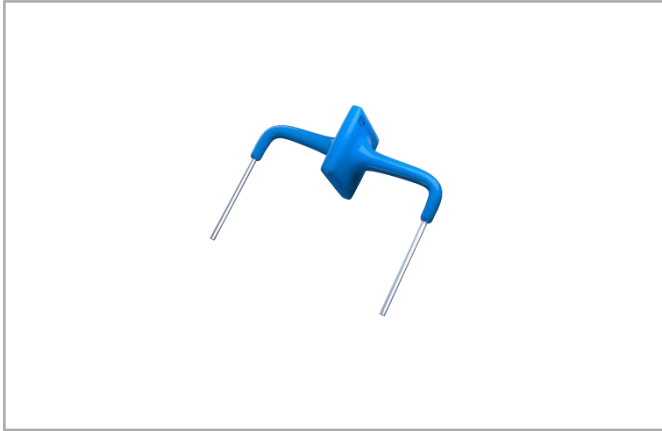


# HP3KA-L-D16 Series

## Axial Leaded – 3kA



### Description

The HP3KA-L-D16 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 varistor (MOV) solutions. They can be connected in series and / or parallel to create a very high surge current protection solution.

### Features

- Very low clamping voltage
- Ultra compact: less than one-tenth the size of traditional discrete solutions
- Sharp breakdown voltage
- Low slope resistance
- Bi-directional
- Symmetric in leads width for easier soldering during assembly.
- Halogen-free
- RoHS compliant
- ESD protection of data lines in accordance with IEC 61000-4-2, 30kV(Air), 30kV (Contact)
- EFT protection of data lines in accordance with IEC61000-4-4
- Glass passivated junction
- Pb-free E4 means 2nd level interconnect is Pb-free and the terminal finish material is Silver

### Additional Information



Resources



Accessories



Samples

### Maximum Ratings and Thermal Characteristics

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

Parameter	Symbol	Value	Unit
Operating Storage Temperature Range	$T_{STG}$	-55 to 125	$^{\circ}\text{C}$
Operating Junction Temperature Range	$T_J$	-55 to 150	$^{\circ}\text{C}$
Current Rating <sup>1</sup>	$I_{PP}$	3	kA

#### Notes:

1. Rated  $I_{PP}$  measured with 8/20 $\mu\text{s}$  pulse

### Functional Diagram



### Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Part Number	Reverse Stand-Off Voltage		Breakdown Voltage @ $I_T$		Test Current $I_T(\text{mA})$	Maximum Clamping Voltage @ $I_{PP}$ $V_C(\text{V})$	Current Rating @ 8/20 $\mu\text{s}$ $I_{PP}(\text{A})$	Reverse Leakage @ $V_{DC}$ $I_R(\mu\text{A})$
	$V_{AC}(\text{V})$	$V_{DC}(\text{V})$	$V_{B \text{ Min.}}(\text{V})$	$V_{B \text{ Max.}}(\text{V})$				
HP3KA-12CL-D16	8.5	12	14.0	16.0	1	28	3000	5
HP3KA-15CL-D16	11	15	17.0	19.0	1	30	3000	5
HP3KA-20CL-D16	14	20	22.0	24.5	1	40	3000	5
HP3KA-25CL-D16	17	25	28.0	31.0	1	50	3000	5
HP3KA-30CL-D16	21	30	33.0	36.5	1	60	3000	5
HP3KA-33CL-D16	23	33	35.0	39.0	1	66	3000	5
HP3KA-38CL-D16	27	38	40.5	49.5	1	69	3000	5
HP3KA-42CL-D16	30	42	47.0	52.0	1	77	3000	5
HP3KA-58CL-D16	40	58	64.0	72.0	1	110	3000	5
HP3KA-66CL-D16	45	66	70.0	77.5	1	125	3000	5
HP3KA-76CL-D16	54	76	85.0	94.0	1	140	3000	5
HP3KA-100CL-D16	72	100	110.0	121.5	1	165	3000	5
HP3KA-133CL-D16	100	133	147.0	162.5	1	220	3000	5
HP3KA-150CL-D16	105	150	165.0	182.5	1	240	3000	5
HP3KA-170CL-D16	130	170	180.0	199.0	1	260	3000	5
HP3KA-190CL-D16	145	190	200.0	221.0	1	290	3000	5
HP3KA-200CL-D16	150	200	222.0	245.5	1	330	3000	5
HP3KA-240CL-D16	180	240	250.0	276.5	1	340	3000	5

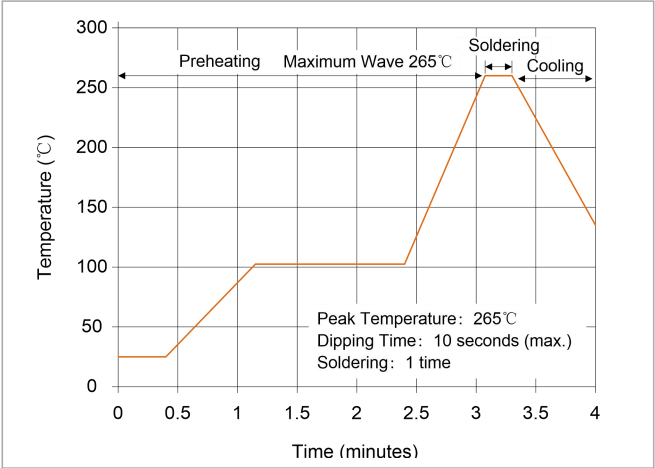
Notes: Using 8/20 $\mu\text{s}$  wave shape as defined in IEC61000-4-5.

# HP3KA-L-D16 Series

Axial Leaded – 3kA

## Wave Solder Profile

**Figure 1:**  
Wave Soldering Temperature Profile

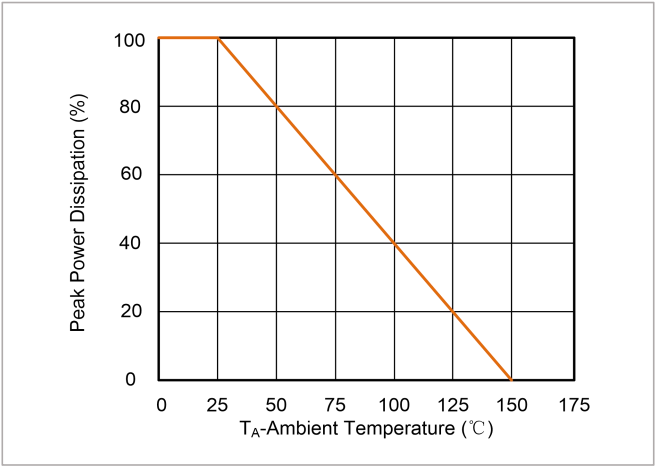


## Flow/Wave Soldering (Solder Dipping)

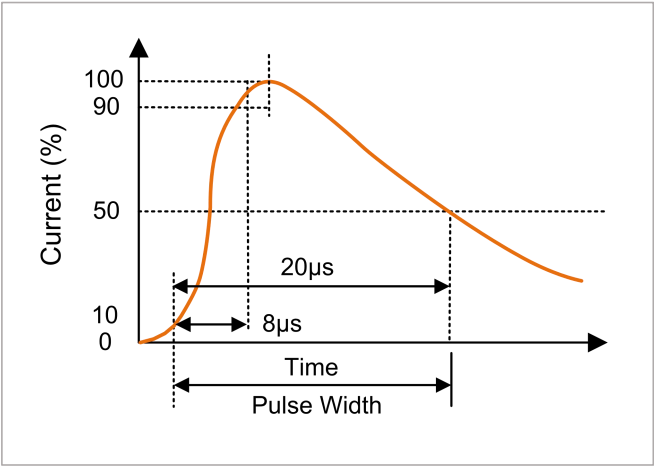
Peak Temperature :	265°C
Dipping Time :	10 seconds (max.)
Soldering :	1 time

## Ratings and Characteristic Curves (T<sub>A</sub>=25°C unless otherwise noted)

**Figure 2:**  
Power Derating Curve



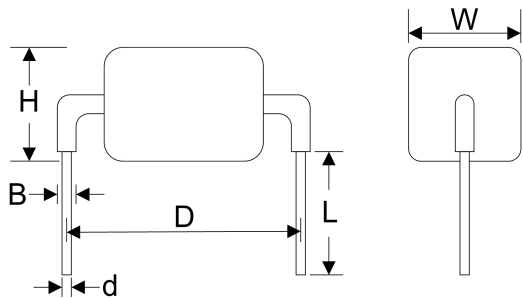
**Figure 3:**  
Surge Pulse Waveform (8/20μs)



# HP3KA-L-D16 Series

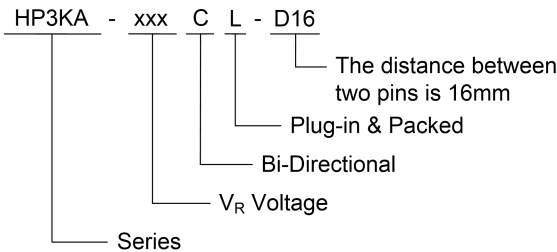
Axial Leaded – 3kA

## Dimensions

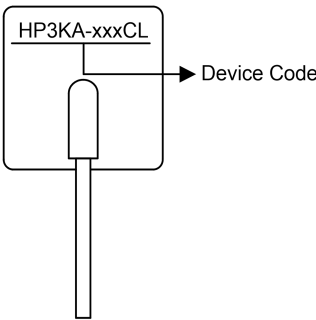


Symbol	Millimeters	Inches
D	16.0±1.0	0.630±0.039
B	1.35min	0.053min
H	13.0max	0.512max
L	6.0±1.20	0.236±0.047
d	1.28±0.10	0.050±0.004
W	13.0max	0.512max

## Part Numbering System



## Part Marking System



## Packaging

Part number	Quantity	Packaging Option
HP3KA-xxxCL-D16	80pcs/Box	Tray Pack