

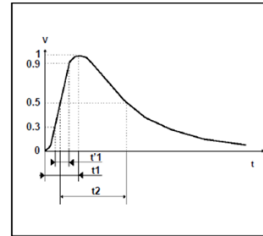
High Surge Protection Devices

Super High Voltage (SV) Series

Features:

- Bidirectional and symmetrical V/I characteristics
- Meet IEC61000-4-5 Standard
- Large withstanding surge current capability - 200~800A (@8/20 μ s)
- Multilayer construction provides higher power dissipation

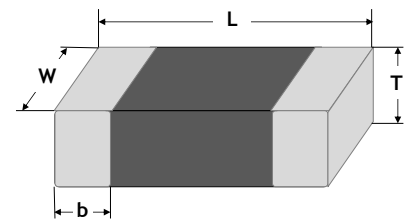
Surge Waveform:



Severity Level	t1 (=1.67t ₁)	t2
1	8 μ s	20 μ s
2	10 μ s	1000 μ s

Shape and Dimensions:

Unit (mm)	1210	1812	2220	3220
Length (L)	3.2 +0.6/-0.2	4.5+0.6/-0.2	6.0 +0.7/-0.3	8.1 +0.7/-0.3
Width (W)	2.5 +0.4/-0.2	3.2+0.5/-0.2	5.3 +0.5/-0.3	5.3 +0.6/-0.3
Thickness (T)	2.60 Max.	3.50 Max.	3.60 Max.	3.70 Max.
Termination bandwidth (b)	0.5 \pm 0.25	0.5+0.35/-0.1	0.5+0.35/-0.1	0.8+0.5/-0.1



Product Identification:

HSP	2220	SV	390V	0800
Category Code	Size Code	Application Code	Breakdown Voltage Code	Surge Current Code
HSP = High Surge Protection Device	Inch (mm) 1210 (3225) 1812 (4532) 2220 (6053) 3220 (8153)	SV = Super High Voltage	390V = 390V 430V = 430V 470V = 470V	0200 = 200A 0500 = 500A 0800 = 800A

Electrical Characteristics:

Operating temperature: -55 to +85°C

Part Number	Size	Working Voltage		Breakdown Voltage ¹ @1mA (V)	Clamping Voltage ² (V)	Surge Current ³ @8/20 μ s (A)		Energy Max. @10/1000 μ s (J)	Capacitance ⁴ @1kHz (pF)	Safety Certification	
		Vac	Vdc			1 time	15 times			UL	cUL
HSP1210SV390V0200	1210	250	320	390 (\pm 10%)	647	200	100	7.2	105	✓	
HSP1812SV470V0500	1812	300	385	470 (\pm 10%)	775	500	250	23.0	200		
HSP2220SV390V0500	2220	250	320	390 (\pm 10%)	647	500	250	19.8	235	✓	
HSP2220SV430V0500	2220	275	350	430 (\pm 10%)	705	500	250	21.6	215	✓	
HSP2220SV470V0500	2220	300	385	470 (\pm 10%)	775	500	250	23.7	195	✓	
HSP2220SV390V0800	2220	250	320	390 (\pm 10%)	647	800	500	31.8	320	✓	
HSP2220SV430V0800	2220	275	350	430 (\pm 10%)	705	800	500	34.7	305	✓	✓
HSP2220SV470V0800	2220	300	385	470 (\pm 10%)	775	800	500	38.0	290	✓	✓
HSP3220SV430V0800	3220	275	350	430 (\pm 10%)	705	800	500	65.0	490	✓	✓
HSP3220SV470V0800	3220	300	385	470 (\pm 10%)	775	800	500	71.2	450	✓	✓

¹ The breakdown voltage was measured at 1 mA current.

² The clamping voltage was measured at standard current 1210 (2.5A), 1812 (5A), 2220 (10A) and 3220 (10A).

³ The surge current was tested at 8/20 μ s waveform.

⁴ The capacitance value only for customer reference, it's not formal specification.