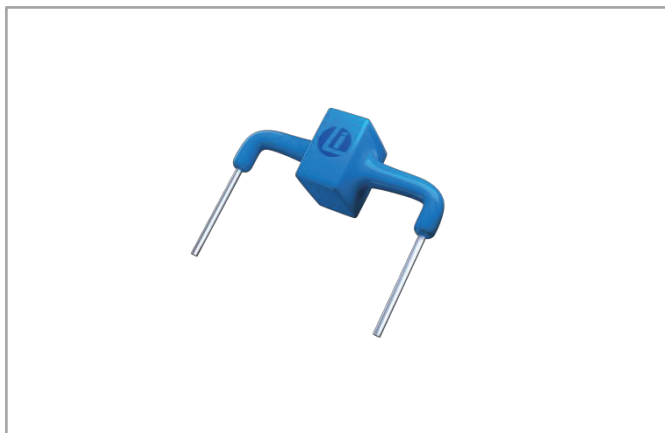


HP6KA-L-S Series

Axial Leaded – 6kA



Description

The HP6KA-L-S 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 Rating1	I_{PP}	6	kA

Notes:

1. Rated I_{PP} measured with 8/20 μs 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 μs	Reverse Leakage @ V_{DC}
	$V_{AC}(V)$	$V_{DC}(V)$	$V_{B \text{ Min.}}(V)$	$V_{B \text{ Max.}}(V)$	$I_T(mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$
HP6KA-12CLS	8.5	12	14.0	16.0	1	28	6000	5
HP6KA-15CLS	11	15	17.0	19.0	1	30	6000	5
HP6KA-20CLS	14	20	22.0	24.5	1	40	6000	5
HP6KA-25CLS	17	25	28.0	31.0	1	50	6000	5
HP6KA-30CLS	21	30	33.0	36.5	1	60	6000	5
HP6KA-33CLS	23	33	35.0	39.0	1	66	6000	5
HP6KA-38CLS	27	38	40.5	49.5	1	69	6000	5
HP6KA-42CLS	30	42	47.0	52.0	1	77	6000	5
HP6KA-58CLS	40	58	64.0	72.0	1	110	6000	5
HP6KA-66CLS	45	66	70.0	77.5	1	125	6000	5
HP6KA-76CLS	54	76	85.0	94.0	1	140	6000	5
HP6KA-100CLS	72	100	110.0	121.5	1	165	6000	5
HP6KA-133CLS	100	133	147.0	162.5	1	220	6000	5
HP6KA-150CLS	105	150	165.0	182.5	1	240	6000	5
HP6KA-170CLS	130	170	180.0	199.0	1	260	6000	5
HP6KA-190CLS	145	190	200.0	221.0	1	290	6000	5
HP6KA-200CLS	150	200	222.0	245.5	1	330	6000	5
HP6KA-240CLS	180	240	250.0	276.5	1	340	6000	5

HP6KA-L-S Series

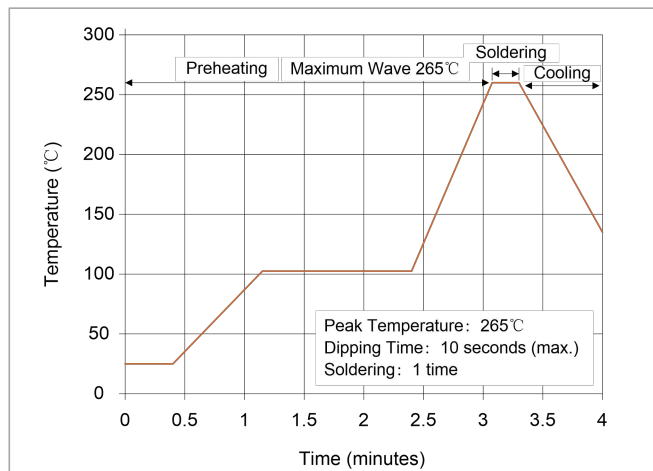
Axial Leaded – 6kA

Part Number	Reverse Stand-Off Voltage		Breakdown Voltage @ I_r		Test Current	Maximum Clamping Voltage @ I_{PP}	Current Rating @ 8/20 μ s	Reverse Leakage @ V_{DC}
	$V_{AC}(V)$	$V_{DC}(V)$	$V_{B Min.}(V)$	$V_{B Max.}(V)$	$I_r(mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$
HP6KA-275CL-S	210	275	300.0	331.5	1	435	6000	5
HP6KA-300CL-S	230	300	330.0	365.0	1	470	6000	5
HP6KA-380CL-S	275	380	401.0	443.5	1	520	6000	5
HP6KA-430CL-S	310	430	440.0	486.5	1	625	6000	5

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

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

Figure 2:
Peak Pulse Power Rating Curve

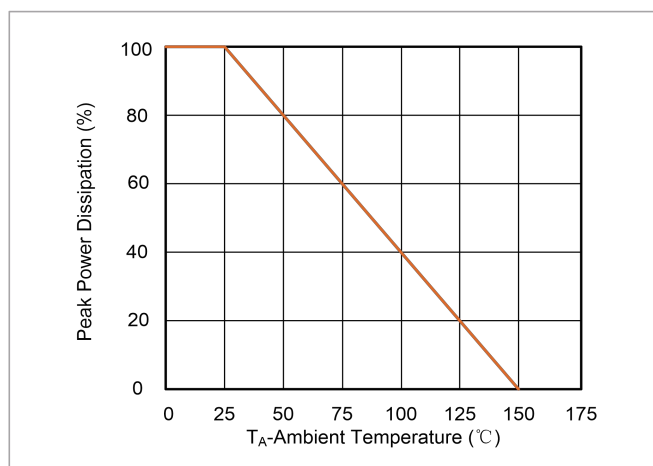
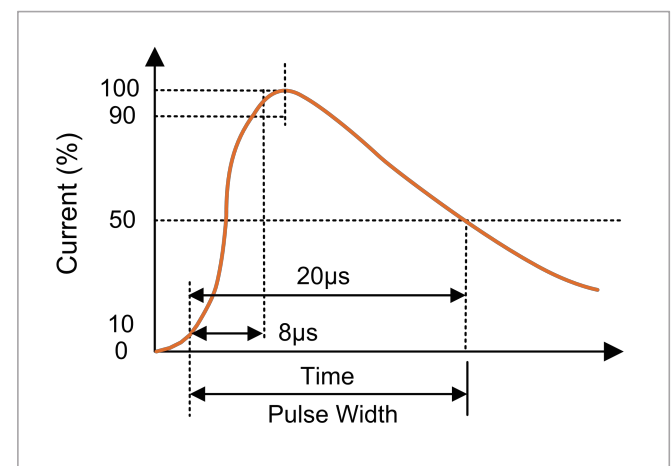


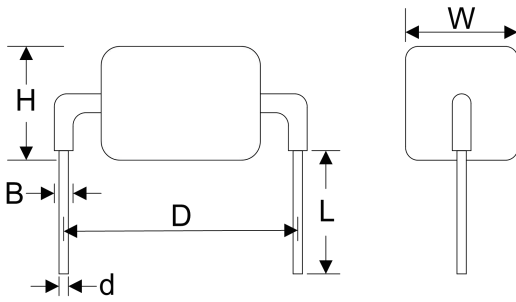
Figure 3:
Pulse Derating Curve



HP6KA-L-S Series

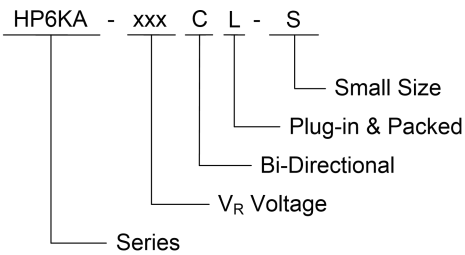
Axial Leaded – 6kA

Dimensions

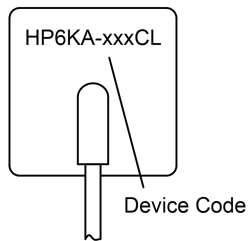


Symbol	Millimeters	Inches
D	24.15±1.0	0.951±0.039
B	1.5min	0.060min
H	11.2max	0.441max
L	6.0±1.20	0.236±0.047
d	1.28±0.10	0.050±0.004
W	10.6max	0.417max

Part Numbering System

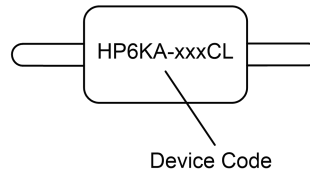


Part Marking System



Apply to P/N listed below:

HP6KA-12CL-S
 HP6KA-15CL-S
 HP6KA-20CL-S
 HP6KA-25CL-S
 HP6KA-30CL-S
 HP6KA-33CL-S
 HP6KA-38CL-S
 HP6KA-42CL-S
 HP6KA-58CL-S
 HP6KA-66CL-S
 HP6KA-76CL-S



Apply to P/N listed below:

HP6KA-100CL-S
 HP6KA-133CL-S
 HP6KA-150CL-S
 HP6KA-170CL-S
 HP6KA-190CL-S
 HP6KA-200CL-S
 HP6KA-240CL-S
 HP6KA-275CL-S
 HP6KA-300CL-S
 HP6KA-380CL-S
 HP6KA-430CL-S

Packaging

Part number	Quantity	Packaging Option
HP6KA-xxxCL-S	80pcs/Box	Tray Pack