

# PMR210

- RC unit, class X1, metallized paper with integrated resistor
- 0.022 – 0.1  $\mu\text{F}$ , 100  $\Omega$ , 250 VAC, +85 °C

- RC unit for safety applications.
- Small dimensions
- High dU/dt capability.
- Self-extinguishing encapsulation. The material is recognized acc. to UL 94 V-0
- Good resistance to ionisation due to impregnated dielectric.
- Excellent self-healing properties. Ensures long life even when subjected to frequent overvoltages.
- 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:

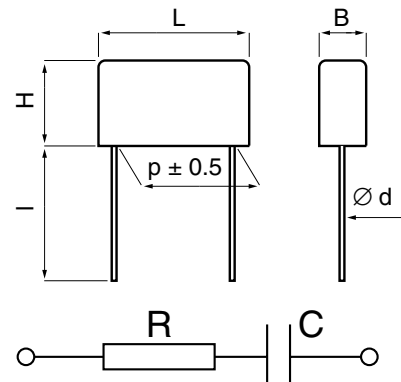
- contact protection
- interference suppression of contacts
- transient suppression

## 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.

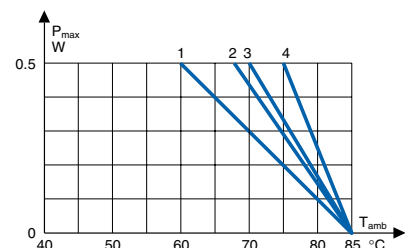
## TECHNICAL DATA

<b>Rated voltage</b>	250 VAC, 50/60 Hz												
<b>Capacitance range</b>	0.022–0.1 $\mu\text{F}$												
<b>Capacitance tolerance</b>	$\pm 20\%$												
<b>Resistance range</b>	100 $\Omega$												
<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>	S, N, D, FI, VDE, SEV, UL												
<b>Series resistance</b>	The series resistance is defined at 100 kHz												
<b>Insulation resistance</b>	$\geq 1000 \text{ M}\Omega$ Measured at 500 VDC after 2 min, +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 3000 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 $\leq 1000 \text{ VDC}$ .												
<b>Power ratings</b>	The average losses may reach 0.5 W provided the surface temperature does not exceed +85°C. For maximum permitted power dissipation vs temperature, see derating curves.												
<table border="1"> <thead> <tr> <th>Curve</th><th>Dimensions</th></tr> </thead> <tbody> <tr> <td>1</td><td>B = 7.3</td></tr> <tr> <td>1</td><td>B = 8.5</td></tr> <tr> <td>2</td><td>B = 9.0</td></tr> <tr> <td>3</td><td>B = 11.3</td></tr> <tr> <td>4</td><td>B = 10.6</td></tr> </tbody> </table>		Curve	Dimensions	1	B = 7.3	1	B = 8.5	2	B = 9.0	3	B = 11.3	4	B = 10.6
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d = 0.8 for p = 15.2 and 20.3  
1.0 for p = 25.4

l: standard: 30 +5/-0 mm  
option: short leads, tolerance +0/-1 mm (standard 6 mm, code R06)  
Other lead lengths on request.



Maximum allowable power dissipation vs ambient temperature and case sizes.

## ARTICLE TABLE

Capacitance μF	Resistance Ω	Max dimensions in mm				Quantity per package			Weight g	Approvals							Article code
		B	H	L	p	R30 pcs	R06 pcs	reel taped pcs		S	Z	D	EL	VDE	SEV	UL	
0.022	100	7.3	13.0	19.0	15.2	400	800	400	3.0	✓	✓	✓	✓	✓	✓	✓	PMR210MB5220M100R30
0.033	100	8.5	14.3	18.5	15.2	300	500	350	3.8	✓	✓	✓	✓	✓	✓	✓	PMR210MB5330M100R30
0.047	100	9.0	15.0	24.0	20.3	200	1200	250	5.0	✓	✓	✓	✓	✓	✓	✓	PMR210MC5470M100R30
0.068	100	11.3	16.5	24.0	20.3	150	1000	180	7.0	✓	✓	✓	✓	✓	✓	✓	PMR210MC5680M100R30
0.10	100	10.6	16.1	30.5	25.4	150	1000		8.0	✓	✓	✓	✓	✓	✓	✓	PMR210ME6100M100R30

## APPROVALS/REFERENCE DOCUMENTS

Certification Body	Specification	Approval reference
S	EN 132400	9528106
FI	EN 132400	184191-01
N	EN 132400	293103075
D	EN 132400	303424
VDE	EN 132400	91806
SEV	EN 132400	00-1928
UL	UL 1414 Across-the-line ( $U_R = 250 \text{ VAC}$ )	E 73869

## MARKING

- RIFA
- RIFA article code
- RC unit
- Rated capacitance and resistance
- Rated voltage
- IEC 60065
- SH, for self-healing
- Climatic category according to IEC 60068-1, appendix A
- Passive flammability class
- Approval marks
- Manufacturing code (year, month)

## 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 132400		
<b>Passive flammability</b>	IEC 60384-14 (1993) EN 132400 UL 1414	Enclosure material of UL 94V-0 flammability class	
<b>Humidity</b>	IEC 60068-2-3 Test Ca	+40°C and 90 – 95% R.H.	56 days

## PACKING

RC units in standard design (lead length 30 mm) and with  $L < 24 \text{ mm}$  and lead length 5 or 6 mm are packed bulk in a box with dimensions 245 x 145 x 80 mm. Quantity/package as per article table.

RC units with  $L \geq 24 \text{ mm}$  and lead length 5 or 6 mm are packed on trays piled in a box with dimensions 300 x 260 x 195 mm. Quantity/package as per article table.

Reels with taped capacitors are packed 10 in a box with dimensions 370 x 370 x 560 mm. The standard quantity/reel is for 360 mm reel. If 500 mm reel is required, it must be specified when ordering and the quantity is 2 x the given quantity.

## ORDERING INFORMATION

The article code for the standard part is given in the article table.  
For other options, see page 21.