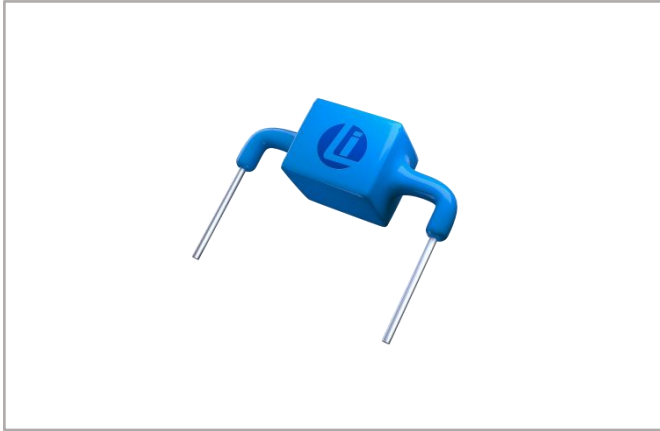


# HP20KA-L Series

## Axial Leaded – 20kA



### Description

The HP20KA-L 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
- Foldbak technology for superior clamping factor
- ESD protection of data lines in accordance with IEC61000-4-2, 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>	$I_{PP}$	20	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	Maximum Clamping Voltage @ $I_{PP}$	Current Rating @ 8/20 $\mu\text{s}$	Reverse Leakage @ $V_{DC}$
	$V_{AC}(V)$	$V_{DC}(V)$	$V_{B \text{ Min.}}(V)$	$V_{B \text{ Max.}}(V)$	$I_T(mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$
HP20KA-12CL	8.5	12	14.0	16.0	1	28	20000	5
HP20KA-15CL	11	15	17.0	19.0	1	30	20000	5
HP20KA-20CL	14	20	22.0	24.5	1	40	20000	5
HP20KA-25CL	17	25	28.0	31.0	1	50	20000	5
HP20KA-30CL	21	30	33.0	36.5	1	60	20000	5
HP20KA-33CL	23	33	35.0	39.0	1	66	20000	5
HP20KA-38CL	27	38	40.5	49.5	1	69	20000	5
HP20KA-42CL	30	42	47.0	52.0	1	77	20000	5

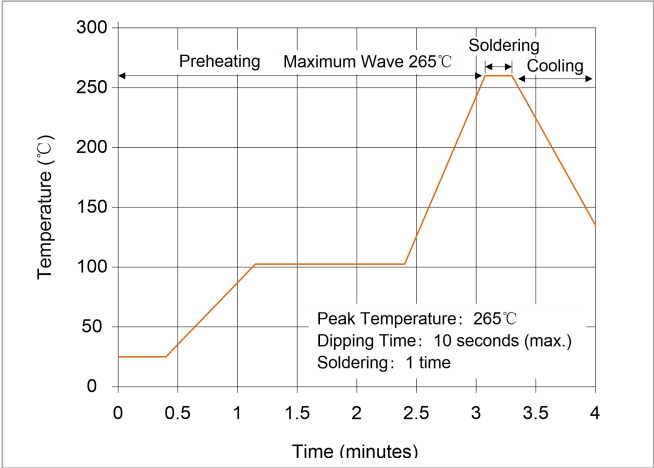
Notes: Using 8/20 $\mu\text{s}$  wave shape as defined in IEC61000-4-5.

# HP20KA-L Series

Axial Leded – 20kA

## Wave Solder Profile

**Figure 1:**  
Wave Soldering Temperature Profile

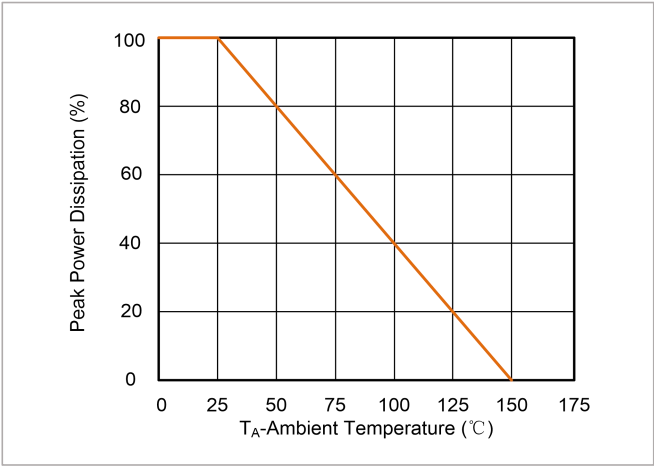


## Flow/Wave Soldering (Solder Dipping)

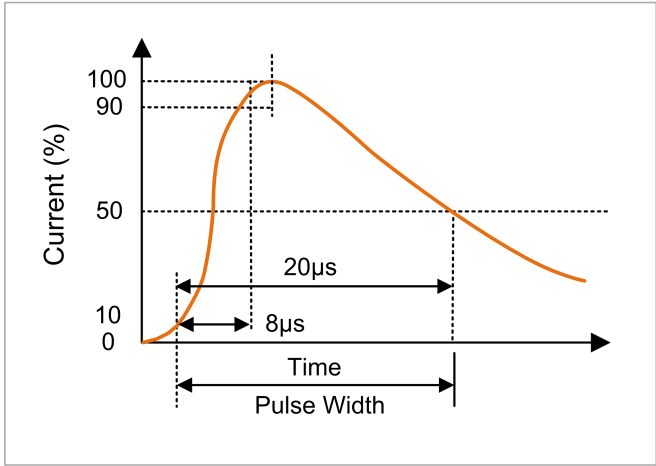
Peak Temperature :	265°C
Dipping Time :	10 seconds (max.)
Soldering :	1 time

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

**Figure 2:**  
Power Derating Curve



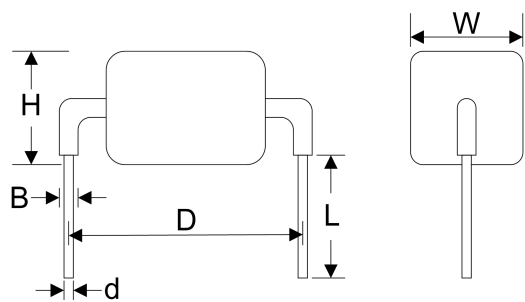
**Figure 3:**  
Surge Pulse Waveform (8/20μs)



# HP20KA-L Series

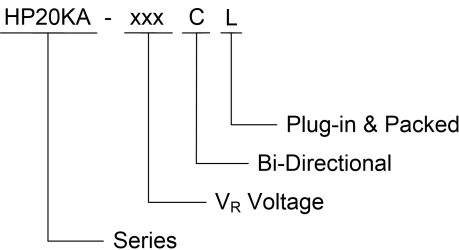
Axial Leaded – 20kA

## Dimensions

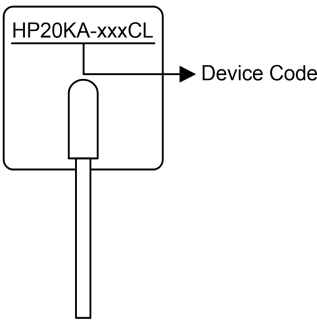


Symbol	Millimeters	Inches
D	24.15±1.0	0.951±0.039
B	1.35min	0.053min
H	16.0max	0.630max
L	6.0±1.20	0.236±0.047
d	1.28±0.10	0.050±0.004
W	16.0max	0.630max

## Part Numbering System



## Part Marking System



## Packaging

Part number	Quantity	Packaging Option
HP20KA-xxxCL	80pcs/Box	Tray Pack