

# PMR209

**RoHS**  
Compliant

- RC unit, class X2, metallized paper with integrated resistor
- 0.047 – 0.47  $\mu\text{F}$ , 22 – 470  $\Omega$ , 250 VAC, +85 °C

- Small dimensions
- Excellent self-healing properties. Ensures long life even when subjected to frequent overvoltages.
- High dU/dt capability.
- Self-extinguishing encapsulation.
- Good resistance to ionisation due to impregnated dielectric.

- The impregnated paper ensures excellent stability giving outstanding reliability properties, especially in applications having continuous operation.

## TYPICAL APPLICATIONS

RC unit for use in DC and AC applications for:

- contact protection
- interference suppression of contacts
- transient suppression

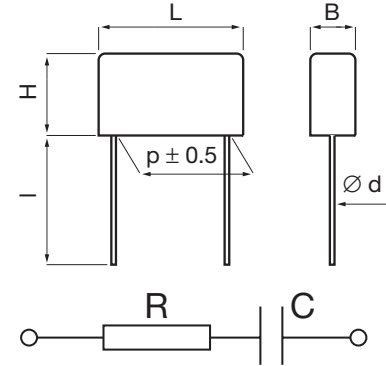
## CONSTRUCTION

Single layer metallized paper. Encapsulated and impregnated in self-extinguishing material meeting the requirements of UL 94V-0. The resistance in the metal layer is utilized as series resistance, integrated resistor.

## TECHNICAL DATA

<b>Rated voltage</b>	250 VAC 50/60 Hz, 630 VDC
<b>Capacitance range</b>	0.047 – 0.47 $\mu\text{F}$
<b>Capacitance tolerance</b>	$\pm 20\%$
<b>Resistance range</b>	22 – 470 $\Omega$
<b>Resistance tolerance</b>	$\pm 30\%$
<b>Peak pulse voltage</b>	1000 V
<b>Temperature range</b>	–40 to +85°C
<b>Climatic category</b>	40/085/56/B
<b>Approvals</b>	ENEC, UL
<b>Series resistance</b>	The series resistance is defined at 1 kHz for RC $\geq 50 \mu\text{s}$ and at 100 kHz for RC $< 50 \mu\text{s}$ .
<b>Insulation resistance</b>	$\geq 3000 \text{ M}\Omega$ for C $\leq 0.33 \mu\text{F}$ $\geq 1000 \text{ s}$ for C $> 0.33 \mu\text{F}$ Measured at 500 VDC after 60 s, +23°C
<b>Pulse current</b>	Max 12 A repetitive. Max 20 A peak for occasional transients.
<b>Test voltage between terminals</b>	The 100% screening factory test is carried out at 1800 VDC. The voltage level is selected to meet the requirements in applicable equipment standards. All electrical characteristics are checked after the test.
<b>In DC applications</b>	Recommended voltage $\leq 630 \text{ VDC}$ .
<b>Power ratings</b>	The average losses may reach 0.5 W provided the surface temperature does not exceed +85°C. For max. permitted power dissipation vs temperature, see derating curves.

Curve	Dimensions
1	B = 7.3
2	B = 7.6
3	B = 11.3
4	B = 15.3

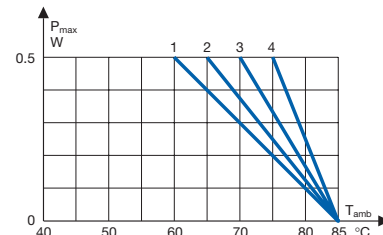


d = 0.8 for p = 15.2 and 20.3  
1.0 for p = 25.4

l: standard: 30  $\pm 0$  mm (code R30)

option 1: short leads, tolerance  $\pm 0$  mm (standard 6 mm, code R06)  
Other lead lengths on request

option 2: 30 mm insulated solid leads,  
ordering code: replace R30  
with R300PS in std P/N



## ENVIRONMENTAL TEST DATA

<b>Vibration</b>	IEC 60068-2-6, Test Fc	3 directions at 2 hour each 10 – 500 Hz at 0.75 mm or 98 m/s <sup>2</sup>	No visible damage, No open or short circuit
<b>Bump</b>	IEC 60068-2-29, Test Eb	4000 bumps at 390 m/s <sup>2</sup>	No visible damage, No open or short circuit
<b>Solderability</b>	IEC 60068-2-20, Test Ta	Solder globule method	Wetting time for d $\leq 0.8 < 1 \text{ s}$ for d $> 0.8 < 1.5 \text{ s}$
<b>Active flammability</b>	EN/IEC 60384-14:2005		
<b>Passive flammability</b>	EN/IEC 60384-14:2005		
<b>Humidity</b>	IEC 60068-2-3, Test Ca	+40°C and 90 – 95% R.H.	56 days

## ARTICLE TABLE

Capacitance $\mu\text{F}$	Resistance $\Omega$	Max dimensions in mm				Quantity per package			Weight g	Article code
		B	H	L	p	R30 pcs	R06 pcs	reel taped pcs		
0.047	47	7.3	13.0	18.5	15.2	400	800	400	3.0	PMR209MB5470M047R30
0.047	100	7.3	13.0	18.5	15.2	400	800	400	3.0	PMR209MB5470M100R30
0.10	22	7.6	14.0	24.0	20.3	250	1500	250	4.0	PMR209MC6100M022R30
0.10	33	7.6	14.0	24.0	20.3	250	1500	250	4.0	PMR209MC6100M033R30
0.10	47	7.6	14.0	24.0	20.3	250	1500	250	4.0	PMR209MC6100M047R30
0.10	68	7.6	14.0	24.0	20.3	250	1500	250	4.0	PMR209MC6100M068R30
0.10	100	7.6	14.0	24.0	20.3	250	1500	250	4.0	PMR209MC6100M100R30
0.10	150	11.3	16.5	24.0	20.3	150	1500	180	7.0	PMR209MC6100M150R30
0.10	220	11.3	16.5	24.0	20.3	150	1500	180	7.0	PMR209MC6100M220R30
0.10	330	11.3	16.5	24.0	20.3	150	1500	180	7.0	PMR209MC6100M330R30
0.10	470	11.3	16.5	24.0	20.3	150	1500	180	7.0	PMR209MC6100M470R30
0.22	22	11.3	16.5	24.0	20.3	150	1500	180	7.0	PMR209MC6220M022R30
0.22	33	11.3	16.5	24.0	20.3	150	1500	180	7.0	PMR209MC6220M033R30
0.22	47	11.3	16.5	24.0	20.3	150	1500	180	7.0	PMR209MC6220M047R30
0.22	68	11.3	16.5	24.0	20.3	150	1500	180	7.0	PMR209MC6220M068R30
0.22	100	11.3	16.5	24.0	20.3	150	1500	180	7.0	PMR209MC6220M100R30
0.22	150	11.3	16.5	24.0	20.3	150	1500	180	7.0	PMR209MC6220M150R30
0.22	220	11.3	16.5	24.0	20.3	150	1500	180	7.0	PMR209MC6220M220R30
0.22	330	12.1	19.0	30.5	25.4	100	800		10.0	PMR209ME6220M330R30
0.22	470	15.3	22.0	30.5	25.4	75	600		15.0	PMR209ME6220M470R30
0.47	33	15.3	22.0	30.5	25.4	75	600		15.0	PMR209ME6470M033R30
0.47	47	15.3	22.0	30.5	25.4	75	600		15.0	PMR209ME6470M047R30
0.47	68	15.3	22.0	30.5	25.4	75	600		15.0	PMR209ME6470M068R30
0.47	100	15.3	22.0	30.5	25.4	75	600		15.0	PMR209ME6470M100R30
0.47	150	15.3	22.0	30.5	25.4	75	600		15.0	PMR209ME6470M150R30
0.47	220	15.3	22.0	30.5	25.4	75	600		15.0	PMR209ME6470M220R30

## APPROVALS

Certification Body	Specification
ENEC	EN/IEC 60384-14:2005
UL	UL 1283

## MARKING

- RIFA
- RIFA article code
- RC unit
- Rated capacitance and resistance
- Rated voltage
- X2
- SH, for self-healing
- Climatic category according to IEC 60068-1, appendix A
- Passive flammability class
- Circuit diagram
- Manufacturing code (year, month)

## ORDERING INFORMATION

The article code for the standard part is given in the article table.  
For other options, see page 11.