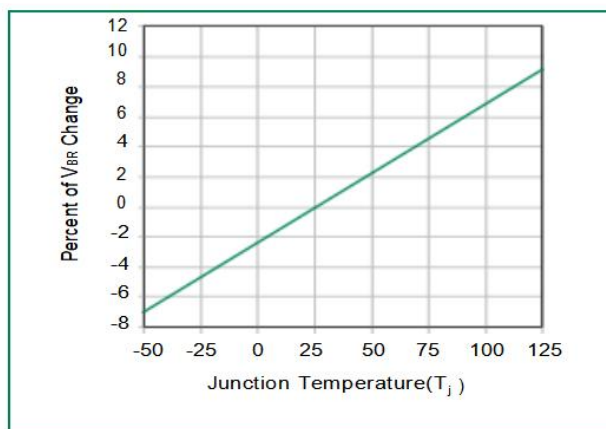


Figure 7 -Surge Response (8/20 Surge current waveform)

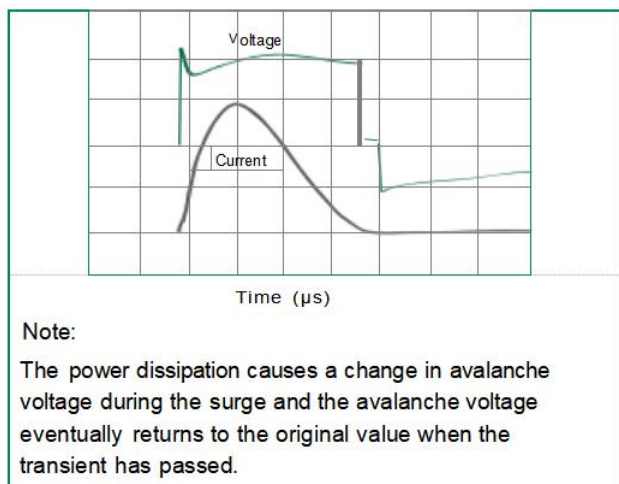
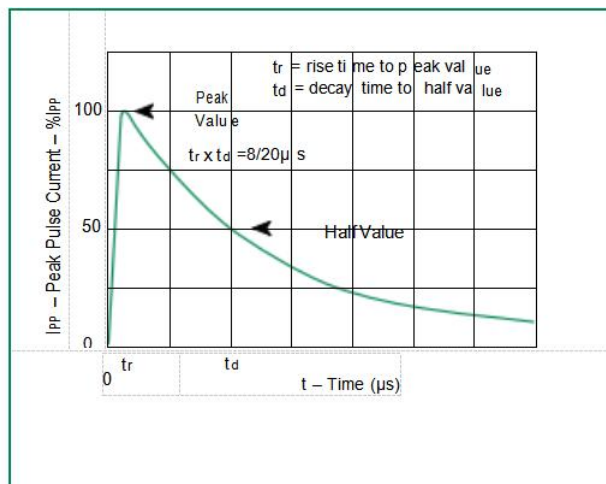
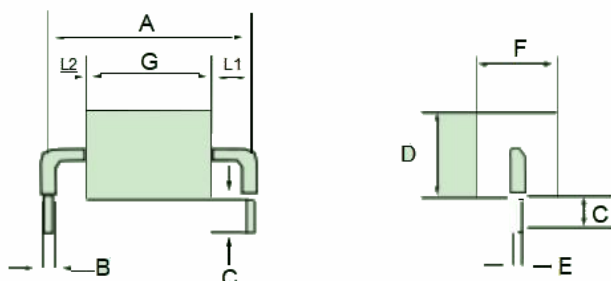


Figure 8 - Pulse Waveform



Dimensions



Dimensions	Inches	Millimeters
A	0.950 +/- 0.04	24.15 +/- 1.00
A - 530C	1.370 +/- 0.08	34.70 +/- 2.00
B	0.095 +/- 0.024	2.40 +/- 0.60
C	0.145 +/- 0.04	3.68 +/- 1.00
C - 030C/058C 066C/076C 530C	0.236 +/- 0.04	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
G - 030C	0.167 +/- 0.04	4.23 +/- 1.00
G - 058C/066C 076C	0.200 +/- 0.04	5.08 +/- 1.00
G - 170C/190C	0.362 +/- 0.04	9.20 +/- 1.00
G - 240C	0.420 +/- 0.04	10.67 +/- 1.00
G - 380C/430C	0.650 +/- 0.04	16.50 +/- 1.00
G - 530C	1.060 +/- 0.06	27.00 +/- 1.50
L1	0.310 +/- 0.04	7.87 +/- 1.00
L1 - 030C	0.393 +/- 0.04	9.96 +/- 1.00
L1 - 380C/430C	0.170 +/- 0.04	4.5 +/- 1.00
L1 - 530C	0.150 +/- 0.04	3.81 +/- 1.00
L2= A - (G+L1) tolerance +/- 0.04 inch (1.0 mm)		