RoHS

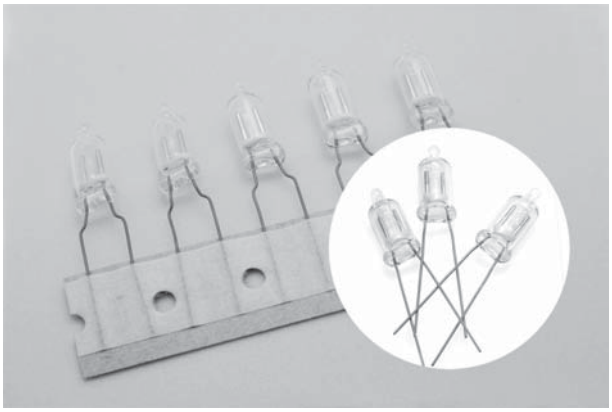
RA-V7 SERIES SURGE PROTECTIVE DEVICES

OKAYA

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, 8/20μs).
- Small size for compact circuit design.

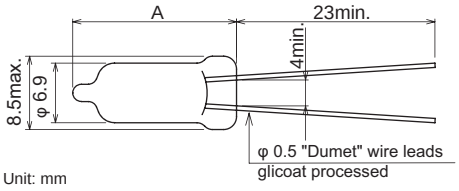
Safety Standard		File No.
UL	:UL1449 4th.	E332107
CSA	:C22.2 No.1	LR105073
TÜV	:EN60065 :EN60950-1	J50114145



Applications

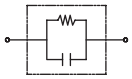
- Switching supply, Inverter power supplies, Refrigerator, Laundry machine, Air conditioner, DVD players, DVD recorders, Copiers, xDSL modems, Splitters, BS tuner, CRT, VCR, Telephone, Modems, Car audio and GPS.

● *Dimensions*



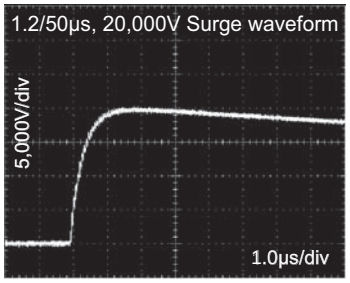
Unit: mm

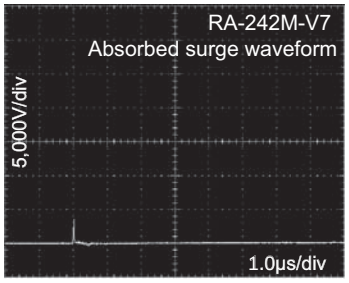
● *Circuit*



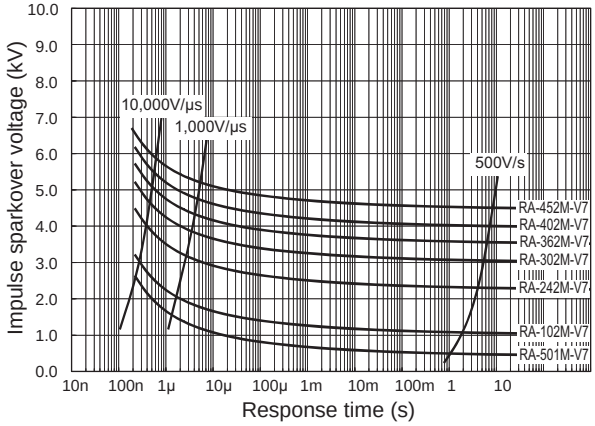
Dimensions max.(mm)	
A	
RA-M-V7	19
RA-MS-V7	16

● *Impulse Absorption Characteristics*





● *V-t Characteristics*



Electrical Specifications

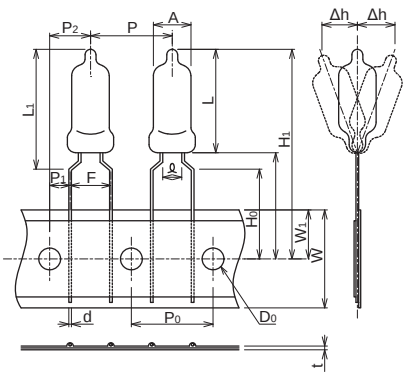
Model Number	DC Breakdown Voltage (V)	Impulse Sparkover Voltage 1.2/50μs (V) max.		Insulation Resistance (MΩ) min.	Capacitance 1MHz (pF) max.	Impulse Life test 8/20μs 100A	Impulse Current Capacity 8/20μs (A)	Withstanding Voltage
		Applied Voltage	Specification					
RA-501M/MS-V7	500(400～600)	-	-	1000(DC100V)	2.0	300 times	3,500	—
RA-601M/MS-V7	600(480～720)			1000(DC250V)				—
RA-102M/MS-V7	1,000(800～1,200)			1000(DC500V)				—
RA-152M/MS-V7	1,500(1,200～1,800)							—
RA-242M-V7	2,400(1,920～2,880) *	5,000V	5,000V max.					AC1,250V 3s
RA-302M-V7	3,000(2,400～3,600) *							AC1,500V 60s
RA-362M-V7	3,600(2,880～4,320) *							AC1,800V 3s
RA-402M-V7	4,000(3,200～4,800) *	7,500V	7,500V max.					AC2,000V 60s
RA-452M-V7	4,500(3,600～5,400) *	8,000V	8,000V max.	1000(DC1000V)				AC2,000V 60s
RA-242MS-V7	2,400(1,920～2,880) *	5,000V	5,000V max.	1000(DC500V)				AC1,250V 3s
RA-302MS-V7	3,000(2,400～3,600) *							AC1,500V 60s
RA-362MS-V7	3,600(2,880～4,320) *							AC1,800V 3s
RA-402MS-V7	4,000(3,200～4,800) *	7,500V	7,500V max.					AC2,000V 60s
RA-452MS-V7	4,500(3,600～5,400) *	8,000V	8,000V max.	1000(DC1000V)				AC2,000V 60s

* Reference Value

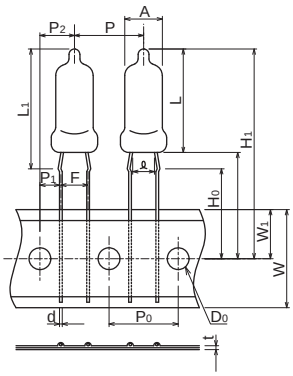
Operating Temperature: -20~+80°C

● *Taping Dimensions*

RA-XXXM(S)-V7-Y



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



*t: Lead wire diameter not included

Unit: mm

Description		Symbol	Dimension (mm)	
			RA-M(S)-V7-Y	RA-M(S)-V7-Y(5)
RA	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	ℓ	4.0 min.	
Height from PCB top		L_1	22.0 max. (19.0 max.)	
Lamp pitch		P	15.0±1.0	12.7±1.0
Hole pitch		P_0	15.3±0.3 *1	12.7±0.3 *1
Hole position		P_1	3.75±0.7	3.85±0.7
		P_2	7.5±1.3	6.35±1.3
Lead pitch		F	7.5±0.5	$5.0^{+0.6}_{-0.2}$
Declining		Δh	±2.0	
Paper width		W	18.0±0.5	
Hole position		W_1	9.0±0.5	
Lead clinch height		H_0	16.0±0.5	
Product height *2		H_1	38.5 (35.5)	
Hole diameter		D_0	φ 4.0±0.2	
Paper thickness		t	0.7±0.2	

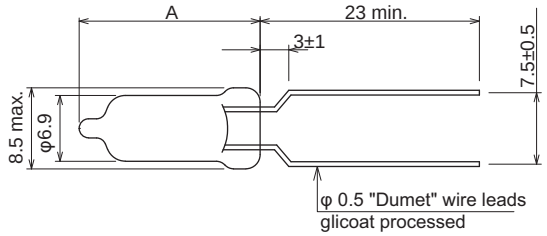
*2 Nominal value

*1 Accumulative pitch error:

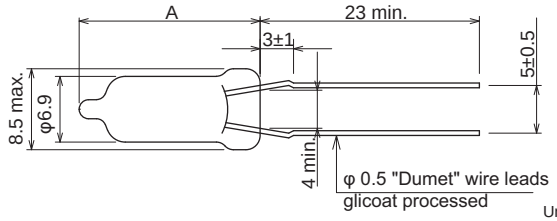
	4 pitch	20 pitch
RA-M(S)-V7-Y	60.0±0.6	300±1.5
RA-M(S)-V7-Y(5)	50.8±0.6	254±1.5

● *Forming Dimensions*

RA-XXXM(S)-V7-F



RA-XXXMS-V7-F(5)



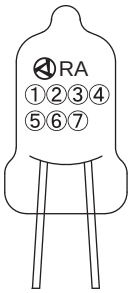
Unit: mm

● *Packing Quantity per Carton*

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

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

● *Description of marking*



eg)

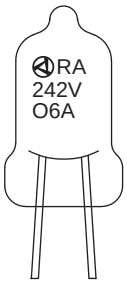
Model: RA-242M-V7

DC Breakdown voltage: 2,400V

Tolerance: ±20%→O

Calendar: 2016→6

Manufactured month: January→A



①②③····· DC Breakdown Voltage ①②×10③

④····· V (Radial)

⑤····· Tolerance

Tolerance	±20%	$^{+30}_{-10}$%	Other
Symbol	O	R	-

⑥····· Identification of manufacture year eg.) 2015→5

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

Safety Standard

UL	CSA	TÜV	Model Number
○ *1	-	-	RA-501M/MS-V7
○ *1 *2	-	-	RA-601M/MS-V7
○ *1 *2	-	-	RA-102M/MS-V7
○ *1 *2	-	-	RA-152M/MS-V7
○ *1	○ *1	-	RA-242M-V7
○ *1 *2	○ *3	○ *4	RA-302M-V7
○ *1 *2	○ *3	○ *4	RA-362M-V7
○ *2	○ *3	○ *4	RA-402M-V7
○ *2	○ *3	○ *4	RA-452M-V7
○ *1	○ *1		RA-242MS-V7
○ *1 *2	○ *3	○ *4	RA-302MS-V7
○ *1 *2	○ *3	○ *4	RA-362MS-V7
○ *2	○ *3	○ *4	RA-402MS-V7
○ *2	○ *3	○ *4	RA-452MS-V7

Rated voltage <A>: Approved if it is connected to UL approved varistor <B>.

	A	B
*1	AC125V	V1.0≥270V, D≥φ5mm
*2	AC250V	V1.0≥390V, D≥φ7mm
*3	AC250V	V1.0≥270V, D≥φ5mm
*4	AC125V / AC250V	V1.0≥470V, D≥φ5mm