Technical Data

Resistance at 0 °C	100 Ω
Temperature coefficient (0 °C up to 100 °C)	$3.85 \cdot 10^{-3}$ K^{-1}
Tolerance classes to DIN EN 60751	F 0,1; F 0,15, F 0,3
Operating temperature range depending on lead material:	
AgPd5, Au-coated Ni-wire	-50 °C up to +400 °C
Pt-coated Ni-wire	-50 °C up to +500 °C (short-time up to 550 °C)
AuPd5, Pt	-50 °C up to +600 °C
Measurement current (DC) at 25 °C	1.0 mA
Maximal permissible peak current (DC) at 25 °C	3.0 mA
Insulation resistance	> 10 MΩ
Self-heating at 0 °C	< 0.5 K / mW
Thermal response time	
Flowing water (v = 0.2 m/s)	$T_{0.5}$ = 0.07s, $T_{0.9}$ = 0.2s
Flowing air (v = 1 m/s)	$T_{0.5}$ = 4 s, $T_{0.9}$ = 10 s

Resistance value [Ω] at

Temperature	Tolerance class		
	F 0,1 [Ω]	F 0,15 [Ω]	F 0,3 [Ω]
0 °C	100 ± 0.04	100 ± 0.06	100 ± 0.12
+100 °C	138.51 ± 0.10	138.51± 0.13	138.51 ± 0.30

Maximal Resistance Change at UCT 250 h	< 0.1 %
Specification	DIN EN 60751

Operating conditions

Unprotected application only in dry environments without any contamination

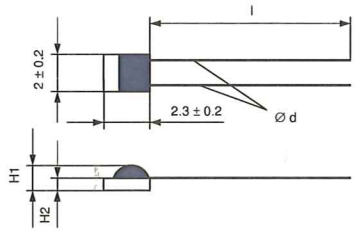
Technology

Advanced thin-film-technology (ceramic carrier with a structured platinum layer, covered with a passivating layer)

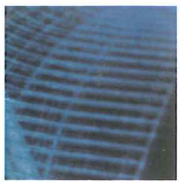
Conformity

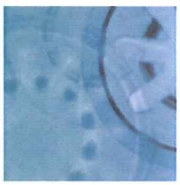
2002/95/EC Restriction of the use of Hazardous Substances Directive (RoHS)

Dimensions [mm]



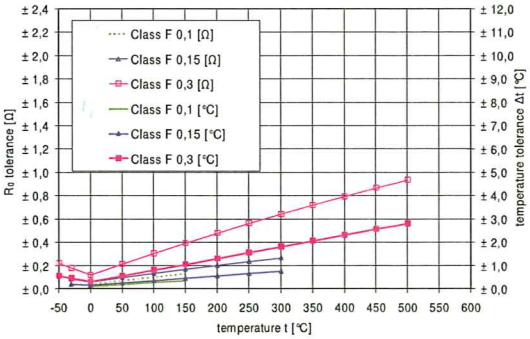
	FMC2105 2x2.3x1.3	FMC2105 2x2.3x1.0	Leads	AgPd5	NiAu	NiPt	AuPd5	Pt
H1 [mm]	1.3 ± 0.2	1± 0.2	l [mm]	15 ± 1	15 ± 1	10 ± 1	10 ± 1	7 ± 1
H2 [mm]	0.65	0.4	d [mm]	0,25	0,2	0,2	0,25	0,2





Functional performance

according to DIN EN 60751



Picture 1: Resistance and temperature tolerances of FMC 2105 (Pt-Leads)

Temperature range from -50 °C up to 0 °C:

$R_t = R_o \cdot (1 + A \cdot t + B \cdot t^2 + C \cdot (t - 100\ °C) \cdot t^3)$

Temperature range from 0 °C up to +600 °C:

$R_t = R_o \cdot (1 + A \cdot t + B \cdot t^2)$

Tolerance classes to DIN EN 60751:

Class F 0,1 (0 °C - +150 °C): $\Delta t = \pm (0.1 + 0.0017 \cdot |t|)$

Class F 0,15 (-30 °C - +300 °C): $\Delta t = \pm (0.15 + 0.002 \cdot |t|)$

Class F 0,3 (-50 °C - +500 °C): $\Delta t = \pm (0.3 + 0.005 \cdot |t|)$

Whereby:

R_t ... Resistance [Ω] at temperature t

R_o ... Resistance [Ω] at 0 °C

t ... Temperature [°C]

Δt ... Permissible temperature deviation at t [°C]

A = $3.9083 \cdot 10^{-3}$ $°C^{-1}$

B = $-5.775 \cdot 10^{-7}$ $°C^{-2}$

C = $-4.183 \cdot 10^{-12}$ $°C^{-4}$

Fields of application

- Industrial electronics
- Building automation
- Automotive electronics
- Energy and environmental engineering
- Safety and medical engineering

Ordering examples

	Construction		Class of accuracy	Lead material	Temperature range [°C]
Code	**FMC**	**2105**	**F 0,15**	**AgPd5**	**- 50/400**
Code	**FMC**	**2105**	**F 0,3**	**NiPt**	**- 50/500**

Other classes of accuracy and wire lengths are available on request.