



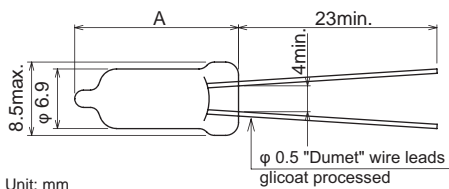
## Features

- Fast response time.
- Bi-polar surge absorber, it will fail open if the surge withstand capacity is exceeded.
- Small inter-terminal capacitance.
- High insulation resistance ( $10^9\Omega$ . min).
- Excellent surge withstand capability (300 times at 100A, 8/20 $\mu$ s).
- Small size for compact circuit design.

## Applications

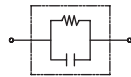
- Switching supply, Inverter power supplies, Refrigerator, Laundry machine, Air conditioner, DVD players, DVD recorders, Copiers, xDSL modems, Splitters, BS tuner, CRT, VCR, Telephone, Modems, Car audio and GPS.

### Dimensions



Unit: mm

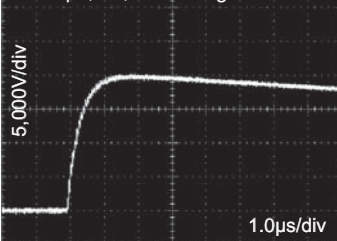
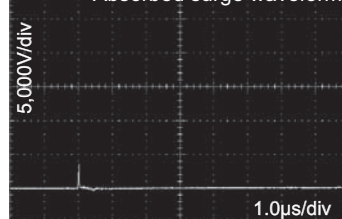
### Circuit



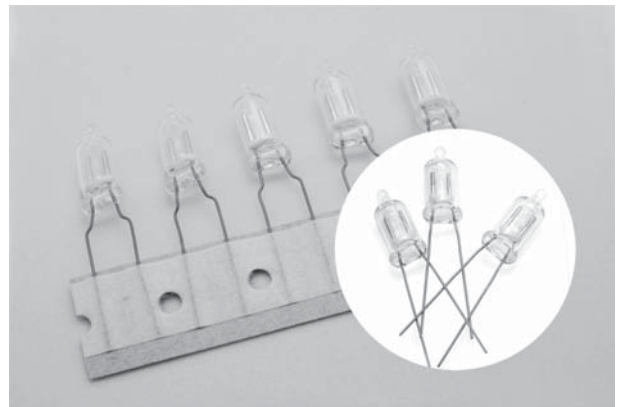
Dimensions max.(mm)

	A
RA-M-V7	19
RA-MS-V7	16

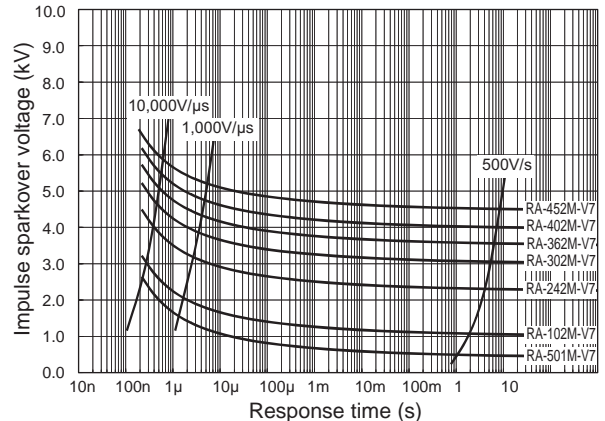
### Impulse Absorption Characteristics

1.2/50 $\mu$ s, 20,000V Surge waveformRA-242M-V7  
Absorbed surge waveform

Safety Standard		File No.
UL	:UL1449 3rd.	E332107
CSA	:C22.2 No.1	LR105073
TÜV	:EN60065 :EN60950-1	J50114145
SEMKO	:IEC-61643-1 :EN61643-11	SE-66249A1 No.1312809



### V-t Characteristics



## Electrical Specifications

Safety Standard				Model Number	DC Breakdown Voltage (V)	Insulation Resistance (M $\Omega$ ) min.	Capacitance 1MHz (pF) max.	Impulse Life test 8/20 $\mu$ s 100A	Impulse Current Capacity 8/20 $\mu$ s (A)	Withstanding Voltage
UL 1449	CSA	TÜV	SEMKO							
○ <sup>*1</sup>	-	-	○	RA-501M/MS-V7	500(400~600)	1,000(DC100V)	2.0	300 times	3,500	—
○ <sup>*1</sup>	-	-	○	RA-601M/MS-V7	600(480~720)	1,000(DC250V)				—
○ <sup>*1</sup>	-	-	○	RA-102M/MS-V7	1,000(800~1,200)	1,000(DC500V)				—
○ <sup>*1</sup>	○	-	○	RA-152M/MS-V7	1,500(1,200~1,800)					—
○ <sup>*1</sup>	○ <sup>*1</sup>	-	○	RA-242M-V7	2,400(1,920~2,880) <sup>*5</sup>					AC1,250V 3s
○ <sup>*1</sup>	○ <sup>*3</sup>	○ <sup>*4</sup>	○	RA-302M-V7	3,000(2,400~3,600) <sup>*5</sup>					AC1,500V 60s
○ <sup>*1</sup>	○ <sup>*3</sup>	○ <sup>*4</sup>	○	RA-362M-V7	3,600(2,880~4,320) <sup>*5</sup>					AC1,800V 3s
○ <sup>*2</sup>	○ <sup>*3</sup>	○ <sup>*4</sup>	○	RA-402M-V7	4,000(3,200~4,800) <sup>*5</sup>					AC2,000V 60s
○ <sup>*2</sup>	○ <sup>*3</sup>	○ <sup>*4</sup>	○	RA-452M-V7	4,500(3,600~5,400) <sup>*5</sup>					AC2,000V 60s
○ <sup>*1</sup>	○ <sup>*1</sup>	-	○	RA-242MS-V7	2,400(1,920~2,880) <sup>*5</sup>					AC1,250V 3s
○ <sup>*1</sup>	○ <sup>*3</sup>	○ <sup>*4</sup>	○	RA-302MS-V7	3,000(2,400~3,600) <sup>*5</sup>					AC1,500V 60s
○ <sup>*1</sup>	○ <sup>*3</sup>	○ <sup>*4</sup>	○	RA-362MS-V7	3,600(2,880~4,320) <sup>*5</sup>					AC1,800V 3s
○ <sup>*2</sup>	○ <sup>*3</sup>	○ <sup>*4</sup>	○	RA-402MS-V7	4,000(3,200~4,800) <sup>*5</sup>	AC2,000V 60s				
○ <sup>*2</sup>	○ <sup>*3</sup>	○ <sup>*4</sup>	○	RA-452MS-V7	4,500(3,600~5,400) <sup>*5</sup>	AC2,000V 60s				

\*1 Rated voltage AC125V: Approved if it is connected to UL approved varistor (V1.0mA $\geq$ 270V, D $\geq$ 5mm).

\*2 Rated voltage AC250V: Approved if it is connected to UL approved varistor (V1.0mA $\geq$ 390V, D $\geq$ 7mm).

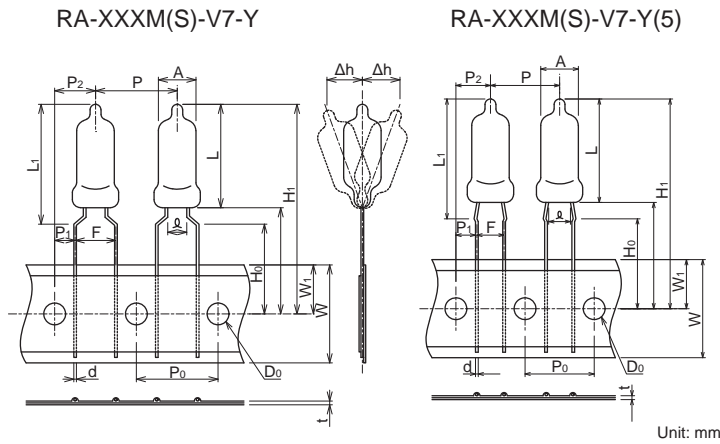
\*3 Rated voltage AC250V: Approved if it is connected to UL approved varistor (V1.0mA $\geq$ 270V, D $\geq$ 5mm).

\*4 Rated voltage AC125V / AC250V: Approved if it is connected to UL approved varistor (V1.0mA $\geq$ 470V, D $\geq$ 5mm).

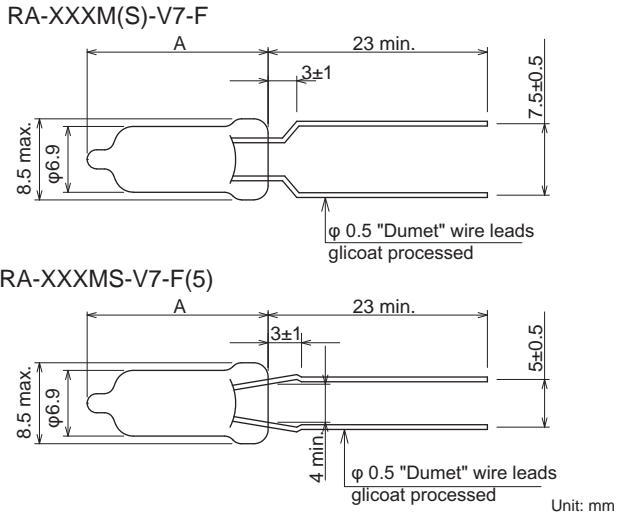
\*5 Reference Value



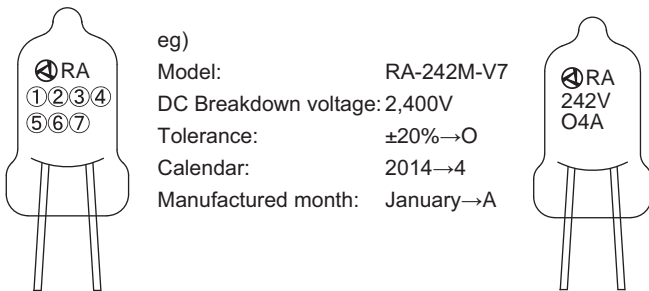
● Taping Dimensions



● Forming Dimensions



● Description of marking



- ①②③..... DC Breakdown Voltage ①②×10<sup>③</sup>
- ④..... V (Radial)
- ⑤..... Tolerance

Tolerance	±20%	+30% -10%	Other
Symbol	O	R	-

⑥..... Identification of manufacture year eg.) 2013→3

⑦..... Manufacture month (see below)

Month	1	2	3	4	5	6	7	8	9	10	11	12
Symbol	A	B	D	E	F	G	H	J	K	L	M	N

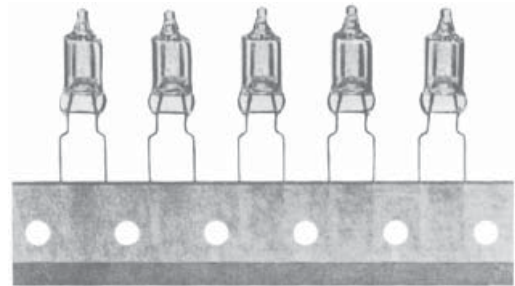
Description	Symbol	Dimension (mm)	
		RA-M(S)-V7-Y	RA-M(S)-V7-Y(5)
High	L	19.0 max. (16.0 max.)	
Lamp Diameter	A	φ 6.9±0.65	
Lead Diameter	d	φ 0.5±0.05	
Lead clearance	∅	4.0 min.	
Height from PCB top	L <sub>1</sub>	22.0 max. (19.0 max.)	
Lamp pitch	P	15.0±1.0	12.7±1.0
Hole pitch	P <sub>0</sub>	15.3±0.3 *1	12.7±0.3 *1
Hole position	P <sub>1</sub>	3.75±0.7	3.85±0.7
	P <sub>2</sub>	7.5±1.3	6.35±1.3
Lead pitch	F	7.5±0.5	5.0± <sup>0.6</sup> <sub>0.2</sub>
Declining	Δh	±2.0	
Paper width	W	18.0±0.5	
Hole position	W <sub>1</sub>	9.0±0.5	
Lead clinch height	H <sub>0</sub>	16.0±0.5	
Product height *2	H <sub>1</sub>	38.5 (35.5)	
Hole diameter	D <sub>0</sub>	φ 4.0±0.2	
Paper thickness	t	0.7±0.2	

\*2 Nominal value

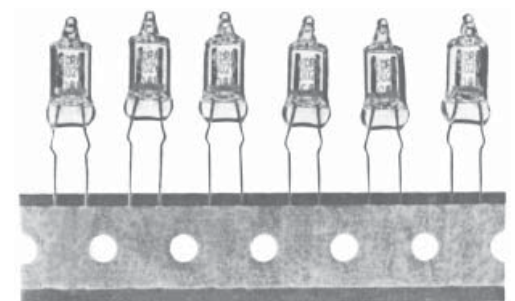
\*1 Accumulative pitch error:

	4 pitch	20 pitch
RA-M(S)-V7-Y	60.0±0.6	300±1.5
RA-M(S)-V7-Y(5)	50.8±0.6	254±1.5

RA-XXXM(S)-V7-Y



RA-XXXM(S)-V7-Y(5)



● Packing Quantity per Carton

RA-XXXM(S)-V7-Y Series: 1,500 pcs

RA-XXXM(S)-V7-Y(5) Series: 1,800 pcs