

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

($T_A=25\text{ C}$ 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 ¹	I_{PP}	20	kA

Notes:

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

Functional Diagram



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

Part Number	Reverse Stand-Off Voltage		Breakdown Voltage @ I_T		Test Current	Maximum Clamping Voltage @ I_{PP}	Current Rating @8/20 μs	Reverse Leakage @ V_{DC}
	$V_{AC}(V)$	$V_{DC}(V)$	$V_{B\text{ Min.}}(V)$	$V_{B\text{ Max.}}(V)$	$I_T(\text{mA})$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$
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

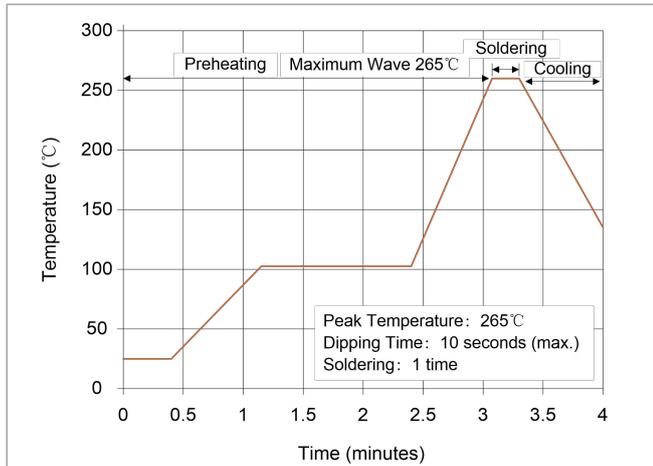
Notes: Using 8/20 μs wave shape as defined in IEC61000-4-5.

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

Figure 2:
Peak Power Rating Curve

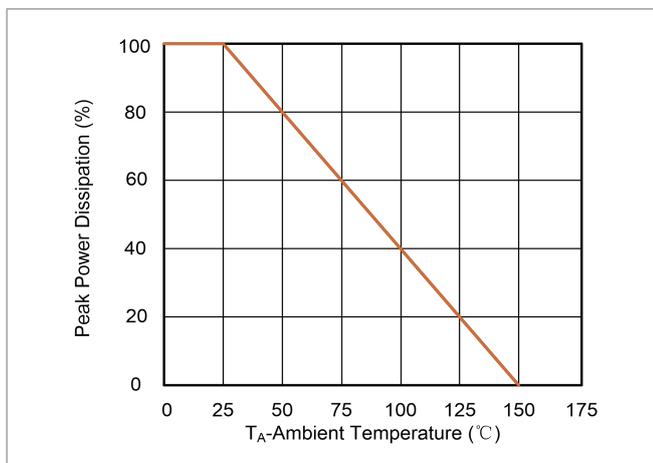
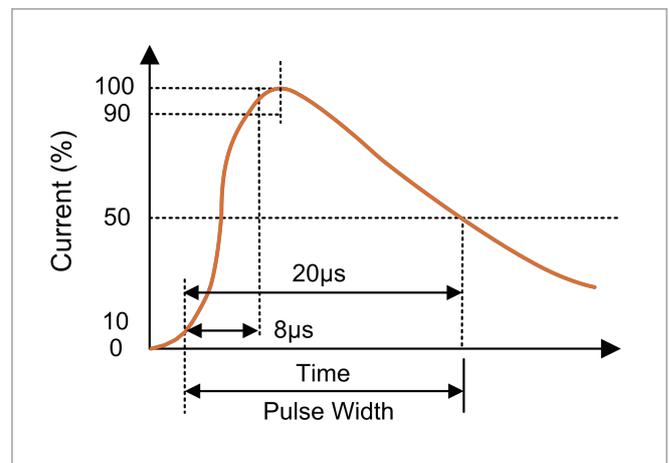


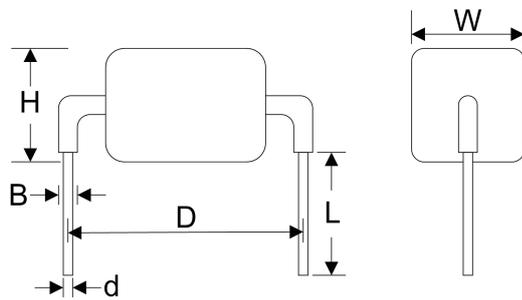
Figure 3:
Pulse Derating Curve



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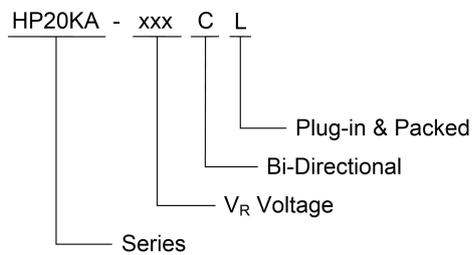
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Dimensions

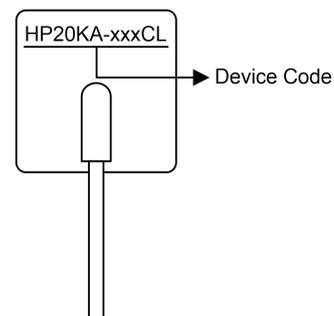


Symbol	Millimeters	Inches
D	24.15±1.0	0.951±0.039
B	1.35min	0.053min
H	16.0max	0.630max
L	6.0±1.20	0.236±0.047
d	1.28±0.10	0.050±0.004
W	16.0max	0.630max

Part Numbering System



Part Marking System



Packaging

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