

TVS Diodes Axial Leaded - 10kA > KC Series

Description

The KC 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 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



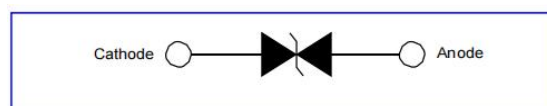
Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Operating Junction and Storage Temperature Range	T _J , T _{STG}	(-)55 to 125	°C
Current Rating ¹	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)	
KC-015C	15	16	19	10	28	10	2	BPSS
KC-030C	30	32	37	10	58	10	2	BPSS
KC-058C	58	64	70	10	110	10	2	BPSS
KC-066C	66	72	80	10	120	10	2	BPSS
KC-076C	76	85	95	10	140	10	2	BPSS
KC-170C	170	180	220	10	260	10	2	BPSS
KC-190C	190	200	245	10	290	10	2	BPSS
KC-240C	240	250	285	10	340	10	2	BPSS
KC-380C	380	401	443	10	520	10	2	BPSS
KC-430C	430	440	490	10	625	10	2	BPSS
KC-530C	530	560	619	10	750	10	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

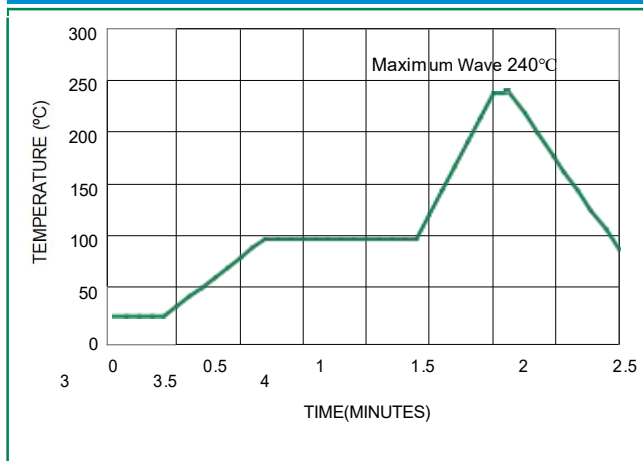
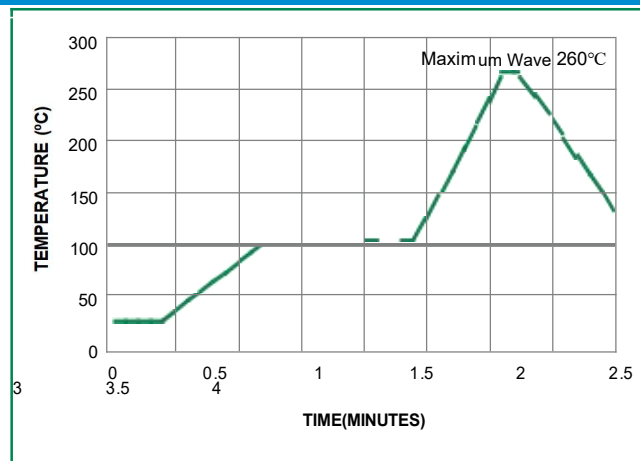


Figure 2 - Lead-free Profile



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

Figure 3 - Peak Power Derating

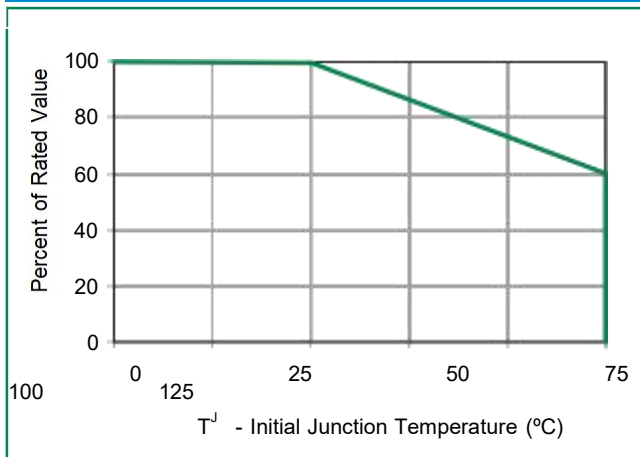


Figure 4 - Surge Response

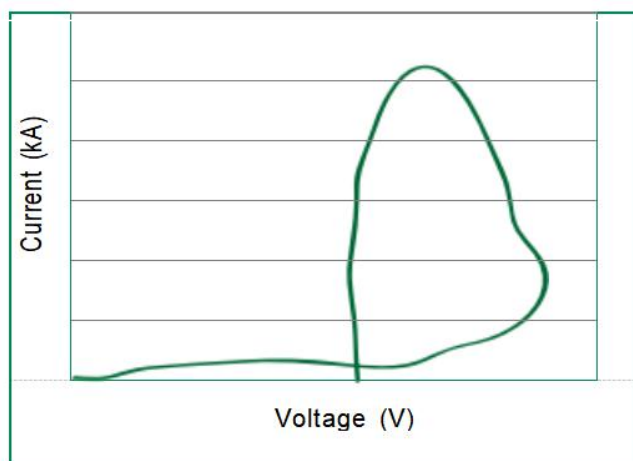


Figure 5 - Typical Peak Pulse Power Rating Curve

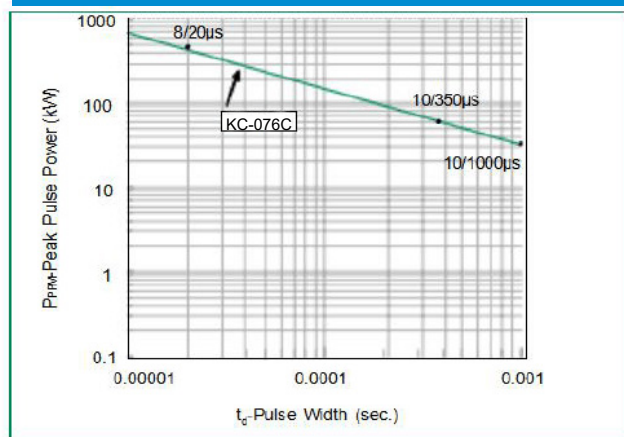
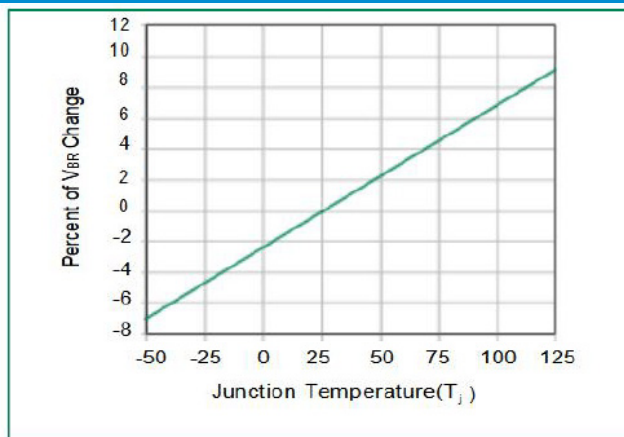


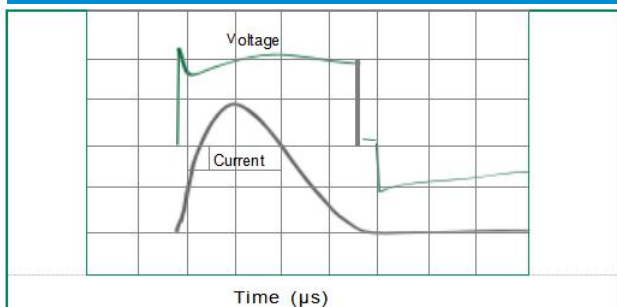
Figure 6 - Typical V_{BR} Vs Junction Temperature





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

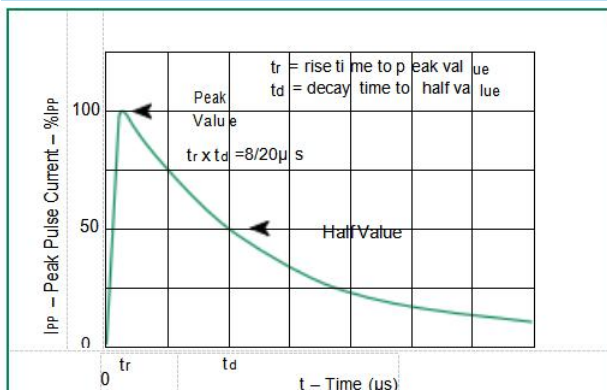
Figure 7 -Surge Response (8/20 Surge current waveform)



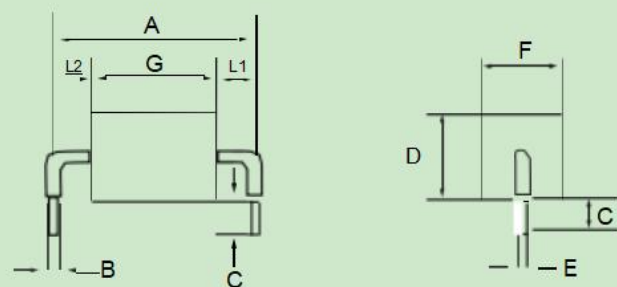
Note:

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

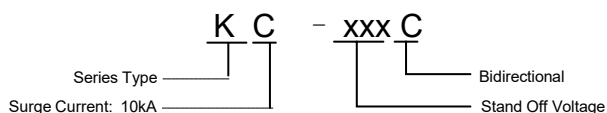


Dimensions



Dimensions	Inches	Millimeters
A	0.950 +/- 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)		

Part Number System



Order Information

Part Number	Marking	Package	Qualities
KC Series	KC-xxx	BPSS	56pcs/Box