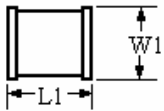


Gas Discharge Tube

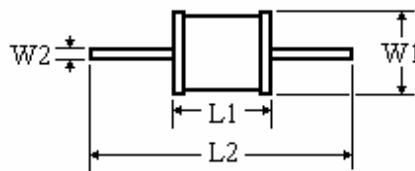
A Series(55)

Part No.	Nominal dc spark-over voltage	Gas Discharge Tube dc spark-over voltage	Impulse spark-over voltage		DC Holdover voltage	Nominal impulse discharge current 8/20 μ s	Nominal impulse discharge current 10/1000 μ s	Nominal Alternating discharge current at 50Hz, 1s	Insulation resistance		Capacitance at 1kHz
	V_{sdc} (V)	V_{sdc} (V)	V_{si} (V)		V_h (V)	i_{di} (KA)	i_{di} (A)	i_{da} (A)	V (V)	R_{is} ()	C (pF)
			100V/ μ s	1kV/ μ s							
55A75	75	60~90	700	800	52	5	50	5	50	10^9	2
55A90	90	72~108	600	700	52						
55A150	150	120~180	600	700	52						
55A230	230	184~276	700	800	80						
55A250	250	200~300	700	800	80						
55A300	300	240~360	800	900	135						
55A350	350	280~420	800	900	135						
55A400	400	320~480	900	1000	135						
55A420	420	336~504	1000	1100	135						
55A470	470	376~564	1100	1200	135						
55A600	600	480~720	1300	1500	150						

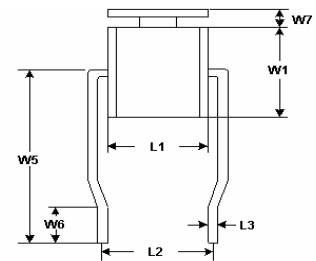
A Type



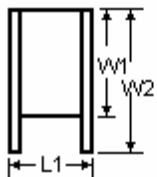
AL Type



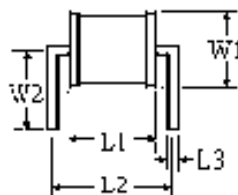
ALNF Type



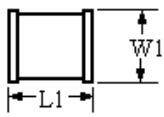
AT Type



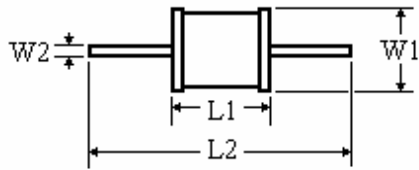
ALN Type



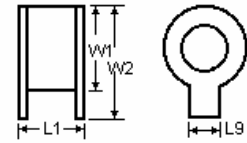
Dimension A SERIES



55A, 80A, 80ASW, V80A, C80A Type

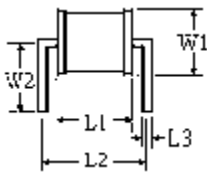


55AL, 80AL, 80ALSW, V80AV, C80AL Type

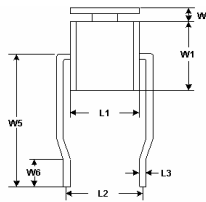


55AT Type

Type	W1	W2	L1	L2	L9
55A	5.5 +0.8/-0.6	----	6.0±0.4	----	----
55AT	5.5 +0.8/-0.6	7.3±0.1	4.0±0.4	----	1.2±0.1
80A, 80ASW, V80A	8.0±0.4	----	6.0±0.4	----	----
C80A	8.0±0.4	----	8.2±0.4	----	----
55AL	5.5 +0.8/-0.6	0.8±0.1	6.0±0.4	60±5	----
80AL, 80ALSW, V80AL	8.0±0.4	0.8±0.1	6.0±0.4	60±5	----
C80AL	8.0±0.4	0.8±0.1	8.2±0.4	64±5	----



55ALN, 80ALN, 80ALNSW, V80ALN, C80ALN Type



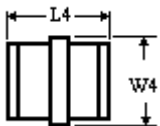
55ALNF Type

Type	L1	L2	L3	W1	W2	W5	W6	W7
55ALN	6.0 ±0.4	8.5 ±1.0	φ0.8 ±0.1	φ5.5 ±0.5	25.0 ±4.0	----	----	----
55ALNF	5.0±0.4	5.0±1.0	0.8±0.1	5.0±0.5	----	11.8±2.0	3.0±0.8	1.0±0.8
80ALN, V80ALN, 80ALNSW	6.0 ±0.4	10.0±1.0	φ0.8±0.1	φ8.0 ±0.5	25.0 ±4.0	----	----	----
C80ALN	8.2±0.4	12.2±1.0	φ0.8±0.1	8.0±0.5	25.0 ±4.0	----	----	----

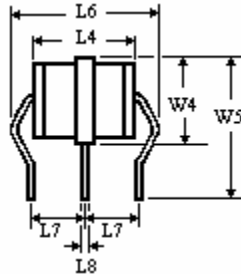
B Sries

Part No.	Nominal dc spark-over voltage	Gas Discharge Tube dc spark-over voltage	Impulse spark-over voltage at 1kV/ μ s		DC Holdover voltage	Nominal impulse discharge current 8/20 μ s	Nominal impulse discharge current 10/1000 μ s	Nominal Alternating discharge current at 50Hz, 1s	Insulation resistance		Capacitance at 1kHz
	V_{sdc} (V)	V_{sdc} (V)	V_{si} (V)		V_h (V)	i_{di} (KA)	i_{di} (A)	i_{da} (A)	V	R_{is} ()	C
			100V/ μ s	1kV/ μ s					(V)	()	(pF)
B75	75	60~90	700	800	52	10	100	10	50	10^9	3
B90	90	72~108	600	700	52						
B150	150	120~180	600	700	52						
B230	230	184~276	700	800	80						
B250	250	200~300	700	800	80						
B300	300	240~360	800	900	135						
B350	350	280~420	800	900	135						
B400	400	320~480	900	1000	135						
B420	420	336~504	1000	1100	135						
B470	470	376~564	1100	1200	135						
B600	600	480~720	1300	1500	150						

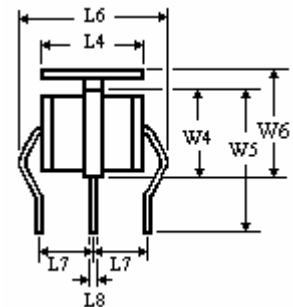
72B Type



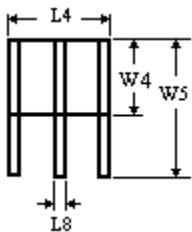
72BL Type



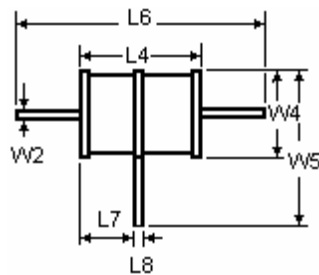
72BLSF Type



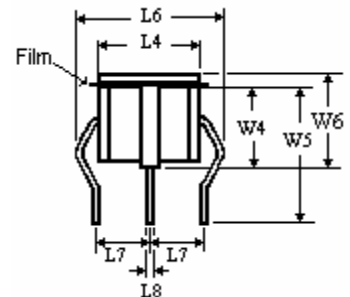
80BL Type



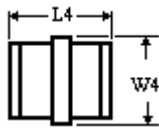
72BT Type



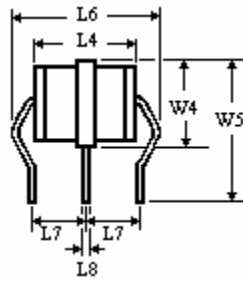
72BLPF Type



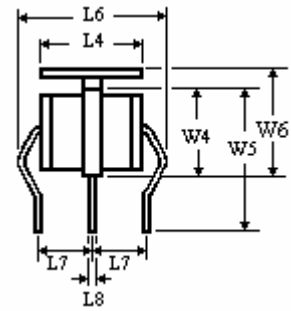
B SERIES



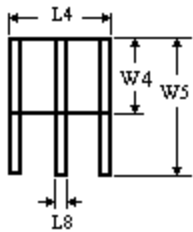
72B Type



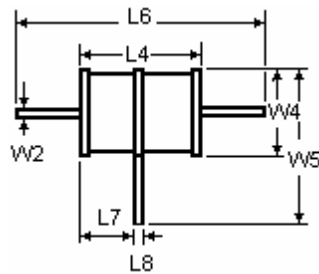
72BL Type



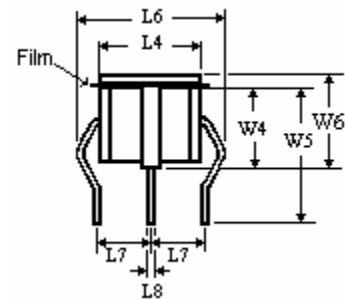
72BLSF Type



80BL Type



72BT Type



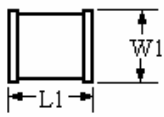
72BLPF Type

Type	W4	W5	W6	L4	L6	L7	L8
72B	8.0±0.5	----	----	10.0±0.5	----	----	----
72BL	8.0±0.5	15.0±0.5	----	10.0±0.5	13.4 ₋₂	4.4±0.5	1.0±0.1
72BLSF	7.0±0.5	15.0±0.5	9.8±0.5	10.0±0.5	13.4 ₋₂	4.4±0.5	1.0±0.1
72BLPF	7.0±0.5	15.0±0.5	9.8±0.5	10.0±0.5	13.4 ₋₂	4.4±0.5	1.0±0.1
72BT	8.0±0.5	17.4±1.0	----	10.0±0.5	41.6±2.0	4.4±0.5	1.0±0.1
80BL	8.0±0.5	14.6±0.5	----	10.0±0.5	----	----	1.0±0.1

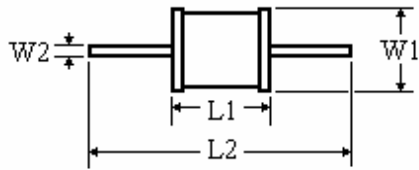
A Series(80)

Part No.	Nominal dc spark-over voltage	Gas Discharge Tube dc spark-over voltage	Impulse spark-over voltage		DC Holdover voltage	Nominal impulse discharge current 8/20 μ s	Nominal impulse discharge current 10/1000 μ s	Nominal Alternating discharge current at 50Hz, 1s	Insulation resistance		Capacitance at 1kHz
			V_{si} (V)	V_h (V)					V (V)	R_{is} ()	
80A75	75	60~90	700	800	52	10	100	10	25	10 ⁹	2
80A90	90	72~108	600	700	52				50		
80A150	150	120~180	600	700	52				50		
80A230	230	184~276	700	800	80				100		
80A250	250	200~300	700	800	80				100		
80A300	300	240~360	800	900	135				100		
80A350	350	280~420	800	900	135				100		
80A400	400	320~480	900	1000	135				100		
80A420	420	336~504	1000	1100	135				100		
80A470	470	376~564	1100	1200	135				100		
80A600	600	480~720	1300	1500	150				100		
80A700	700	560~840	1300	1500	150				250		
80A800	800	640~960	1500	1700	150				250		
80A900	900	720~1080	1500	1700	150				250		
C80A1000	1000	800~1200	1300	1400	150	3	100	3	1000	10 ⁸	1
C80A2000	2000	1600~2400	2700	2800	150				1000		
C80A2400	2400	1920~2880	3500	3600	150				1000		
C80A2500	2500	2000~3000	3500	3600	150				1000		
C80A2700	2700	2160~3240	3700	3800	150				1000		
C80A3000	3000	2400~3600	4100	4200	150				1000		
C80A3600	3600	2880~4320	5200	5400	150				1000		

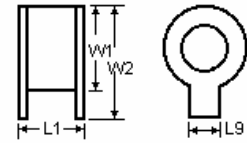
Dimension A SERIES



55A, 80A, 80ASW, V80A, C80A Type

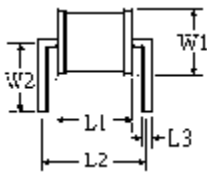


55AL, 80AL, 80ALSW, V80AV, C80AL Type

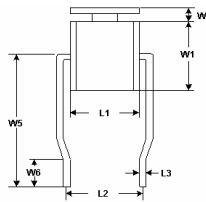


55AT Type

Type	W1	W2	L1	L2	L9
55A	5.5 +0.8/-0.6	----	6.0±0.4	----	----
55AT	5.5 +0.8/-0.6	7.3±0.1	4.0±0.4	----	1.2±0.1
80A, 80ASW, V80A	8.0±0.4	----	6.0±0.4	----	----
C80A	8.0±0.4	----	8.2±0.4	----	----
55AL	5.5 +0.8/-0.6	0.8±0.1	6.0±0.4	60±5	----
80AL, 80ALSW, V80AL	8.0±0.4	0.8±0.1	6.0±0.4	60±5	----
C80AL	8.0±0.4	0.8±0.1	8.2±0.4	64±5	----



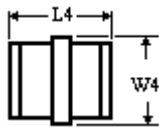
55ALN, 80ALN, 80ALNSW, V80ALN, C80ALN Type



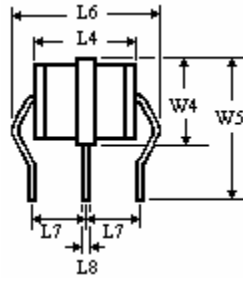
55ALNF Type

Type	L1	L2	L3	W1	W2	W5	W6	W7
55ALN	6.0 ±0.4	8.5 ±1.0	φ0.8 ±0.1	φ5.5 ±0.5	25.0 ±4.0	----	----	----
55ALNF	5.0±0.4	5.0±1.0	0.8±0.1	5.0±0.5	----	11.8±2.0	3.0±0.8	1.0±0.8
80ALN, V80ALN, 80ALNSW	6.0 ±0.4	10.0±1.0	φ0.8±0.1	φ8.0 ±0.5	25.0 ±4.0	----	----	----
C80ALN	8.2±0.4	12.2±1.0	φ0.8±0.1	8.0±0.5	25.0 ±4.0	----	----	----

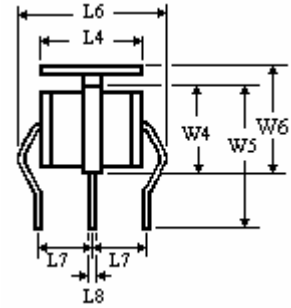
B SERIES



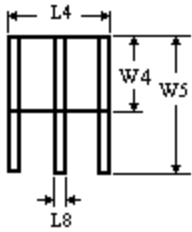
72B Type



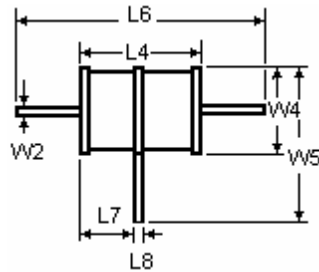
72BL Type



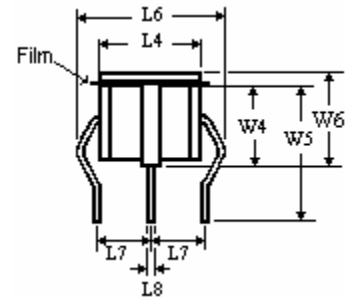
72BLSF Type



80BL Type



72BT Type



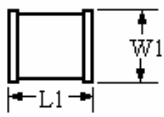
72BLPF Type

Type	W4	W5	W6	L4	L6	L7	L8
72B	8.0±0.5	----	----	10.0±0.5	----	----	----
72BL	8.0±0.5	15.0±0.5	----	10.0±0.5	13.4 ₋₂	4.4±0.5	1.0±0.1
72BLSF	7.0±0.5	15.0±0.5	9.8±0.5	10.0±0.5	13.4 ₋₂	4.4±0.5	1.0±0.1
72BLPF	7.0±0.5	15.0±0.5	9.8±0.5	10.0±0.5	13.4 ₋₂	4.4±0.5	1.0±0.1
72BT	8.0±0.5	17.4±1.0	----	10.0±0.5	41.6±2.0	4.4±0.5	1.0±0.1
80BL	8.0±0.5	14.6±0.5	----	10.0±0.5	----	----	1.0±0.1

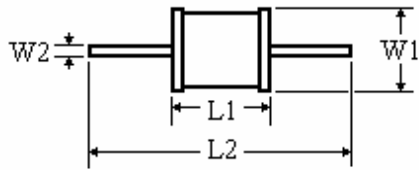
A Series(80)

Part No.	Nominal dc spark-over voltage	Gas Discharge Tube dc spark-over voltage	Impulse spark-over voltage		DC Holdover voltage	Nominal impulse discharge current 8/20 μ s	Nominal impulse discharge current 10/1000 μ s	Nominal Alternating discharge current at 50Hz, 1s	Insulation resistance		Capacitance at 1kHz
			V_{si} (V)	V_h (V)					V (V)	R_{is} ()	
80A75	75	60~90	700	800	52	10	100	10	25	2	
80A90	90	72~108	600	700	52				50		
80A150	150	120~180	600	700	52				50		
80A230	230	184~276	700	800	80				100		
80A250	250	200~300	700	800	80				100		
80A300	300	240~360	800	900	135				100		
80A350	350	280~420	800	900	135				100		
80A400	400	320~480	900	1000	135				100		
80A420	420	336~504	1000	1100	135				100		
80A470	470	376~564	1100	1200	135				100		
80A600	600	480~720	1300	1500	150				100		
80A700	700	560~840	1300	1500	150				250		
80A800	800	640~960	1500	1700	150				250		
80A900	900	720~1080	1500	1700	150				250		
C80A1000	1000	800~1200	1300	1400	150	3	100	3	1000	1	
C80A2000	2000	1600~2400	2700	2800	150				1000		
C80A2400	2400	1920~2880	3500	3600	150				1000		
C80A2500	2500	2000~3000	3500	3600	150				1000		
C80A2700	2700	2160~3240	3700	3800	150				1000		
C80A3000	3000	2400~3600	4100	4200	150				1000		
C80A3600	3600	2880~4320	5200	5400	150				1000		

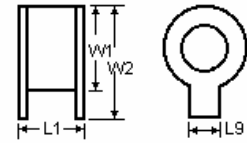
Dimension A SERIES



55A, 80A, 80ASW, V80A, C80A Type

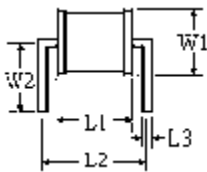


55AL, 80AL, 80ALSW, V80AV, C80AL Type

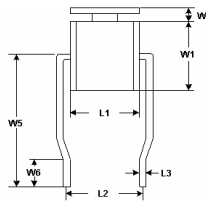


55AT Type

Type	W1	W2	L1	L2	L9
55A	5.5 +0.8/-0.6	----	6.0±0.4	----	----
55AT	5.5 +0.8/-0.6	7.3±0.1	4.0±0.4	----	1.2±0.1
80A, 80ASW, V80A	8.0±0.4	----	6.0±0.4	----	----
C80A	8.0±0.4	----	8.2±0.4	----	----
55AL	5.5 +0.8/-0.6	0.8±0.1	6.0±0.4	60±5	----
80AL, 80ALSW, V80AL	8.0±0.4	0.8±0.1	6.0±0.4	60±5	----
C80AL	8.0±0.4	0.8±0.1	8.2±0.4	64±5	----



55ALN, 80ALN, 80ALNSW, V80ALN, C80ALN Type



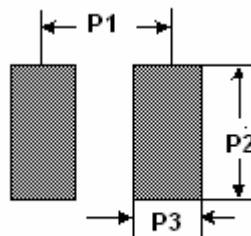
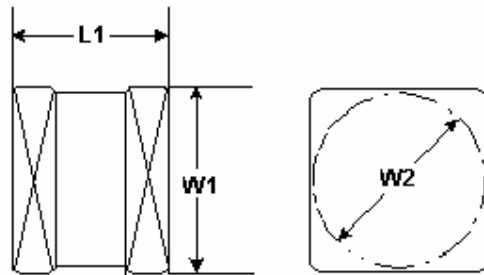
55ALNF Type

Type	L1	L2	L3	W1	W2	W5	W6	W7
55ALN	6.0 ±0.4	8.5 ±1.0	φ0.8 ±0.1	φ5.5 ±0.5	25.0 ±4.0	----	----	----
55ALNF	5.0±0.4	5.0±1.0	0.8±0.1	5.0±0.5	----	11.8±2.0	3.0±0.8	1.0±0.8
80ALN, V80ALN, 80ALNSW	6.0 ±0.4	10.0±1.0	φ0.8±0.1	φ8.0 ±0.5	25.0 ±4.0	----	----	----
C80ALN	8.2±0.4	12.2±1.0	φ0.8±0.1	8.0±0.5	25.0 ±4.0	----	----	----

S Series(60)

Part No.	Nominal dc spark-over voltage	Gas Discharge Tube dc spark-over voltage	Impulse spark-over voltage at 1kV/ μ s		Nominal impulse discharge current 8/20 μ s		Nominal Alternating discharge current at 50Hz, 1s	DC Holdover Voltage	Insulation resistance		Capacitance at 1kHz
	V_{sdC} (V)	V_{sdC} (V)	V_{si} (V)		i_{di} (KA)		i_{da} (A)	V_H (V)	V (V)	R_{is} ()	C (pF)
	(100V/s)	(100V/s)	100V/ μ s	(1kV/ μ s)	1 Time	10 Times	50Hz, 1s	<150ms			1kHz
60S75	75	60~90	≤ 600	≤ 700	8	5	5	52	50	$\geq 10^{10}$	≤ 1
60S90	90	72~108	≤ 600	≤ 700				52	50		
60S145	145	116~174	≤ 600	≤ 700				52	50		
60S230	230	184~276	≤ 700	≤ 800				135	100		
60S250	250	200~300	≤ 700	≤ 800				135	100		
60S300	300	240~360	≤ 800	≤ 900	5	3	135	100			
60S350	350	290~420	≤ 800	≤ 900			135	100			
60S400	400	320~480	≤ 900	≤ 1000			135	100			
60S470	470	376~564	≤ 1000	≤ 1100			135	100			
60S600	600	480~720	1300	1500			150	100			

S Type

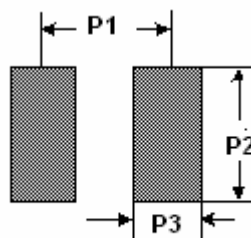
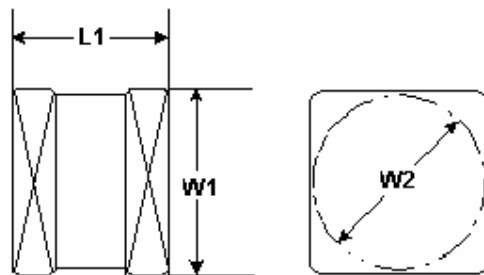


Recommended Pad Size

S Series(40)

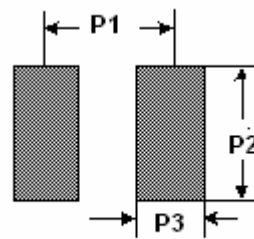
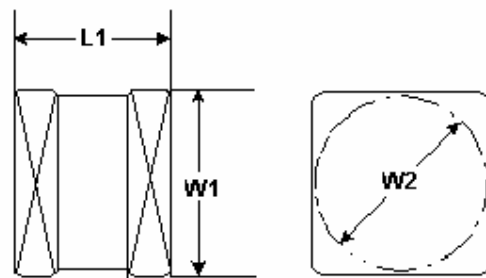
Part No.	Nominal dc spark-over voltage	Gas Discharge Tube dc spark-over voltage	Impulse spark-over voltage at 1kV/μs		Nominal impulse discharge current 8/20μs		Nominal Alternating discharge current at 50Hz, 1s		DC Holdover Voltage	Insulation resistance		Capacitance at 1kHz
	V_{sdc} (V)	V_{sdc} (V)	V_{si} (V)		i_{di} (KA)		i_{da} (A)		V_H (V)	V (V)	R_{is} ()	C (pF)
	(100V/s)	(100V/s)	100V/μs	(1kV/μs)	1 Time	10 Times	50Hz, 1s	Single 9 cycles	<150ms			
40S75	75	60~90	≤700	≤800	5	3	3	6	52	50	≥10 ¹⁰	≤1
40S90	90	72~108	≤600	≤700					52	50		
40S145	145	116~174	≤600	≤700					52	50		
40S230	230	184~276	≤700	≤800					135	100		
40S250	250	200~300	≤700	≤800					135	100		
40S300	300	240~360	≤800	≤900	5	3	3	6	135	100		
40S350	350	290~420	≤800	≤900					135	100		
40S400	400	320~480	≤900	≤1000					135	100		
40S470	470	376~564	≤1000	≤1100					135	100		
40S600	600	480~720	≤1300	≤1500					150	100		

S Type



Recommended Pad Size

S SERIES



Recommended Pad Size

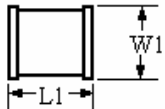
SType

Type	W1	W2	L1	P1	P2	P3
40S	4.2±0.2	6.0±0.4	4.2±0.4	3.0	5.0	0.65
60S	6.2±0.4	6.0±0.4	4.2±0.4	3.5	5.0	1.3

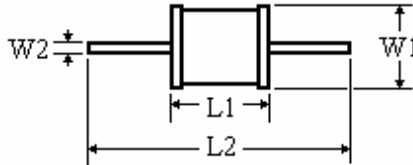
A Series(80) SW type

Part No.	Nominal dc spark-over voltage	Gas Discharge Tube dc spark-over voltage	Maximum Ignition Frequency	Switching Operations	Insulation resistance		Capacitance at 0.1Vrms, 1MHz
	V_{sdc} (V)	V_{sdc} (V)	Hz	Times	V (V)	R_{is} ()	C (pF)
80A230	230	184~276	400	1×10^5	100	10^9	1
80A250	250	200~300					
80A300	300	240~360					
80A350	350	280~420					
80A400	400	320~480					
80A420	420	336~504					
80A470	470	376~564					
80A600	600	480~720					
80A700	700	560~840					
80A800	800	640~960					
80A900	900	720~1080					
80A1000	1000	800~1200					

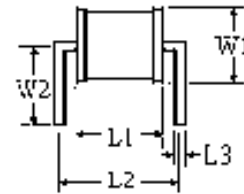
A ,ASW
CA Type(1000~3600)



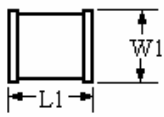
AL ,ALSW
CAL Type(1000~3600)



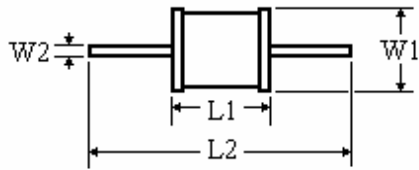
ALN ,ALNSW
CALN Type(1000~3600)



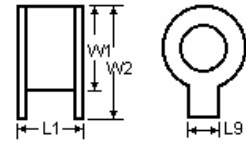
Dimension A SERIES



55A, 80A, 80ASW, V80A, C80A Type

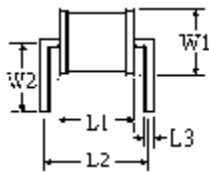


55AL, 80AL, 80ALSW, V80AV, C80AL Type

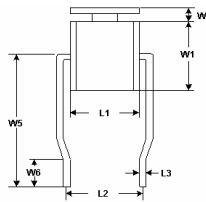


55AT Type

Type	W1	W2	L1	L2	L9
55A	5.5 +0.8/-0.6	----	6.0±0.4	----	----
55AT	5.5 +0.8/-0.6	7.3±0.1	4.0±0.4	----	1.2±0.1
80A, 80ASW, V80A	8.0±0.4	----	6.0±0.4	----	----
C80A	8.0±0.4	----	8.2±0.4	----	----
55AL	5.5 +0.8/-0.6	0.8±0.1	6.0±0.4	60±5	----
80AL, 80ALSW, V80AL	8.0±0.4	0.8±0.1	6.0±0.4	60±5	----
C80AL	8.0±0.4	0.8±0.1	8.2±0.4	64±5	----



55ALN, 80ALN, 80ALNSW, V80ALN, C80ALN Type



55ALNF Type

Type	L1	L2	L3	W1	W2	W5	W6	W7
55ALN	6.0 ±0.4	8.5 ±1.0	φ0.8 ±0.1	φ5.5 ±0.5	25.0 ±4.0	----	----	----
55ALNF	5.0±0.4	5.0±1.0	0.8±0.1	5.0±0.5	----	11.8±2.0	3.0±0.8	1.0±0.8
80ALN, V80ALN, 80ALNSW	6.0 ±0.4	10.0±1.0	φ0.8±0.1	φ8.0 ±0.5	25.0 ±4.0	----	----	----
C80ALN	8.2±0.4	12.2±1.0	φ0.8±0.1	8.0±0.5	25.0 ±4.0	----	----	----