WPSPG Spark Gap Protectors – H Series

Part Numbering System

WPSPG	-	20	H	200	TA
(1)		(2)	(3)	(4)	(5)

(1) World Products Spark Gap Protector

(2) DC Spark-over Voltage
Tolerance: (Example: 20=20% tolerance)

(3) Series Type
H= High Current

(4) DC Spark-over Voltage:
(Example: 200 = 200V)

(5) Packaging:
Nil = Bulk
TA = Taped/Ammo Box

FEATURES:

1. RoHS Compliant and Halogen Free
2. UL497B – File #E135015 (see specific voltage values)
3. Fast Responding
4. Low Capacitance
5. Zero leakage current
6. Stable electrical characteristics over time
7. Can withstand repeated surges
8. Symmetrical

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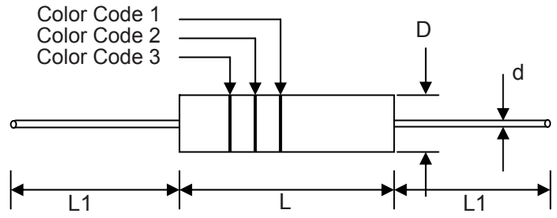
DIMENSIONS (in mm)



Item		DC Spark-Over Voltage
L	4.0±0.5	140V – 700V
	5.3±-0.5	1000V – 5000V
L1	28.0±3.0	
D	3.1±0.5	
d	0.5±0.05	

ELECTRICAL CHARACTERISTICS

Part Number	DC Spark-Over Voltage Vs (V)	Minimum Insulation Resistance		Maximum Capacitance (1KHz-6V$_{MAX}$) C (pf)	Surge current capacity (8/20µs)	Surge Life Test (8/20µs)
		Test Voltage (V)	IR OHM (MΩ)			
*WPSPG-XXH140	140	50	100	0.8		
*WPSPG-XXH200	200	100	100	0.8		
*WPSPG-XXH300	300	100	100	0.8		
*WPSPG-XXH400	400	250	100	0.8	>3000A	
*WPSPG-XXH500	500	250	100	0.8		
WPSPG-XXH700	700	250	100	0.8		
WPSPG-XXH1000	1000	500	100	0.8		
WPSPG-XXH1500	1500	500	100	0.8		
WPSPG-XXH1800	1800	500	100	0.8		
WPSPG-XXH2000	2000	500	100	0.8		
WPSPG-XXH2400	2400	500	100	0.8		
WPSPG-XXH2700	2700	500	100	0.8	**>2000A	
WPSPG-XXH3000	3000	500	100	0.8		
WPSPG-XXH3600	3600	500	100	0.8		
WPSPG-XXH4000	4000	500	100	0.8		
WPSPG-XXH4500	4500	500	100	0.8		
WPSPG-XXH5000	5000	500	100	0.8		

Note: Vs±XX% (DC Spark-over Voltage Tolerance 30% and 20%),140V device is only available in 30% tolerance.
* UL497B Recognized (30% tolerance only).
**Parts rated 1000V – 5000V 1.2/50µs and 8/20µs, with 3000A rating add “X” suffix to part number.

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COLOR CODE

PartNumber	Color Code 1	Color Code 2	Color Code 3
WPSPG-XXH140	Black	Yellow	—
WPSPG-XXH200	Red	—	—
WPSPG-XXH300	Orange	—	—
WPSPG-XXH400	Yellow	—	—
WPSPG-XXH500	Green	—	—
WPSPG-XXH700	Purple	—	—
WPSPG-XXH1000	Brown	Black	Red
WPSPG-XXH1500	Brown	Green	Red
WPSPG-XXH1800	Brown	Gray	Red
WPSPG-XXH2000	Red	Black	Red
WPSPG-XXH2400	Red	Yellow	Red
WPSPG-XXH2700	Red	Purple	Red
WPSPG-XXH3000	Orange	Black	Red
WPSPG-XXH3600	Orange	Blue	Red
WPSPG-XXH4000	Yellow	Black	Red
WPSPG-XXH4500	Yellow	Green	Red
WPSPG-XXH5000	Green	Black	Red

TEST METHODS AND RESULTS

ITEM	TEST METHOD	STANDARD
DC Spark over Voltage(Vs)	Measure starting discharge voltage (Vs) by gradually increasing applied DC voltage. Test current is 0.5mA max. And the DC voltage ascends up within as follow condition. Vs <1000V: 100V/second Vs >1000V: 500V/second	Meet specified value
Insulation Resistance(IR)	Measure the insulation resistance across the terminal at regular voltage. But the test voltage doesn't go beyond the DC spark-over voltage.	
Capacitance	Measure the electrostatic capacitance by applying a voltage of less than 6V (at 1KHZ) between terminals.	
Static Life	10KV with 1500pf condenser is discharged through 0Ω resistor. 200 times at an interval of 10sec.	Rate of change ≤30%. Characteristics of other items must meet the specified value.
Surge Current Capacity	The following impulse current for specified current applied ±5 times at 60 seconds intervals. Thereafter, outer appearance shall be visually examined. Vs <1000V: 1.2/50μs & 8/20μs, 3000A, electrically connected with a resistor (1~2 Ω). Vs >1000V: 1.2/50μs & 8/20μs, 3000A, electrically connected with a resistor (4~6 Ω).	No crack and no failures
Cold Resistance	Measurement after -40ºC/1000 HRS & normal temperature/2 HRS.	Features are conformed to rated spec.
Heat Resistance	Measurement after 125ºC/1000 HRS & normal temperature/2 HRS.	
Humidity Resistance	Measurement after humidity 90~95%(45ºC) /1000 HRS & normal temperature/2 HRS.	
Temperature Cycle	10 times repetition of cycle -40ºC/30min normal, temp/2 min 125ºC/30min, measurement after normal temp/2 HRS.	
Solder Ability	Apply flux and immerse in molten solder 230±5ºC for 3sec up to the point of 1.5mm from body. Check for solder adhesion.	Lead wire is evenly covered by solder.
Solder Heat	Measurement after lead wire is dipped up to the point of 1.5mm from body into 260±5ºC solder for 10sec.	Conformed to rated spec.
Pull Strength	Apply 0.5kg load for 10sec.	Lead shall not pull out or snap.
Flexural Strength	Bend lead wire at the point of 2mm from body under 0.25 load and back to its original point. Repeat 1 time.	

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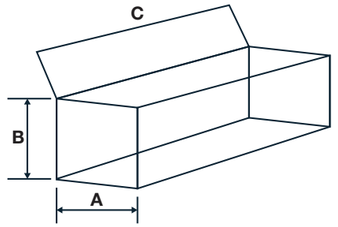
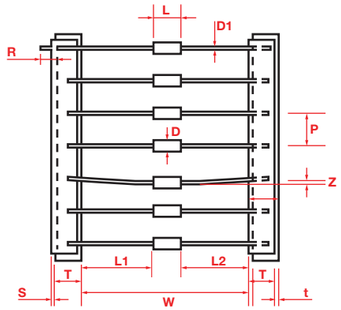


unit: mm

Item	Dimensions
A	78
B	78
C	255

SERIES	Minimum Package Quantity
L	5000 pcs
M	2500 pcs
H	1500 pcs

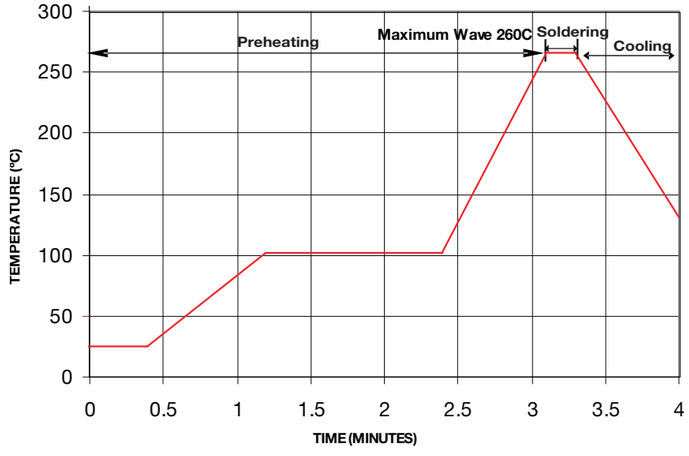
INNER BOX DIMENSIONS



Lead Taping

ITEM	Dimensions (mm)
W	52 ± 1.5
P	5.0 ± 0.5
T	6.0 ± 1.0
Z	1.2 max.
R	Leads cannot extend beyond tape.
t	3.2 max.
S	0.8 max.
D	1.5 ~ 4.5m
D1	0.5 ± .05
L	3.0 - 7.5
L1 & L2	1 max

Flow/wave Soldering Recommendation Parameters



Item	Conditions
Peak Temperature	260 ºC
Dipping Time	10 seconds
Soldering	1 time