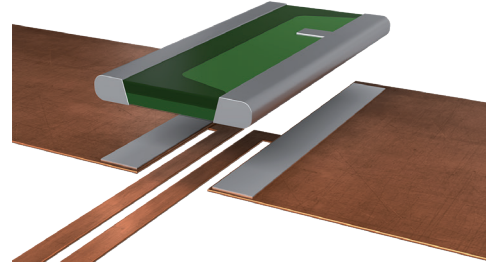




CLP (1020)

ISA-PLAN® PRECISION RESISTOR



FEATURES

- 2 W power rating at 130 °C
- Constant current up to 26 A (3 mOhm)
- Excellent long-term stability
- High pulse power rating
- Mounting: Reflow- and IR-soldering
- AEC-Q200 qualified



APPLICATIONS

- Current sensor for power hybrid applications
- Control systems for the automotive market
- Power modules
- Frequency converters
- Switch mode power supplies

Technical data

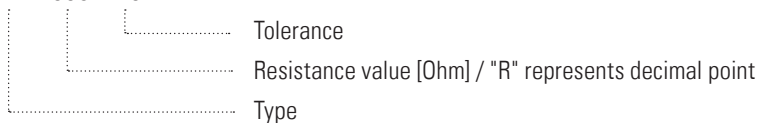
Resistance values *	mOhm	3 / 5 / 6 / 10**
Tolerance	%	1 / 5
Temperature coefficient (20-60 °C)	ppm/K	<50
Applicable temperature range	°C	-65 to +170
Power rating P_{130 °C}	W	2
Power rating P_{70 °C}	W	5
Internal heat resistance (R_{th})	K/W	<20
Dielectric withstanding voltage (AC/DC)	V	200
Inductance	nH	<1
Stability (at rated power) deviation after 2000 h	%	<0.5 ($T_K = 100 °C$)
T_K = Terminal temperature		<0.7 ($T_K = 130 °C$)

* see all standard values and tolerances on page 3

** under development

Ordering code

CLP - R003 - 1.0



Information

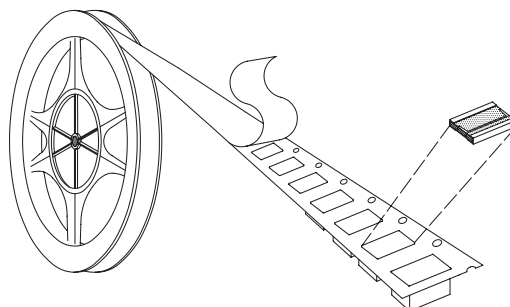
	R010
Samples	available in December 2024
AEC-Q200 qualification	available in December 2024

Recommended solder profile

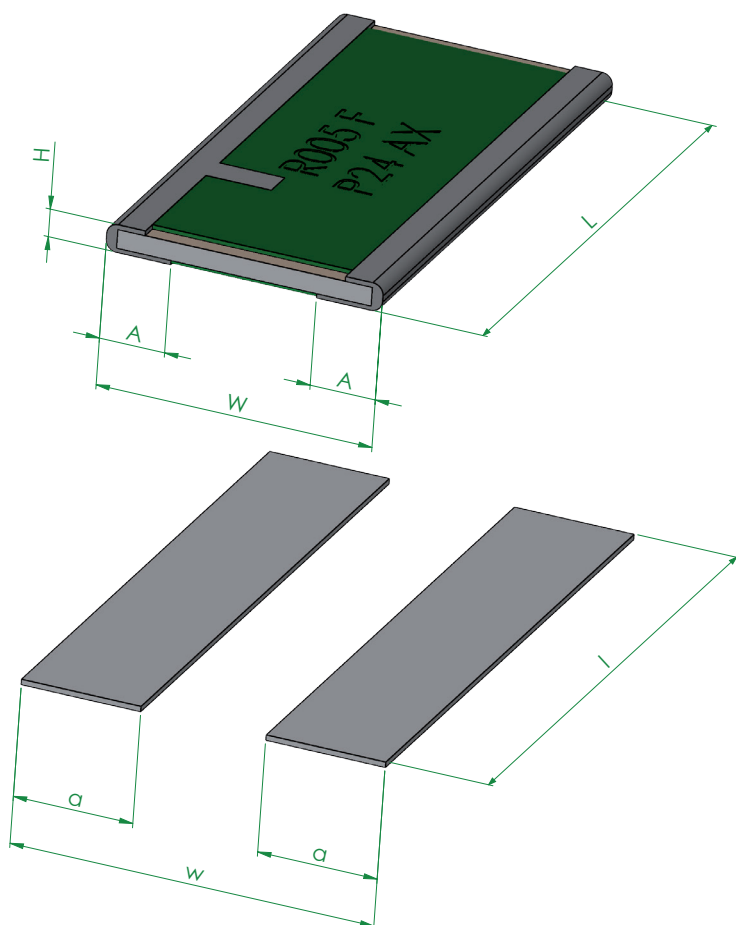
Reflow-, IR-soldering				
Temperature	°C	260	255	217
Time	sec	peak	40	90

Tape and reel information

Specification	DIN EN 60286-3			
Tape width	mm	12		
Reel size	inch	13		
Parts per reel	pcs	10000		
Packaging weight	g	481		
Tape material	plastic			



Mechanical dimensions and pcb-layout proposal (Reflow-soldering) [mm]



type	L	W	H	A
CLP	5.08 ± 0.3	2.54 ± 0.2	0.35 +0.2/-0.1	0.6 ± 0.2

solder pad type	l	w	a
CLP	5.5	3.35	1.1

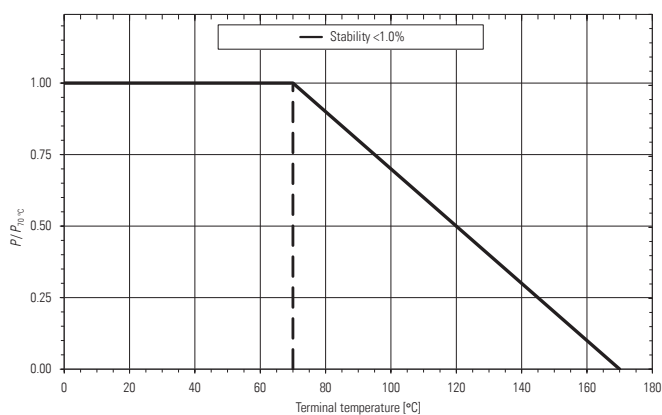
Available standard resistance values and tolerances*

Resistance values	Tolerance	
	1.0	5.0
R003	✓	✓
R005	✓	✓
R006	✓	✓
R010	✓	✓

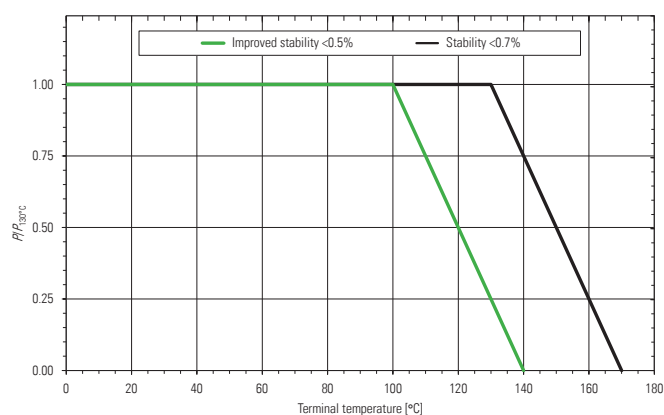
* Further values and tolerances on request

✓ = available

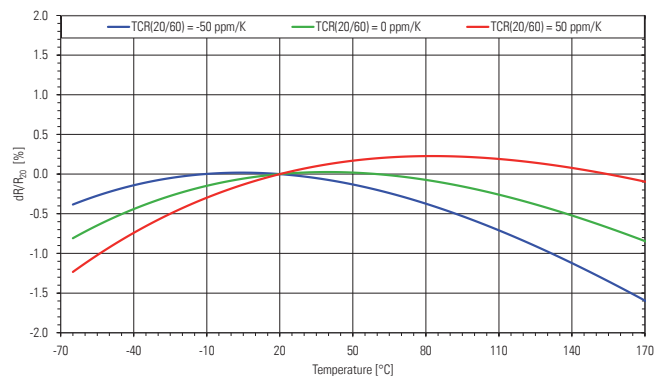
Power derating curve at 70 °C



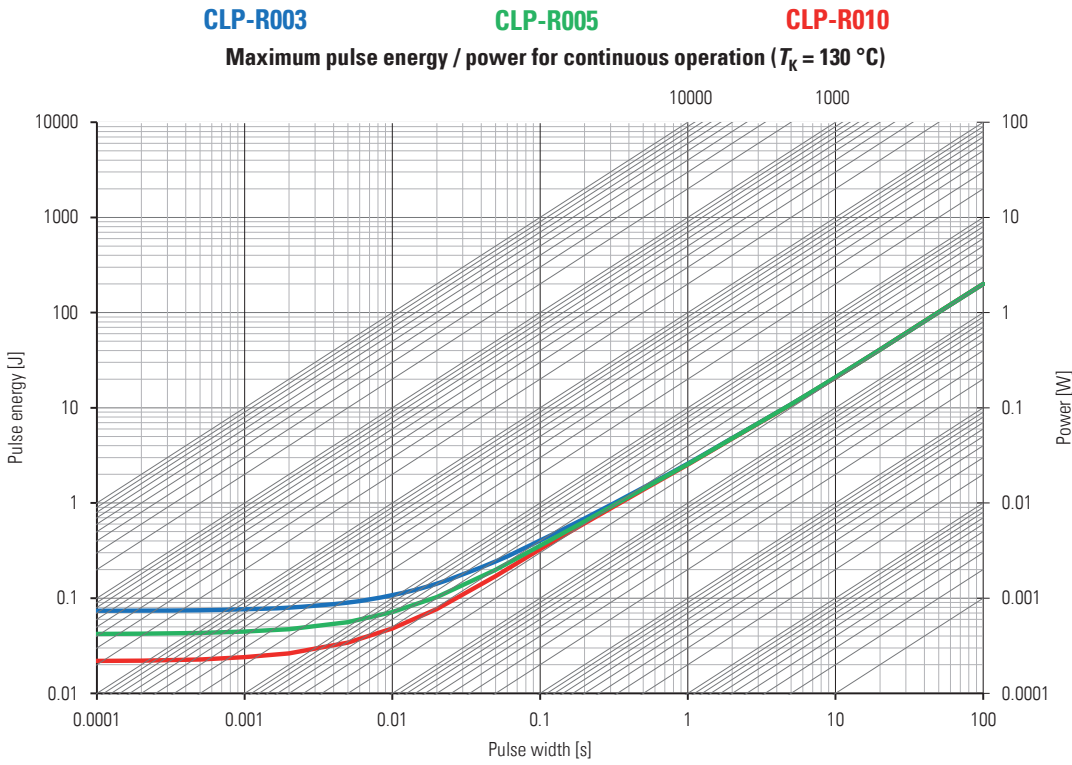
Power derating curve at 130 °C



Temperature dependence of the electrical resistance of NOVENTIN® resistors



Maximum pulse energy respectively pulse power for permanent operation



Specification

Parameters	Test conditions	Specified values
Temperature Cycling	2000 cycles (-55 °C to +150 °C)	±0.7 %
Low Temperature Storage and Operation	-65 °C for 250 h	±0.1 %
Resistance to Soldering Heat	3x reflow soldering (condition K), time above 217°C, 60s – 150s	±0.5 %
Mechanical Shock	100 g, 6 ms half sine	±0.2 %
Vibration, High Frequency	10 g, 10-2000 Hz, 24 h each axis	±0.2 %
Operational Life	2000 h, $T_k = 130\text{ °C}$ max at rated power	±0.7 %
High Temperature Exposure	2000 h / 170 °C	±0.7 %
Bias Humidity	+85 °C, 85 r.F., 1000 h	±0.7 %

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