Revision of Mar. 2023

High Surge Protection Devices

Super High Current (SC) Series

Features:

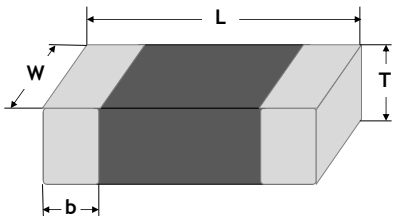
- SMD type – 1206~2220 sizes
- Bidirectional and symmetrical V/I characteristics
- Meet IEC61000-4-5/K21 standard
- Large withstanding surge current capability à 500~8000A (@8/20μs)
- Excellent low leakage current <15μA
- Multilayer construction provides higher power dissipation
- RoHS compliant

Application Fields:

- Telecom equipment RJ45, LAN connector, Ethernet
- Outdoor/Indoor AP/IAD
- Security system IP CAM
- Low voltage power line
- Base station

Shape and Dimensions:

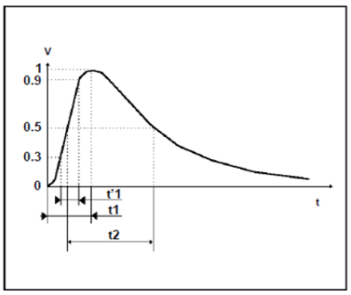
Unit (mm)	1206	1210	1812	2220
Length (L)	3.2 +0.6/-0.2	3.2 +0.6/-0.2	4.5 +0.6/-0.2	6.0 +0.7/-0.3
Width (W)	1.6 +0.4/-0.2	2.5 +0.4/-0.2	3.2 +0.5/-0.2	5.3 +0.5/-0.3
Thickness (T)	1.90 Max.	2.60 Max.	3.50 Max.	3.60 Max.
Termination band-width (b)	0.5±0.20	0.5±0.25	0.5 +0.35/-0.1	0.5 +0.35/-0.1



Product Identification:

HSP	1206	SC	012V	0500
Category Code	**Size Code**	**Application Code**	**Breakdown Voltage Code**	**Surge Current Code**
HSP = High Surge Protection Device	**Inch** 1206 1210 1812 2220	**SC** = Super High Current	**012V** = 12V **024V** = 24V **047V** = 47V **075V** = 75V	**0500** = 500A **1000** = 1000A **2000** = 2000A **3000** = 3000A **5000** = 5000A **8000** = 8000A

Surge Waveform:



Severity Level	t1 (=1.67t'1)	t2
1	8 μs	20 μs

Fig. 1 8/20 μs surge definition

Packaging:

Size	1206	1210	1812	2220
Pcs	2000 (7 inch reel)	1500 (7 inch reel)	500 (7 inch reel)	500 (7 inch reel)

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Electrical Characteristics:

Part Number	Size	Working Voltage		Breakdown Voltage @1mA (V) [1]	Clamping Voltage (V) [2]	Surge Current @ 8/20μs (A) [3]
		VAC	VDC			
HSP1206SC012V0500	1206	6	9	12 (12~20)	<25	500
HSP1206SC024V0500	1206	14	18	24 (±10%)	<45	500
HSP1206SC047V0500	1206	30	38	47 (±10%)	<85	500
HSP1206SC075V0500	1206	48	60	75 (±10%)	<100	500
HSP1210SC024V1000	1210	14	18	24 (±10%)	<45	1000
HSP1210SC047V1000	1210	30	38	47 (±10%)	<85	1000
HSP1210SC075V1000	1210	48	60	75 (±10%)	<100	1000
HSP1812SC047V2000	1812	30	38	47 (±10%)	<85	2000
HSP1812SC075V2000	1812	48	60	75 (±10%)	<100	2000
HSP2220SC047V5000	2220	30	38	47 (±10%)	<85	5000
HSP2220SC047V8000	2220	30	38	47 (±10%)	<85	8000
HSP2220SC075V3000	2220	48	60	75 (±10%)	<100	3000

[1] The breakdown voltage was measured at 1 mA current
[2] The clamping voltage was measured at standard current 1206 (1A), 1210 (2.5A), 1812 (5A) and 2220 (10A)
[3] The surge current was tested at 8/20 μs waveform

Part Number	Non-linear Coefficient (α)	Leakage Current (μA)		Capacitance [4] @ 1kHz (pF)	Response Time (T_{rise})	Operating Temperature (°C)	Storage Temperature (°C)
		Before Surge Test	After Surge Test				
HSP1206SC012V0500	20	<10	<80	3500	< 1ns	-55 to +125	-55~+150
HSP1206SC024V0500	20	<10	<80	2300			
HSP1206SC047V0500	30	<10	<80	690			
HSP1206SC075V0500	30	<10	<80	300			
HSP1210SC024V1000	20	<15	<80	2300			
HSP1210SC047V1000	30	<10	<80	1550			
HSP1210SC075V1000	30	<10	<80	930			
HSP1812SC047V2000	30	<15	<80	2100			
HSP1812SC075V2000	30	<15	<80	1650			
HSP2220SC047V5000	35	<15	<80	9900			
HSP2220SC047V8000	35	<15	<80	7500			
HSP2220SC075V3000	40	<15	<80	2000			

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

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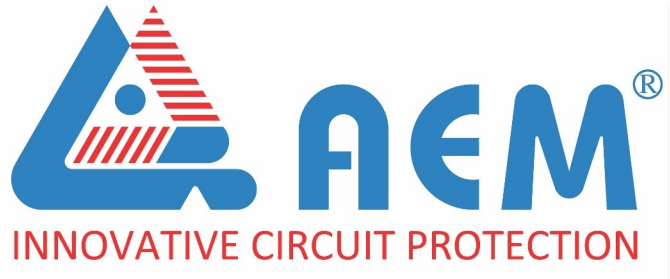

AEM Components (Suzhou) Co., Ltd

461 Zhongnan Street,
China-Singapore Suzhou Industrial Park
Jiangsu, P. R. China, 215026

Tel: 86-512-6258-0028
Fax: 86-512-6258-0018
Email: sales@aemchina.com

AEM Components (USA), Inc.

6670 Cobra Way, San Diego, CA 92121, USA

Tel: 1-858-750-6100
Fax: 1-858-481-1123
Email: sales@aemcomponents.com