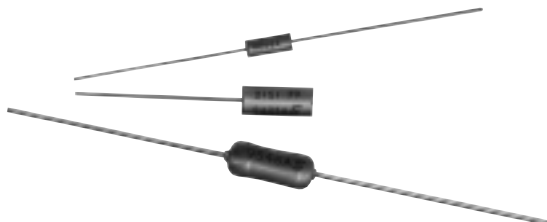




RLP HR RWR

ESA SCC 4002

high reliability wirewound resistors



Originally developed for space application, these resistors are manufactured, selected and tested to ESA SCC 4002 specification.

Different versions are offered:

- epoxy coating or molded,
 - inductive or non inductive,
- and each one with different terminal length.

As requested by the ESA specifications two test levels are available :

- level B with serialized components,
- level C without serialization.

**RLP HR
epoxy coating**

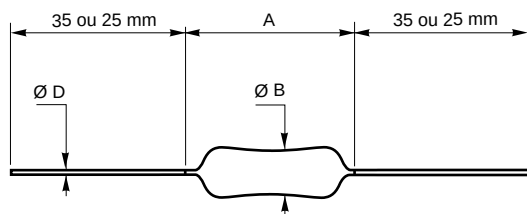


Fig. 1

**RLP HR
molded**

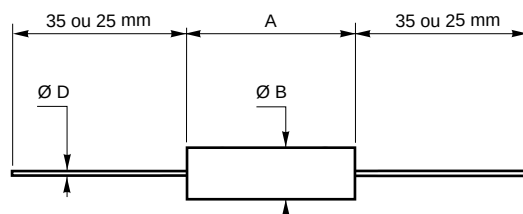


Fig. 2

Table 1

SFERNICE Designation	Ø B		A	Ø d	Max. weight in g	Variants
	epoxy coating	molded				
RLP1 HR	–	1,6 min. 2,67 max.	5,56 min. 7,14 max.	0,47 min. 0,7 max.	0,4 g	05
RLP2 HR	1,6 min. 3,8 max.	1,6 min. 4 max.	9,52 min. 11,10 max.	0,5 min. 0,7 max.	0,7 g	01-03- 05
RLP3 HR	3,96 min. 5,54 max.	–	12,65 min. 15,79 max.	0,7 min. 0,9 max.	1,5 g	01-03

Table 2

VARIANTS SCC	
EPOXY COATING	
01	Inductive parts - Long terminals 35 mm
03	Inductive parts - Short terminals 25 mm
MOLDED	
05	Inductive parts - Short terminals 25 mm

SPECIFICATIONS

Table 3

SFERNICE DESIGNATION	RLP1 HR	RLP2 HR	RLP3 HR	
ESA DESIGNATION	RWR 81	RWR 80	RWR 89	
ESA SPECIFICATION APPLIED	4002/005	4002/003	4002/004	
POWER RATING AT	+70°C	0,8 W	1,6 W	2,4 W
	+25°C	1 W	2 W	3 W
LIMITING ELEMENT VOLTAGE	50 V	120 V	200 V	
TEMPERATURE COEFFICIENT from –55°C to +175°C	0,1 Ω ≤ R ≤ 1 Ω ±100 ppm/°C Code 4 1 Ω < R < 10 Ω ± 50 ppm/°C Code 3 R ≥ 10 Ω ± 30 ppm/°C Code 9			
QUALIFIED OHMIC RANGE	0,5 Ω to 1 kΩ	0,5 Ω to 2,2 kΩ	0,1 Ω to 4,12 kΩ	
TOLERANCE	± 0,5 % to ± 5 %			
TEMPERATURE RANGE	–55°C ... +275°C			

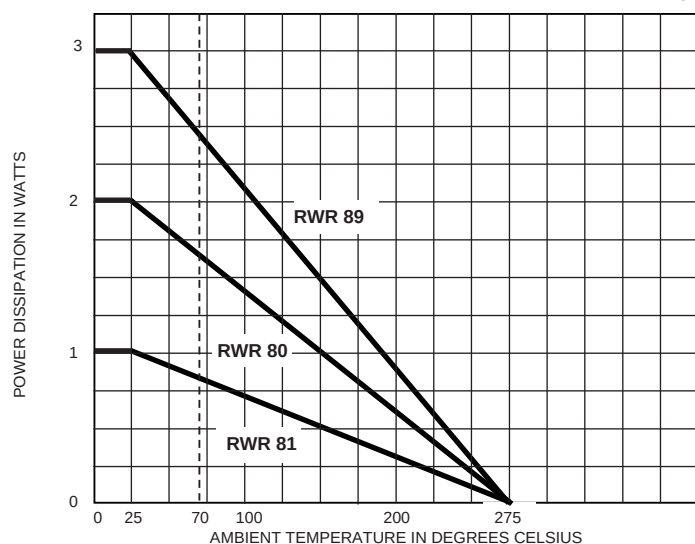
PERFORMANCES

Table 4

TESTS	CONDITIONS	LIMIT DRIFTS
INSULATION RESISTANCE	$U_T = 500 \text{ V}$	1000 M Ω min.
SOLDERING (thermal shocks)	$T = + 245^\circ\text{C}$ $t \leq 10 \text{ s}$ max. immersion $\geq 1,5 \text{ mm}$ from the body	$\pm (0,1 + \frac{0,01 \Omega}{R_n} \times 100) \%$
SHORT TIME OVERLOAD	$U = \sqrt{5 P_n R_n}$ or $2 U_L$	$\pm (0,25 + \frac{0,05 \Omega}{R_n} \times 100) \%$
TERMINAL STRENGTH	CEI 68-2-21 Tests U_a, U_b, U_c	$\pm (0,25 + \frac{0,05 \Omega}{R_n} \times 100) \%$
RAPID TEMPERATURE CHANGE	CEI 68-2-14 5 cycles	$\pm (0,5 + \frac{0,05 \Omega}{R_n} \times 100) \%$
VIBRATION	CEI 68-2-6 Test F_c 10 / 2000 Hz 20 g	$\pm (0,25 + \frac{0,05 \Omega}{R_n} \times 100) \%$
CLIMATIC SEQUENCE	SCC 4002 and CEI 68-2- .. $-55^\circ\text{C} / + 275^\circ\text{C} / 5 \text{ cycles}$	$\pm (1 + \frac{0,05 \Omega}{R_n} \times 100) \%$ Insulation resistance $\geq 100 \text{ M}\Omega$
LOAD LIFE	2000 h at rated power at $+ 25^\circ\text{C}$, 90' / 30' cycle	$\pm (0,5 + \frac{0,05 \Omega}{R_n} \times 100) \%$
HIGH TEMPERATURE EXPOSURE	2000 h no load at $+ 275^\circ\text{C}$	$\pm (0,5 + \frac{0,05 \Omega}{R_n} \times 100) \%$

POWER RATING CHART

Fig. 3



NON INDUCTIVE STYLE

On request, non inductive RLP HR can be manufactured (non inductive wiring Ayrton Perry type).
Please consult SFERNICE for ohmic range and feasibility.

MARKING

The SCC component number is print marked and includes: the number of the detail specification which refers to the generic specification, the variant number, the testing level (B or C), the ohmic value (4 digits code), the tolerance (letter code D: $\pm 0,5\%$, F: $\pm 1\%$, G: $\pm 2\%$, J: $\pm 5\%$, the temperature coefficient (1 digit, see table 3), the manufacturing date code (4 digits), two for the year and two for the week, the identification lot, the manufacturer logo.

On the RWR 81, because of space shortage, the SCC code relative to the generic specification is disregarded as well as the manufacturers logo.

PACKAGING

Resistors are packaged in transparent blister. For RLP1 and RLP2 epoxy coated: blister of 25 resistors; for RLP2 molded and RLP3 epoxy: blister of 20 pieces. On the blister pack, information shown is: SFERNICE designation, ESA/SCC detail specification, testing level, ohmic value, tolerance and manufacturing date code.

EXTENDED FEATURES

Please consult SFERNICE for ohmic values and tolerances outside of the qualified range.

TERMINATIONS

Standard terminations are in copperweld.

ORDERING PROCEDURE

QUALIFIED
DESIGNATION

RLP2 HR

GENERIC and DETAIL
SCC REFERENCE

4002/003

SCC
VARIANT

05

TESTING
LEVEL

B

OHMIC VALUE

1 k Ω

TOLERANCE

$\pm 1\%$



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