HSR High-precision Pin Sampling Resistors

Features

- Rated power: 1–7 W
- Tolerance: ±5%, ±2%, ±1%
- TCR down to ±40 ppm/°C
- Low inductance; good solderability
- RoHS compliant; custom versions available



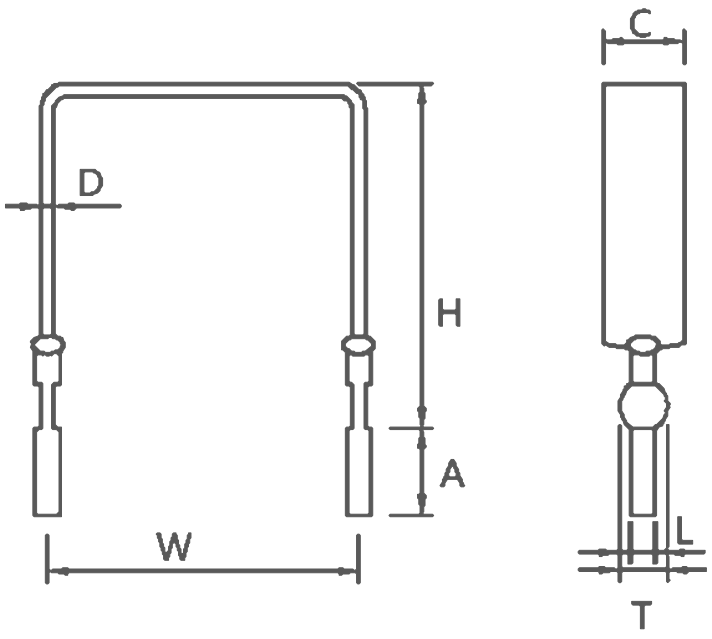
Applications

Current sensing, drive technology, power electronics, appliance controllers, automotive electronics and communication systems.

Standard Dimensions • mm

C/mm	W/mm	H/mm	A/mm	L/mm	T/mm
2.4~3.5	10~30	7.5~30	3.5±0.5	1.0±0.1	1.5±0.2

Mechanical Drawing • mm

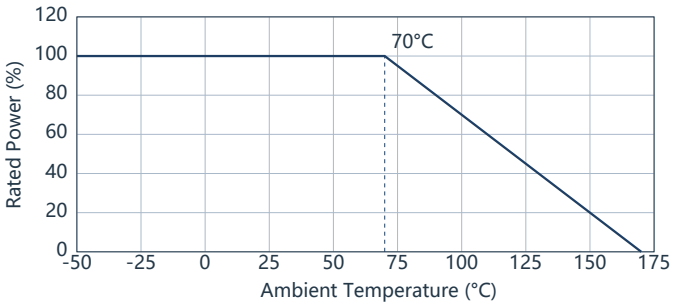


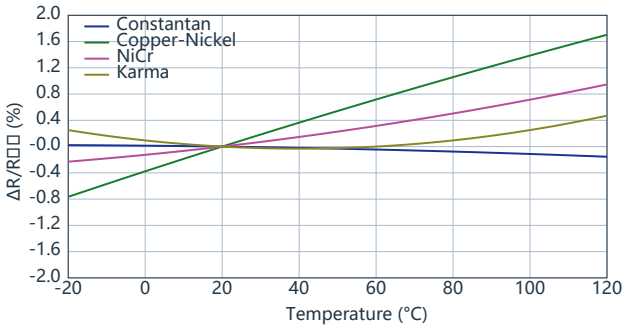
Pitch and Resistance Ranges • mΩ

Thickness × width (mm)	Current (A)	10 mm	15 mm	20 mm	25 mm	30 mm	Material	TCR ppm/°C
1.3×3.5	30	2.5~7	2.8~7.6	3.6~8.4	4~8.8	4.4~9	Constantan	±40
1.3×3.5	28	7~19	7.8~21	10~23	11~24	12~25	Karma	±40
1.1×3.3	30	2~5.5	2.5~6	3~6.5	3.5~7	4~7.5	Copper-Nickel	±200
1.1×3.3	25.5	8.5~25	10~25	12~28	13~29	16~31	Karma	±40
1.1×3.3	28	3~9	3.5~10	4.5~10	5~11	5.5~11	Constantan	±40
1.1×2.8	25.5	2.4~6.5	3~7	3.5~7.7	4.2~8.2	4.8~8.8	Copper-Nickel	±200
1.0×4	33	2~5	2.3~5.5	2.8~6	3.2~6.5	3.7~7	Copper-Nickel	±200
0.9×4	28	3.3~9.5	4~10	5~10	5.5~11	6.5~12	Constantan	±40
0.9×2.7	19	5~14	6~15	7.5~15	8.5~16	10~17.5	Constantan	±40
0.85×2.4	15	5~16	6~17	7.5~18	9~19	10~20	Constantan	±40
0.8×3.3	20	4~12	5~13	6~14	7~15	8~16	Constantan	±40
0.8×3.3	19	11~33	13~35	17~38	19~40	22~44	Karma	±40
0.8×3	19	4.5~13	5.5~14	6.6~15	7.7~16	8.8~17	Constantan	±40
0.8×2.4	15	6~17	7.5~18	9~20	11~21	12~22	Constantan	±40
0.8×2	11	19~55	22~58	28~64	31~66	37~69	Karma	±40
0.7×6	32	3.5~6.8	3.5~7.7	4.3~8.5	4.3~8.5	5~9.5	Constantan	±40
0.6×6	28	4~8	4~9	5~10	5~10	6~11	Constantan	±40
0.6×5	21	11~29	13~30	15~33	16~34	20~37	Karma	±40
0.6×2.4	11.5	9~22	10~24	12~25	13~26	15~28	Constantan	±40
0.6×2.4	10	26~60	29~66	34~69	37~71	42~77	Karma	±40
0.5×6	23.5	3.5~10	4.4~11	5.3~12	6.2~13	7~14	Constantan	±40
0.5×3.5	13.5	6~18	7.5~19	9~20.5	11~22	12~24	Constantan	±40
0.5×3.3	13	6~20	8~22	9~23	11~24	12~26	Constantan	±40
0.5×3.3	11	14~44	16~47	20~50	23~53	27~58	NiCr	±120
0.5×3	12	9~22	10~24	11~25	13~26	14~28	Constantan	±40
0.4×3.3	10	8~25	10~27	12~29	14~31	16~33	Constantan	±40
0.4×3.3	9	21~56	25~60	29~65	33~69	38~74	NiCr	±120
0.4×3	9.5	10~27	13~29	14~31	16~34	19~36	Constantan	±40
0.4×3	8.5	23~60	30~65	32~69	36~76	43~81	NiCr	±120
0.4×2.4	7.5	13~35	15~37.5	17.5~40	20~42	23~45	Constantan	±40
0.4×2.4	7	29~78	34~84	40~90	45~95	51~101	NiCr	±120
0.36×2.4	6	28~80	33~87	40~94	48~100	55~107	NiCr	±120
0.3×6	14	5~24	7~25	8~26	9~28	11~29	Constantan	±40
0.3×4	9	8~36	10~38	12~40	14~43	16~44	Constantan	±40
0.3×3.5	8.5	9~41	11~43	13~45	16~48	18~50	Constantan	±40
0.3×3.3	8	9~43	12~46	14~48	16~50	19~53	Constantan	±40

Thickness × width (mm)	Current (A)	10 mm	15 mm	20 mm	25 mm	30 mm	Material	TCR ppm/°C
0.3×3.3	7	25~120	32~126	39~134	45~140	52~147	Karma	±40
0.3×3	7	10~45	13~50	15~53	18~56	21~58	Constantan	±40

Performance • Derating & TCR (20–120°C)

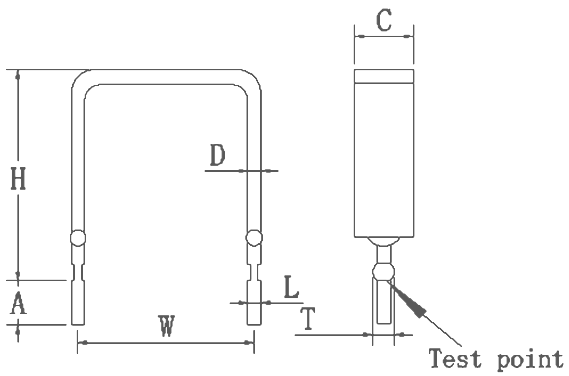




Materials & Resistivity

Symbol	Materials	Resistance Rate
1	Constantan	48μΩ．cm
n	NiCr	108μΩ．cm
6	Copper-Nickel	30μΩ．cm
K	Karma	133μΩ．cm

Typical Product Dimensions & Performance



Item	Parameter
Material	Constantan / Tinned Copper
A	3.5 mm±0.5mm
H	17mm±2.0mm
W	20.32 mm±0.5mm
C	3.5 mm±0.2mm
D	1.3mm±0.1mm
L	1.0 mm±0.1mm
T	1.5~ 1.7mm
resistance value	5mΩ±1%
Rated power	5W
Mark	R005F
Operating temperature	-65℃~170℃

Ordering Information

Example: H 5 -20.32 -5 F -t -y. HSR-H; 5 W; 20.32 mm pitch; 5 mΩ; J ±5%, G ±2%, F ±1%; t: material option; y: marking option.

Pitch, overall height and rated current/power may be customized; contact INLANX for special versions.

Endurance Tests

Iterms	Limits	Additional Requirements
Short time overload	within ±1% No evidence of mechanical damage.	Rated power X 5 times, 5s
Terminal strength	No evidence of mechanical damage.	> 13kg
vibration	Resistance deviation < ±0.5%, no appearance damage	The frequency was from 10Hz to 2000Hz within 1min. The test was conducted in three directions of 10g vibration magnitude, X-Y-Z, and 24H in each direction.
Resistance to soldering heat	within ±0.5% No evidence of mechanical damage.	260±5℃, 10±1sAfter test leave for 3h.
Solderability	Covered with new solder by 95% at least.	Test temperature of solder: 245±5℃ Dipping time in solder: 5±0.5s
Temperature cycle	within ±1% No evidence of mechanical damage.	-55°C ~ +125°C, 1000 circulation
Biased Humidity	within ±1%	1000hrs 85℃/85%RH。Note:Specified conditions:10% of operating power.
Load life	within ±1%	Rated voltage (90 min ON, 30 min OFF)

Bulk, with inner and outer packaging. Revision: A1.0 / 21-Sep-2022 / First issue