

PMR 209 RC-unit

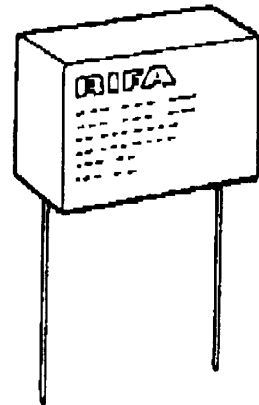
- Small dimensions
- High dU/dt capability.
- Excellent self-healing properties. Ensures long life even when subject to frequent overvoltages.
- Self-extinguishing encapsulation.
- Good resistance to ionisation due to impregnated dielectric.
- The impregnated paper ensures excellent stability giving outstanding reliability properties, especially in applications having continuous operation.
- Safety approvals in four (4) countries.

Application

RC-unit for use in DC and AC applications for:
— contact protection
— interference suppression of contacts
— transient suppression

Basic design

Single-layer metallized paper impregnated with and encased in epoxy resin. The resistance in the metal-layer is utilized as series resistance. Integrated resistor.



General data

Capacitance range	0.047–0.47 μ F
Capacitance tolerance	$\pm 20\%$
Resistance	47 and 100 Ω
Resistance tolerance	$\pm 30\%$
Rated voltage	250 VAC 50 Hz, 630 VDC
Peak pulse voltage	1000 V
Temperature range	–40 to +85°C
Climatic category	IEC 40/0B5/56
Power rating	0.5 W or + 85°C
Approvals	SEMKO, NEMKO, DEMKO, VDE, SEV, FI, UL

Electrical characteristics

Series resistance

The series resistance is defined as:
 $R = \tan \delta / \omega C$ at 100 kHz

Insulation resistance

$\geq 3000 \text{ M}\Omega$ for $C \leq 0.33 \mu\text{F}$
 $\geq 1000 \text{ }\Omega\text{F}$ for $C > 0.33 \mu\text{F}$
Measured at 500 VDC after 60 s, +23°C

Pulse current

Max 12 A repetitive. Max 20 A peak for occasional transients.

Test voltage between terminals

The RIFA 100% screening factory test is carried out at 1500 VDC. The voltage is selected to meet the approval requirements. All electrical characteristics are checked after the voltage tests.

In DC applications

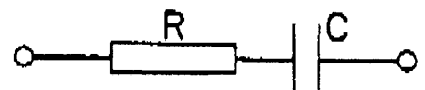
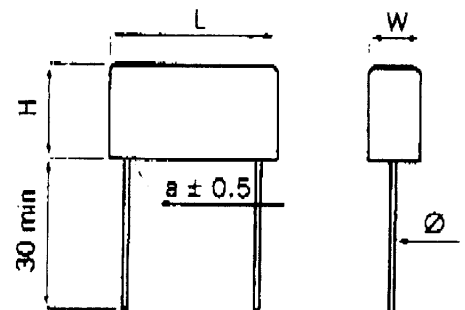
Recommended voltage $\leq 630 \text{ VDC}$.

Power ratings

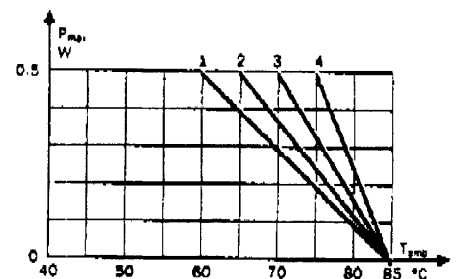
The average losses may reach 0.5 W provided the surface temperature does not exceed + 85°C. For maximum permitted power dissipation v temperature, see derating curves.

Curve Dimensions

1	W = 7.3
2	W = 7.6
3	W = 11.3
4	W = 15.3



$\varnothing = 0.8$ (21 S.W.G.) for $a = 15.2$ and 20.3
 1.0 (19 S.W.G.) for $a = 25.4$



Maximum allowable power dissipation v ambient temperature and case sizes.

Environmental test data

Vibration	IEC 68-2-6 Test Fc	3 directions at 2 hour each 10 – 500 Hz at 0.75 mm or 98 m/s ²	No visible damage No open or short circuit
Bump	IEC 68-2-29 Test Eb	4000 bumps at 390 m/s ²	No visible damage No open or short circuit
Solderability	IEC 68-2-20 Test Ta	Solder globule method	Wetting time for $\varnothing \leq 0.8 < 1 \text{ s}$ for $\varnothing > 0.8 < 1.5 \text{ s}$
Humidity	IEC 68-2-3 Test Ca	+40°C and 90 – 95% R.H.	56 days

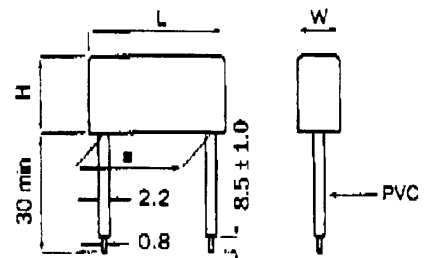
Article table PMR 209

C _a µF	Max dimensions in mm					Quantity per package			Weight g	Approvals								Article code 1 at block
	L	W	H	a	R30	R06	reel taped	S		N	D	F	V	Y	DE	SEV	UL	
					pcs	pcs	pcs											
0.47	47	19.0	7.3	13.0	15.2	400	800	400	3.0	√	√	√	√	√	√	√	1)	PMR 209MB5470M047
0.047	100	19.0	7.3	13.0	15.2	400	800	400	3.0	√	√	√	√	√	√	√	1)	PMR 209MB5470M100
0.1	47	24.0	7.6	14.0	20.3	250	1500	250	4.0	√	√	√	√	√	√	√	1)	PMR 209MC6100M047
0.1	100	24.0	7.6	14.0	20.3	250	1500	250	4.0	√	√	√	√	√	√	√	1)	PMR 209MC6100M100
0.22	47	24.0	11.3	16.5	20.3	150	1000	180	7.0	√	√	√	√	√	√	√	1)	PMR 209MC6220M047
0.22	100	24.0	11.3	16.5	20.3	150	1000	180	7.0	√	√	√	√	√	√	√	1)	PMR 209MC6220M100
0.47	47	30.5	15.3	22.0	25.4	75	600		15.0	√	√	√	√	√	√	√		PMR 209ME6470M047
0.47	100	30.5	15.3	22.0	25.4	75	600		15.0	√	√	√	√	√	√	√		PMR 209ME6470M100

1) Also available with insulated leads.

Approvals/Ref. documents

Country	Specification	Approval reference
S = Sweden	SS 443 0414	8912163
N = Norway	NEMKO 132/56	M 36323-24-26 13.11
D = Denmark	Stærkst. regl. 1962/21	93486 EC
F = Finland	E 384/14-82	082914
DE = Germany	VDE 0565 Teil 1/12.79	27986
SEV = Switzerland	SEV 1017.1959	J1.91/17
UL = USA	UL 478, UL 1283	E 100117



Ordering information

Article code	
1st block See "Article table"	2nd block The RC-unit is also available with 5 or 6 mm lead length (add R05 or R06 in pos. 17-19), and with insulated leads (add S in pos. 17). Tolerance ± 0 mm. For taped add T0 in pos. 17-18 (=lead length 19 mm)
Pos. 13, capacitance tolerance code: M = ± 20%	
Pos. 14-16 Resistance value in Ω	
P M R 2 0 9 M C 6 2 2 0 M 0 4 7	R 0 6
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	17 18 19 20

Marking

- RIFA
- RIFA article code (8 pos.)
- RC-unit
- Rated capacitance and resistance
- Rated voltage
- X2
- SH, for self-healing
- Climatic category according to IEC 68-1, appendix A
- Circuit diagram
- Manufacturing code (factory, year, month)

Packing

RC-units in standard design (lead length 30 mm) and with L < 24 mm and lead length 5 or 6 mm are packed bulk in a box with dimensions 230 × 155 × 72 mm. Quantity/package as per the "Article table".

RC-units with L ≥ 24 mm and lead length 5 or 6 mm are arranged in order on plastic trays piled in a box with dimensions 295 × 255 × 180 mm. Quantity/package as per the "Article table".

Reels with taped capacitors are packed 10 in a box with dimensions 600 × 400 × 400 mm.