SMD Power Resistors

RoHS compliant

Specifications

Type			RWN 5020	RWC 5020
Styles			5020	
Dimensions		mm	non inductive, no winding	wirewound on ceramic
Power rating ϑ_o = 200°C		W	P_{25} 2,2 P_{40} 2,0 P_{70} 1,6	
Single pulse	$I_{max.}$	A	50	
	$E_{i, max}$	mWs	625	
	$T_{imp, max}$	ms	5	
periodic pulse load	i_{max}	A	30 (R003 .. .R018) 40 (R022 ... R050)	
	$E_{i,per, max}$	mWs	225	
	$t_{imp, max}$	ms	5	
	t_{pause}	ms	100	
Tolerance		%	1, 2, 5 (F, G, J)	1, 2, 5 (F, G, J)
Resistance range		Ω	0R002 ... 0R050	0R01 ... 220R
Temperature coefficient		ppm K^{-1}	see diagram	± 80
E-Series			0R003, 0R005, ≥ 0R01 : E 12	E 12
			diverging values on request	
max. cont. work. voltage		V_{RMS}	$\sqrt{P \cdot R}$	
Thermal resistance		K/W	100 [1)]	
Insulation voltage (1 min.)		V_{RMS}	1000	
Insulation resistance			> 1000MΩ	
Climatic category			55/175/56	
Temperature range		°C	–55 . . . 200	
Endurance (P_{70}, 70°C, 1000h)		$[\frac{\Delta R}{R}]$ %	≤ 1,0	
Damp heat, steady state		$[\frac{\Delta R}{R}]$ %	≤ 0,25	
Resistance to soldering heat		$[\frac{\Delta R}{R}]$ %	≤ 0,25	
Short time overload (5 * P_{70}/5sec)		$[\frac{\Delta R}{R}]$ %	≤ 1%	
Temperature shock			≤ 0,25	
Board-bending-test			no interruption	
Solderability			suitble for wave and reflow soldering in acc. with CECC 0082	

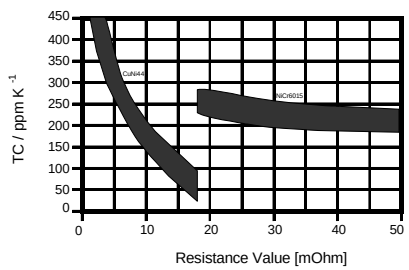
[1)] Thermal data according to DIN 44050 with solder pads as on next page.

Temperature Coeficient :

Range (RWC 5020):

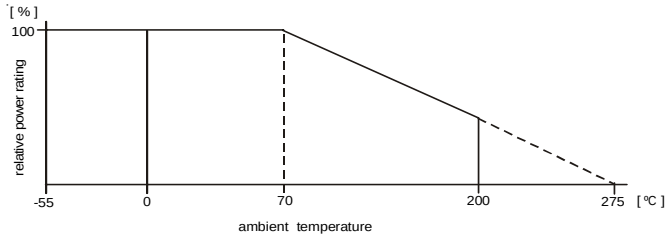
≥ 0R01	≤ 0R024	400 ± 50 ppm/K
≥ 0R027	≤ 0R091	appr. +180 ppm/K
≥ 0R1	≤ 15R	0 ± 20 ppm/K
≥ 16R	≤ 220R	0 ± 10 ppm/K

Diagram (RWN 5020):

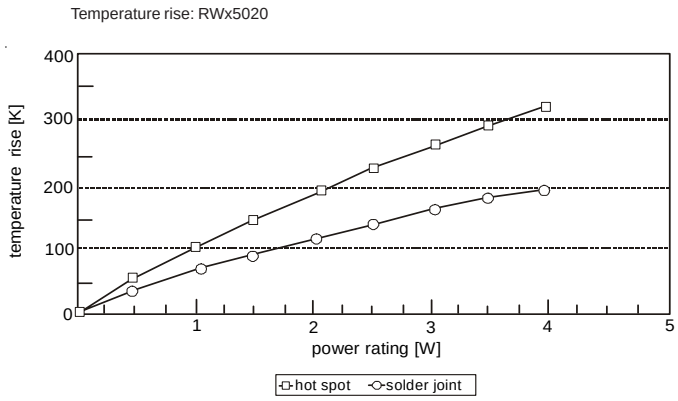


Temperature range -55 +200ºC

Derating:



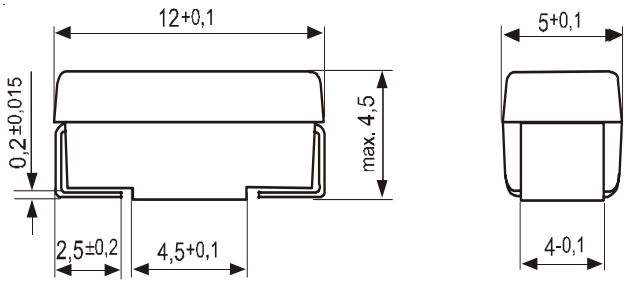
Temperature rise:

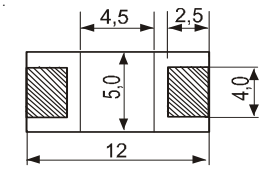


Part mounted on FR 4, pads as recommended, copper layer 35 µm

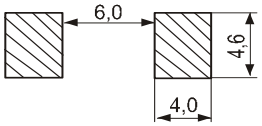
recommended solder pads:

Dimensions:





Bottom view



Solder pads

Marking:	Resistor: printed in clear: Type - Value - Tolerance
Packaging	additional Batch-No. - Production date
Packaging:	blistertape 24 mm antistatic / 1500 pcs. on reel 330 mm Ø

Ordering example:	RWC 5020	F	K	-	13	1R
	Type	tolerance	blister tape reel	TC	reel diameter	R-value

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SMD Power Metal film resistors

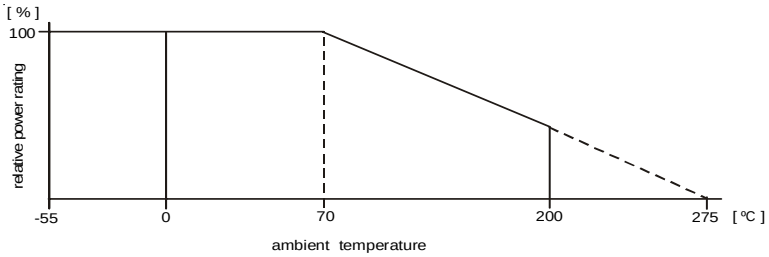
RoHS compliant

Specifications

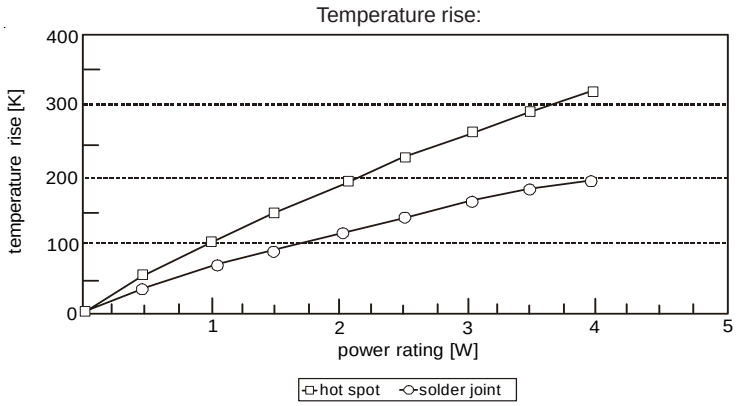
Type		RWP 5020	
Style		5020	
Power rating ϑ_o = 200°C	W	P_{25} 2,2 P_{40} 2,0 P_{70} 1,6	
		higher power depends on mounting technology	
Tolerance	%	1	5
Resistance range	Ω	10R ... 1M	1R0 ... 1M
Temperature coefficient	ppm K^{-1}	± 50	± 200
E-Series		E 96	E 12 preferred
max. cont. work. voltage	V_{RMS}	500	
Thermal resistance	K/W	90 [1)]	
Insulation voltage (1 min.)	V_{RMS}	1000	
Insulation resistance		> 1000MΩ (dry)	
Climatic category		55/175/56	
Temperature range	°C	–55 . . . 175	
Endurance (P_{70}, 70°C, 1000h, intermed.)	$[\frac{\Delta R}{R}]$ %	≤ 1,5	
Damp heat, steady state	$[\frac{\Delta R}{R}]$ %	≤ 1,5	
Resistance to soldering heat	$[\frac{\Delta R}{R}]$ %	≤ 0,25	
Short time overload (5 * P_{70}/2sec)	$[\frac{\Delta R}{R}]$ %	≤ 1%	
Temperature shock		≤ 0,25	
Board-bending-test		no interruption	
Solderability		suitble for wave and reflow soldering in acc. with CECC 0082	

[1)] Thermal data according to DIN 44050 with solder pads as on next page.

Derating:

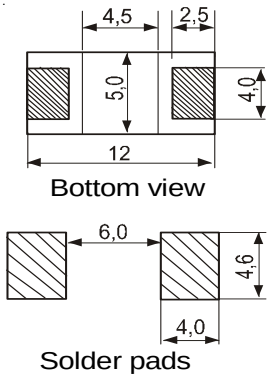


Temperature rise:

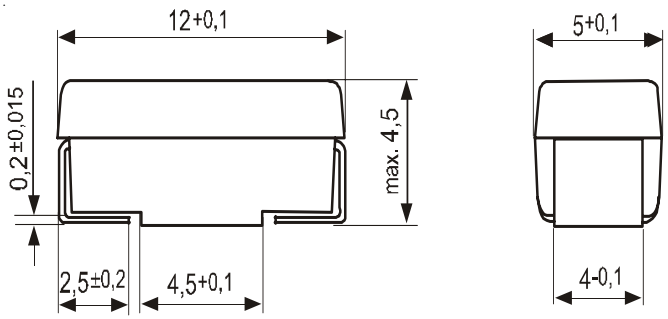


Part mounted on FR 4, pads as recommended, copper layer 35 µm

Recommended solder pads:



Dimensions in mm:



Marking:	Resistor: Printed in clear: Type - Value - Tolerance Package additional Batch-Nr. - Production date
Packaging:	Blistertape 24 mm antistatic / 1.500 pcs on reel 330 mm Ø

Ordering example:	RWP 5020	F	K	-	13	10K
	Type	Tolerance	blister tape reel	TC	reel diameter	R-value

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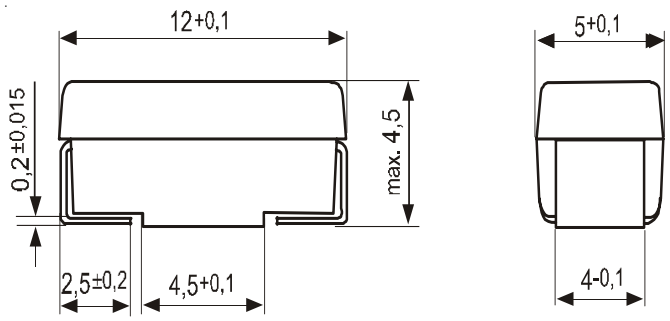
Low-Power, moulded type, RWN family:



If power rating is not the main concern, i.e. current ranges below 5A, a current sensing device in a standard resistor package may be suitable.

VITROHM offers a SMD-version (RWN), that was designed for automatic PCB-assembly with in blister-tape.

The power rating for this type is limited by the max. temperature of the moulding material. Overheating may cause carbonizing of the plastic, short circuit may occur.

This limits also the pulse handling capacity.
50A can be carried by the internal contacts, but energy must not exceed 625 mWs.