TVS Diodes Axial Leaded - 3kA > KA series

Description

The KA 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.

- 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 datalines 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

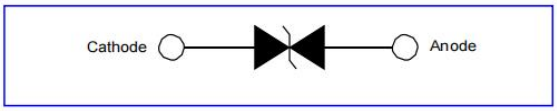
Maximum Ratings andThermal Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Operating Junction and StorageTemperature Range	TJ ,TSTG	(-)55 to125	°C
Current Rating1	I_{PP}	10	KA

Note:

1. Rated I_{PP} with 8/20μs pulse. measured

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)	
KA-015C	15	16	19	10	28	3	2	BPSS
KA-030C	30	32	37	10	58	3	2	BPSS
KA-042C	42	47	52	10	77	3	2	BPSS
KA-058C	58	64	70	10	110	3	2	BPSS
KA-066C	66	72	80	10	120	3	2	BPSS
KA-076C	76	85	95	10	140	3	2	BPSS
KA-150C	150	158	194	10	230	3	2	BPSS
KA-170C	170	179	220	10	260	3	2	BPSS
KA-208C	208	223	246	10	262	3	2	BPSS
KA-380C	380	401	443	10	520	3	2	BPSS
KA-430C	430	440	490	10	625	3	2	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

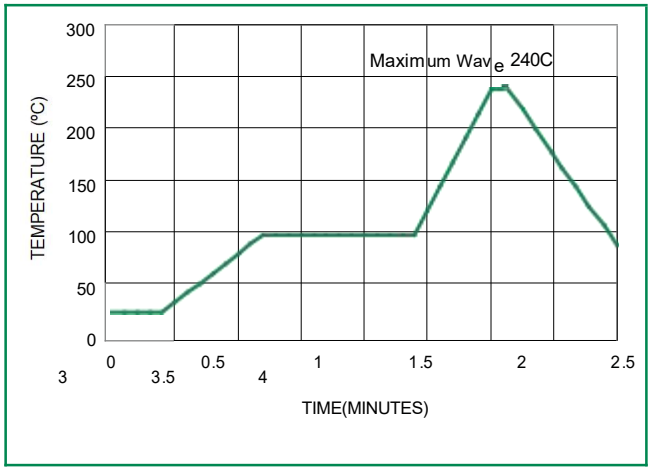
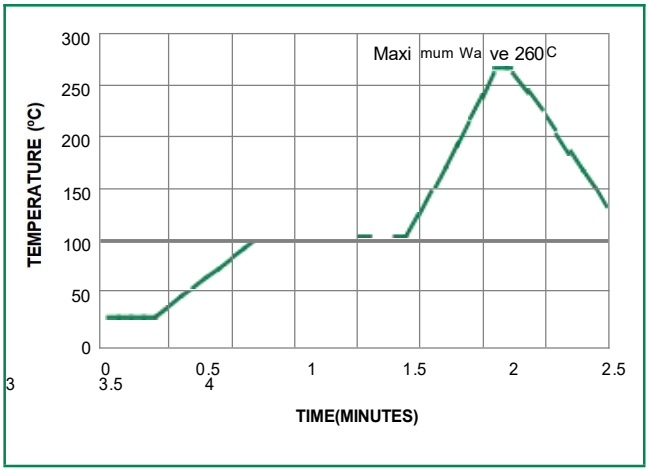


Figure 2 - Lead-free Profile



Ratings and Characteristic Curves (T_A=25°C unless otherwise noted)

Figure 3 - Peak Power Derating

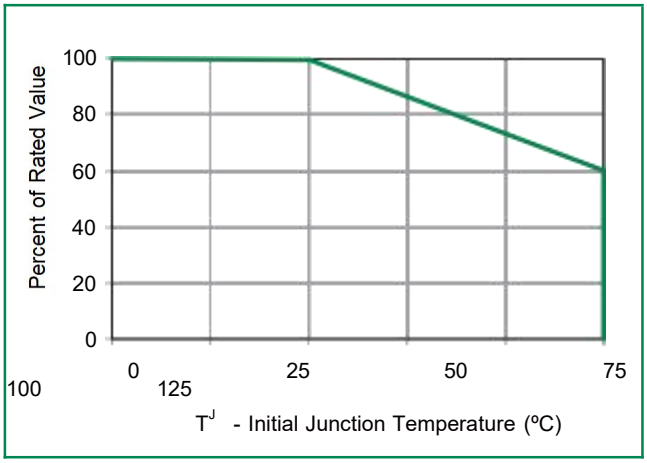
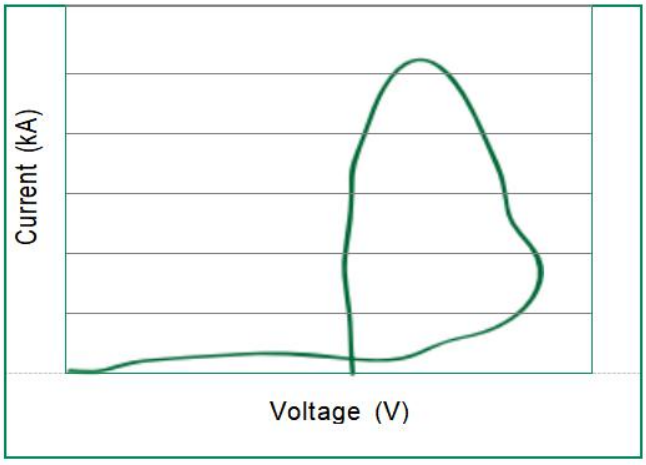


Figure 4 - Surge Response



Ratings and Characteristic Curves (T_A=25°C unless otherwise noted) (Continued)

Figure 5 - Typical Peak Pulse Power Rating Curve

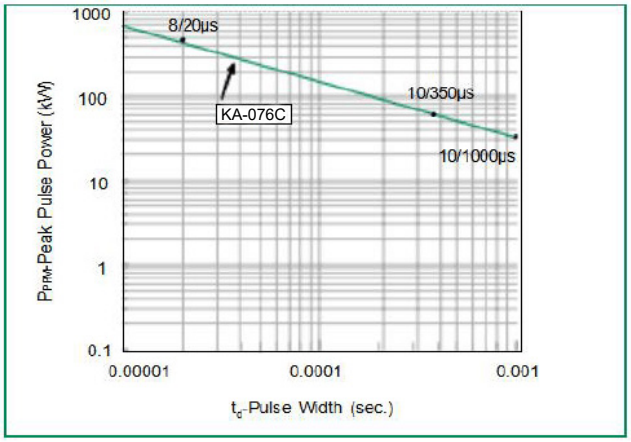


Figure 6 - Typical V_{BR} Vs Junction Temperature

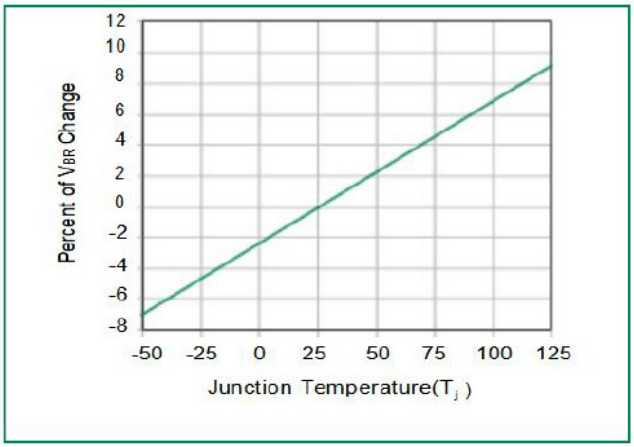
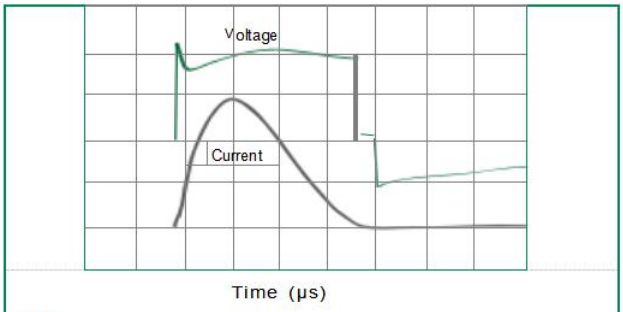


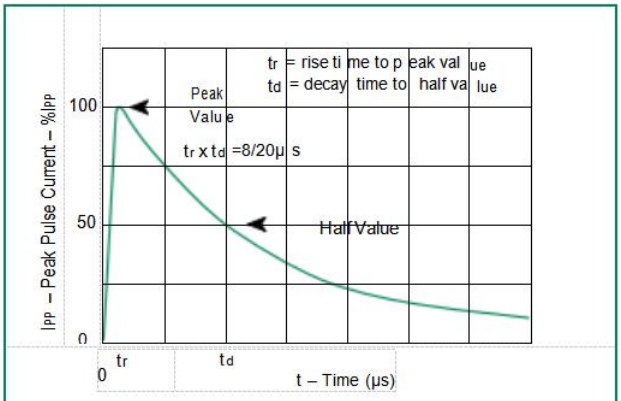
Figure 7 -Surge Response (8/20 Surge current waveform)



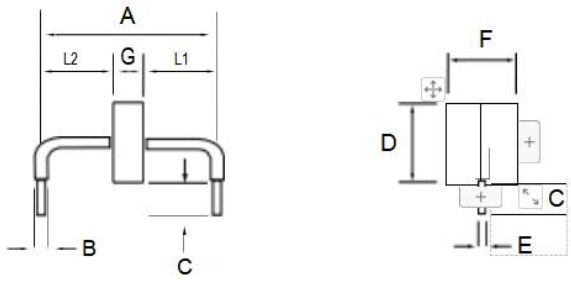
Note:

The power dissipation causes a change in avalanche voltage during the surge and the avalanche voltage eventually returns to the original value when the transient has passed.

Figure 8 - Pulse Waveform



Dimensions



Dimensions		Inches	Millimeters
A		0.951 +/- 0.040	24.15 +/- 1.00
B		0.094 +/- 0.024	2.40 +/- 0.60
C		0.236 +/- 0.039	6.00 +/- 1.00
D		0.433 max.	11.0 max.
E		0.050 +/- 0.002	1.27 +/- 0.05
F		0.374 max.	9.50 max.
G	-015C	0.093 +/- 0.039	2.36 +/- 1.00
	-030C/-066C	0.130 +/- 0.047	3.30 +/- 1.20
	-058C/-076C	0.168 +/- 0.047	4.27 +/- 1.20
	-150C	0.383 +/- 0.047	9.72 +/- 1.20
	-170C	0.420 +/- 0.047	10.67 +/- 1.20
	-208C	0.358 +/- 0.047	9.10 +/- 1.20
	-380C	0.547 +/- 0.047	13.90 +/- 1.20
	-430C	0.583 +/- 0.047	14.80 +/- 1.20
L1	-208C	0.296 +/- 0.047	7.52 +/- 1.20
		L1= L2 tolerance +/- 0.047 inch (+/- 1.20 mm)	
L2	-208C	= A - (G+L1) tolerance +/- 0.047 inch (+/- 1.20 mm)	
		L1= L2 tolerance +/- 0.047 inch (+/- 1.20 mm)	