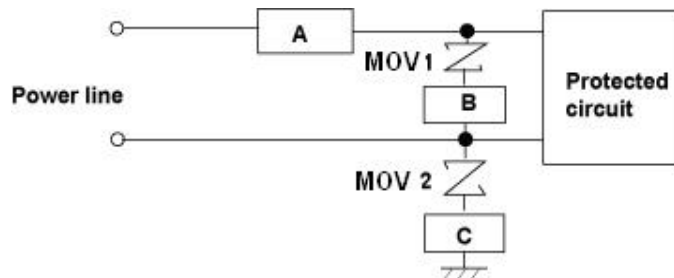


Application Notes

Application examples			Note for selection
Protected circuit	Location	Part Number	(1)The special using conditions of the individual protected circuit shall be taken into account for varistor selection in addition to the general selection procedure.
Home Appliances	Indoor	05D□□□K	
		07D□□□K	
		10D□□□K	
Home Appliances	Outdoor	07D□□□K	
		10D□□□K	
		14D□□□K	
Communications Measurements Controls	Indoor	07D□□□K	
		10D□□□K	
		14D□□□K	
Communications Measurements Controls	Outdoor	10D□□□K	
		14D□□□K	
		20D□□□K	
Consumer industrial	Indoor, Outdoor	14D□□□K	
		20D□□□K	

CAUTION:

1.A Surge excess of the specified Maximum Peak Current may cause short circuit or mechanical damage. The following measures are recommended.



(1)Location of the over current protector (circuit breaker or current fuse) shall be in the power line to the circuit (Location A) or in series with varistor (Location B).

Part Number	05D□□□K	07D□□□K	10D□□□K	14D□□□K	20D□□□K
Fuse rating	1 to 2A	2 to 3A	3 to 5A	5 to 10A	5 to 15A

(2)It is recommended that a fuse listed in the table shall be put in location A or B.

(3)In case that varistor is used in line to ground, the ground fault circuit interrupter shall be applied in location A or thermally coupled fuse shall be applied in location C.

(4)Varistor shall not be used near the flammable materials.

2.When varistor is molded at en-used, molding resin materials shall be carefully selected, otherwise varistor’s long term stability could degrade.

3.Varistor shall not be used near heat generating device and free from direct sunlight. Varistor shall be used within the specified Operating Temperature Range.

4.Varistor shall be free from dust, metal power, and dew and sea wind. A protective box is recommended to prevent the unit from those.

Application Notes

MODEL NUMBER 5mm	MODEL NUMBER 7mm	MODEL NUMBER 10mm	MODEL NUMBER 14mm	MODEL NUMBER 20mm	Recommended Applications	
05D180L	07D180L	10D180L	14D180L	20D180L	<ul style="list-style-type: none"> ● Protection of various kinds of semiconductors ● Protection of automobile equipment ● Absorption of switching surge from various kinds of relays and electro-magnetic valves (DC below 48V) ● Protection of electrostatic ● Discharge ● Cellular phone 	
05D220K	07D220K	10D220K	14D220K	20D220K		
05D270K	07D270K	10D270K	14D270K	20D270K		
05D330K	07D330K	10D330K	14D330K	20D330K		
05D390K	07D390K	10D390K	14D390K	20D390K		
05D470K	07D470K	10D470K	14D470K	20D470K		
05D560K	07D560K	10D560K	14D560K	20D560K		
05D680K	07D680K	10D680K	14D680K	20D680K		
05D820K	07D820K	10D820K	14D820K	20D820K		<ul style="list-style-type: none"> ● Telephone. Communication line (DC 48V)
05D101K	07D101K	10D101K	14D101K	20D101K		
05D121K	07D121K	10D121K	14D121K	20D121K		
05D151K	07D151K	10D151K	14D151K	20D151K		
05D181K	07D181K	10D181K	14D181K	20D181K	<ul style="list-style-type: none"> ● AC 100V Line-Line Applications (Japan) 	
05D201K	07D201K	10D201K	14D201K	20D201K		
05D221K	07D221K	10D221K	14D221K	20D221K		
05D241K	07D241K	10D241K	14D241K	20D241K	<ul style="list-style-type: none"> ● AC 100V to 120V. Line-Line Applications(Japan.,U.S., Canada) 	
05D271K	07D271K	10D271K	14D271K	20D271K		
05D301K	07D301K	10D301K	14D301K	20D301K		
05D331K	07D331K	10D331K	14D331K	20D331K	<ul style="list-style-type: none"> ● Telephone Line Application (250V Insulation Resistance Test Applicable) 	
05D361K	07D361K	10D361K	14D361K	20D361K		
05D391K	07D391K	10D391K	14D391K	20D391K		

Application Notes

MODEL NUMBER 5mm	MODEL NUMBER 7mm	MODEL NUMBER 10mm	MODEL NUMBER 14mm	MODEL NUMBER 20mm	Recommended Applications
05D431K 05D471K	07D431K 07D471K	10D431K 10D471K	14D431K 14D471K	20D431K 20D471K	<ul style="list-style-type: none"> ● AC200/220V Line-Line Applications ● AC100V to 220V. Line-Ground Applications
		10D561K 10D621K 10D681K	14D561K 14D621K 14D681K	20D561K 20D621K 20D681K	<ul style="list-style-type: none"> ● AC240V Line-Line Applications (U.S., Australia, Middle East Countries)
		10D561K 10D561K 10D561K	14D561K 14D561K 14D561K	20D561K 20D561K 20D561K	<ul style="list-style-type: none"> ● AC380V,Line-Line and line-ground Applications
		10D911K	14D911K	20D911K	<ul style="list-style-type: none"> ● AC 415V,Line-Line and line-ground Applications
		10D102K 10D112K	14D102K 14D112K	20D102K 20D112K	<ul style="list-style-type: none"> ● AC 480V,Line-Line and line-Ground Applications
			14D182K	20D182K	<ul style="list-style-type: none"> ● Line Ground Application (For1200VAC Withstanding Test)

Select of fuse in conformity to VCR Varistor

* If conform with diameter:

Part No.	05D series	07D series	10D series	14D series	20D series
Fuse rating	1 to 2 A	2 to 3 A	3 to 5 A	3 to 10 A	5 to 15 A

* If conform with Max. Peak current:

Max. peak Current 8/20 μ s 1 time (A)	Up to 500	501 to 2000	2001 to 6000
Fuse rating(A)	3	5	10