WPSPG Spark Gap Protectors – LS Series

Part Numbering System

WPSPG	-	20	LS	200	M
(1)		(2)	(3)	(4)	(5)

(1) World Products Spark Gap Protector

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

(3) Series Type
LS= Low Current Surface Mount Series

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

(5) Nil = Standard Package
M = Mini Melf Package

FEATURES:

1. RoHS Compliant and Halogen Free
2. UL497B – PENDING
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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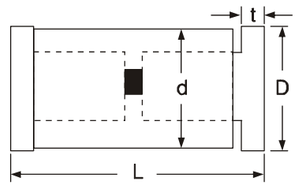
DIMENSION in mm.



Item	Standard	Mini Melf
L	4.0 ± 0.5	3.4 ± 0.5
D	2.1 ± 0.5	1.4 ± 0.5
d	2.0 ± 0.5	1.3 ± 0.5
t	0.4 ± 0.1	0.4 ± 0.1

ELECTRICAL CHARACTERISTICS

STANDARD Series

Part Number	DC Spark-Over Voltage	Minimum Insulation Resistance		Maximum Capacitance (1KHz-6V$_{MAX}$)	Surge current capacity (8/20μs)
	Vs(V)	Test Voltage(V)	IR$_{OHM}$(MΩ)	C(pf)	(A)
WPSPG-XXLS140	140	50	100	0.8	500
WPSPG-XXLS200	200	100	100	0.8	500
WPSPG-XXLS220	220	100	100	0.8	500
WPSPG-XXLS300	300	100	100	0.8	500
WPSPG-XXLS400	400	250	100	0.8	500
WPSPG-XXLS500	500	250	100	0.8	500
WPSPG-XXLS600	600	250	100	0.8	500
WPSPG-XXLS700	700	250	100	0.8	500
WPSPG-XXLS1000	1000	500	100	0.8	500

Note: Vs±XX% (DC Spark-over Voltage Tolerance 30% and 20%),140V device is only available in 30% tolerance.

MINI MELF Series

Part Number	DC Spark-Over Voltage	Minimum Insulation Resistance		Maximum Capacitance (1KHz-6V$_{MAX}$)	Surge current capacity (8/20μs)
	Vs(V)	Test Voltage(V)	IR$_{OHM}$(MΩ)	C(pf)	(A)
WPSPG-XXLS140M	140	50	100	0.8	300
WPSPG-XXLS200M	200	100	100	0.8	300
WPSPG-XXLS300M	300	100	100	0.8	300

Note: Vs±XX% (DC Spark-over Voltage Tolerance 30% and 20%),140V device is only available in 30% tolerance.

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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. Mini Melf: 1.2/50μs & 8/20μs, 300A Standard: 1.2/50μs & 8/20μs, 500A	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 end surface of the electrodes. Check for solder adhesion.	The end surface is evenly covered by solder.
Solder Heat	Measurement after the end surface of the electrodes is dipped up to into 260±5ºC solder for 10sec.	Conformed to rated spec.

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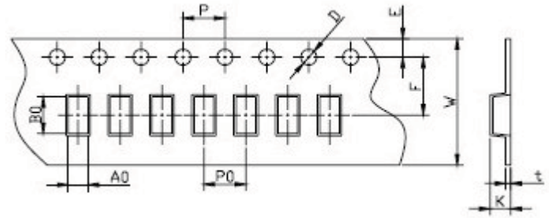
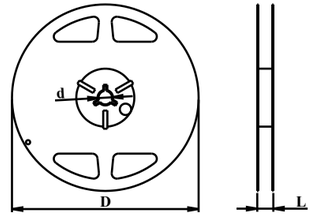
Taping Specifications

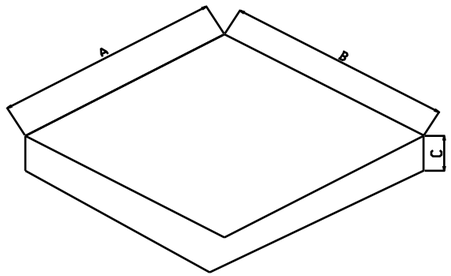


Item	Standard Series	Mini Melf Series
P	4.0 ± 0.1	4.0 ± 0.1
P0	8.0 ± 0.1	4.0 ± 0.1
W	12.0 ± 0.3	8.0 ± 0.3
F	5.5 ± 0.1	3.4 ± 0.1
E	1.75 ± 0.1	1.5 ± 0.1
D	Φ 1.5 ± 0.1	Φ 1.5 ± 0.1
K	2.3 ± 0.2	1.6 ± 0.1
t	0.5 max.	0.2 ± 0.1
A0	2.2 ± 0.1	1.6 ± 0.1
B0	4.3 ± 0.1	4.0 ± 0.1



Item	Standard Size	Mini Melf Series
D	178mm	178mm
d	13mm	13mm
L	15mm	11mm

NOTE: 3000 pcs per reel.



Item	Size (mm)
A	185
B	179
C	67

Note: All dimensions (mm)