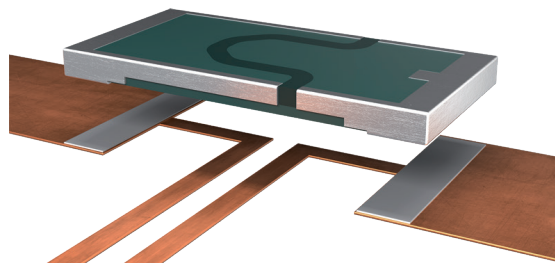


CMK (1206)

ISA-PLAN® PRECISION RESISTOR



FEATURES

- 4 W power rating at 70 °C
- Constant current up to 28 A (5 mOhm)
- High pulse power rating
- Good long-term stability
- Mounting: Reflow-, and IR-soldering
- AEC-Q200 qualified



APPLICATIONS

- Current sensor for power hybrid applications
- Control systems for the automotive market
- Parking brake
- Frequency converters
- Switch mode power supplies
- Driver for LED light systems

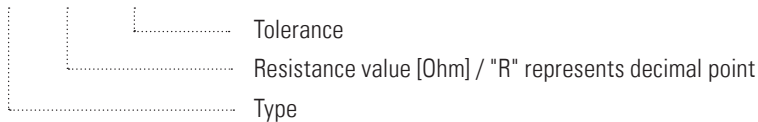
Technical data

Resistance values	mOhm	5*	8	10 to 100
Tolerance	%	1		1 / 5
Temperature coefficient (20-60 °C)	ppm/K	<20		<50
Applicable temperature range	°C	-65 to +170		-65 to +170
Power rating P_{130 °C}	W	1.5	1	0.5
Power rating P_{70 °C}	W	4	3	1.25
Internal heat resistance (R_{thi})	K/W	<25	<30	<80
Dielectric withstanding voltage (AC/DC)	V	200		200
Inductance	nH	<3		<3
Stability (at rated power) deviation after 2000h T_K = Terminal temperature	%	<1.0 (T_K = 130 °C)		

* in qualification process

Ordering code

CMK - R010 - 1.0

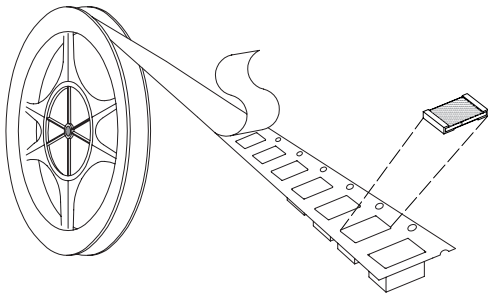


Recommended solder profile

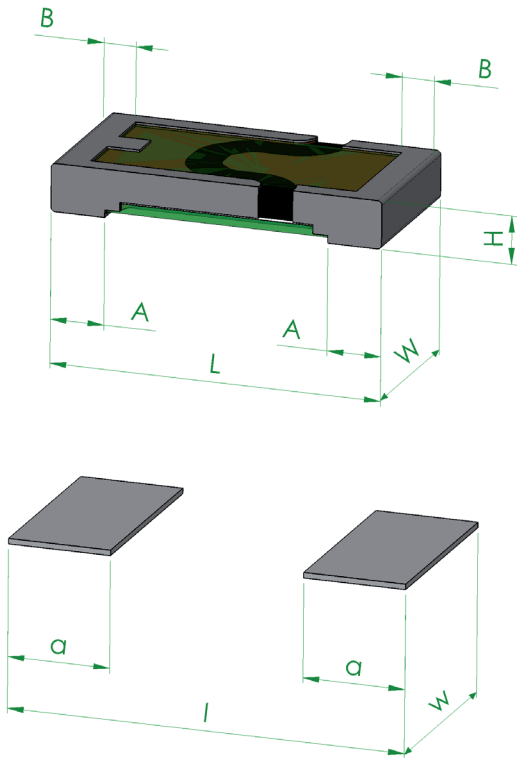
Reflow-, IR-soldering				
Temperature	°C	260	255	217
Time	sec	peak	40	90

Tape and reel information

Specification	DIN EN 60286-3			
Tape width	mm	8		
Reel size	inch	13		
Parts per reel	pcs	12500		
Packaging weight	g	454		



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



Type	L	W	H	A	B
CMK	3.05 ± 0.2	1.52 ± 0.2	0.4 ± 0.15	0.5 ± 0.2	0.3 ± 0.15

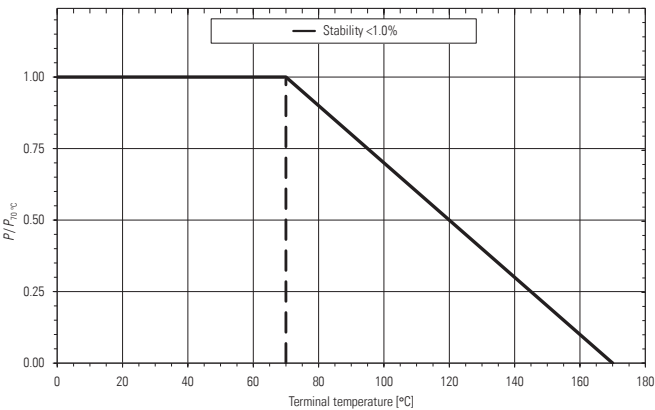
Solder pad type	l	w	a
CMK	3.7	1.9	0.95

Available standard resistance values and tolerances

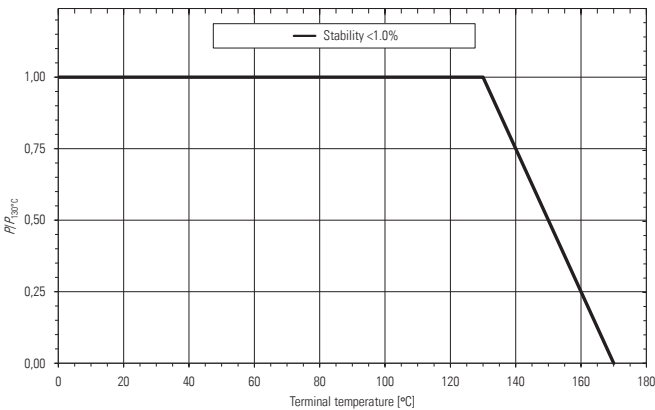
Resistance values	Tolerance	
	1.0	5.0
R005	✓	
R008	✓	
R010	✓	✓
R015	✓	✓
R020	✓	✓
R025	✓	
R030	✓	✓
R033	✓	✓
R039	✓	
R050	✓	✓
R062	✓	✓
R100	✓	✓

✓ = available

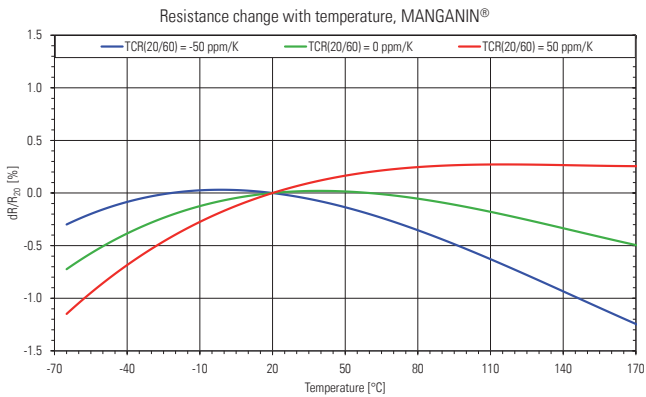
Power derating curve at 70 °C



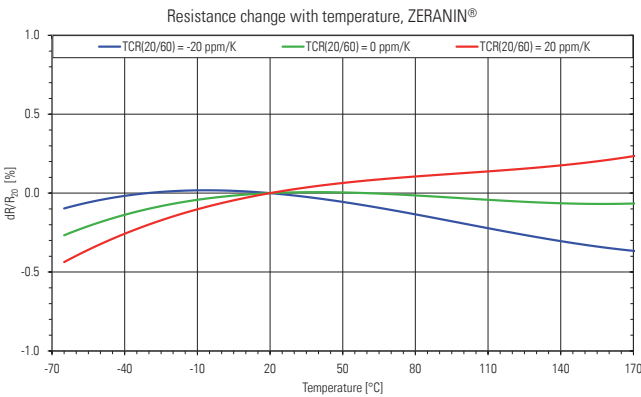
Power derating curve at 130 °C



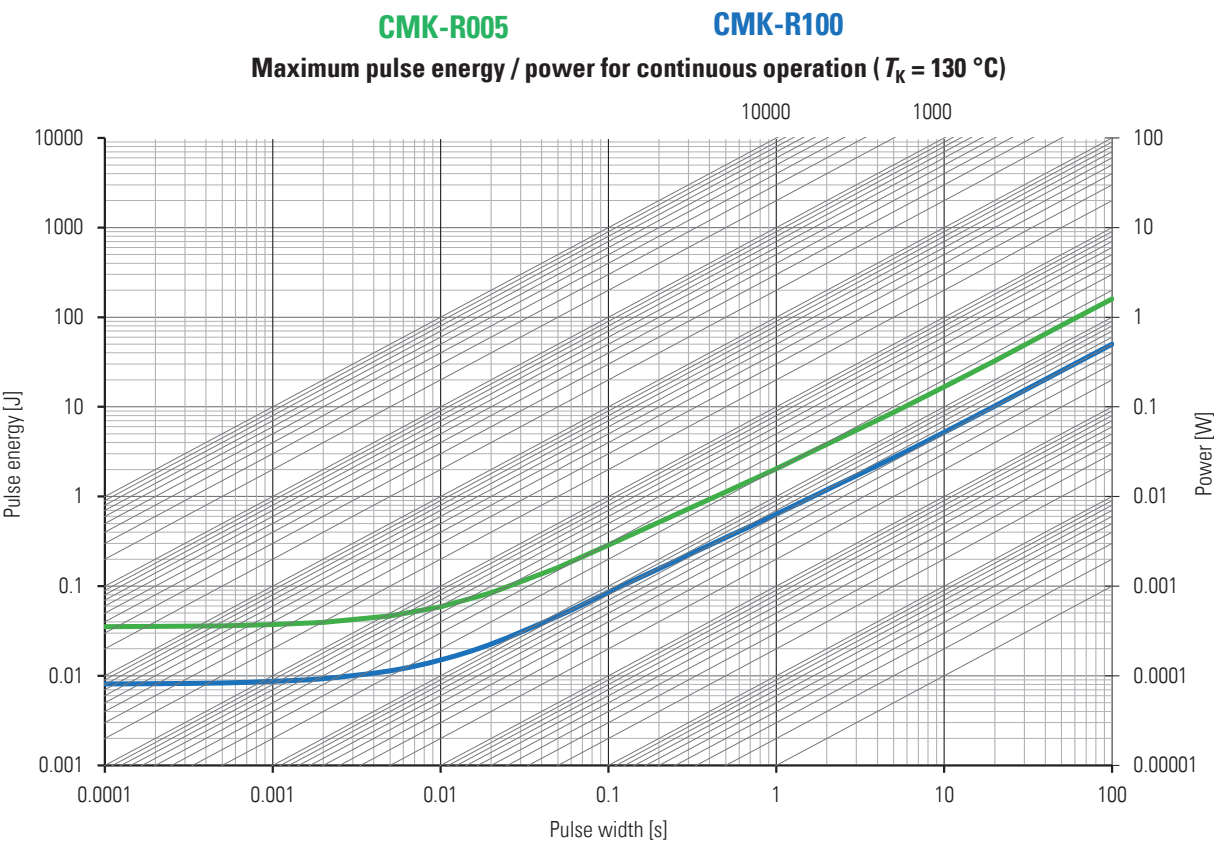
Temperature dependence of the electrical resistance of MANGANIN® resistors



Temperature dependence of the electrical resistance of R005 R008 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)	±0.5 %
Low Temperature Storage and Operation	-65°C for 250 h	±0.1 %
Resistance to Soldering Heat	260°C for 10 sec / 8h steam aging	±0.3 %
Mechanical Shock	100 g, 6 ms half sine	±0.1 %
Vibration, High Frequency	10 g, 10-2000 Hz, 24 h each axis	±0.1 %
Operational Life	2000 h, T_K max at rated power	±1.0 %
High Temperature Exposure	2000 h / 170°C	±1.0 %
Bias Humidity	+85°C, 85 r.F., 1000 h	±0.5 %

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