

INTRON precision thin film resistors are made by vacuum depositing a controlled film of NiCr on high purity prescored alumina substrate. The resistor is formed using high resolution photolithography. The patterns are designed such that no hot spots are created. The values are microtrimmed using laser to the exact value within a tolerance of 0.05%. The TCR and tolerance is obtained by process capability and does not rely on selection process. The leads are mechanically attached far from the soldering point with no chance of open circuit. These resistors are encapsulated using epoxy making them more robust. Resistors are printed with values, absolute tolerance and TCR for easy identification.

### APPLICATIONS

- Precision weighing scales
- Strain guage calibration
- Calibration Equipment
- Precision Amplifier

### MATERIAL OF CONSTRUCTION

- Resistive Material: NiCr
- Substrate : High purity Alumina
- Body: Epoxy Coated
- Leads: Tinned Copper Wire
- RoHS compliant

### FEATURES

- Absolute Temperature Co-efficient (TCR) :  $\pm 5, \pm 10, \pm 15, \pm 25$  ppm/ $^{\circ}\text{C}$  (Tested between  $+25^{\circ}\text{C}$  &  $+75^{\circ}\text{C}$ )
- TCR tracking : 2, 5, 10, 25 ppm/ $^{\circ}\text{C}$
- Rated Power per element: 0.1W @  $70^{\circ}\text{C}$
- Absolute tolerance :  $\pm 0.05\%, \pm 0.1\%, \pm 0.2\%, \pm 0.5\%, \pm 1\%$
- Ratio matching :  $\pm 0.02\%, \pm 0.05\%, \pm 0.1\%, \pm 0.2\%, \pm 0.5\%$
- Resistance Range: 10 $\Omega$  to 100K  $\Omega$  with any odd value possible
- Ratio between the values: 200
- Non-inductive, non-capacitive design
- For lower or higher values contact us
- Customized printing option on resistors
- No MOQ, we can supply just 1 pc.

### DIMENSIONS :

PHOTO	TYPE	POWER RATING	LEAD PITCH	MAXIMUM WORKING VOLTAGE	RESISTOR RANGE	DIMENSIONS IN MM					
						L	B	D	E	F	d
	VD	0.1 W per element	2.54mm 0.1"	100V	10 $\Omega$ to 100K $\Omega$ hms	7.5 $\pm 0.2$	8.3 $\pm 0.2$	2.8 $\pm 0.2$	5.08 $\pm 0.2$	25 $\pm 2$	0.6 $\pm 0.5$

Customized lead length available

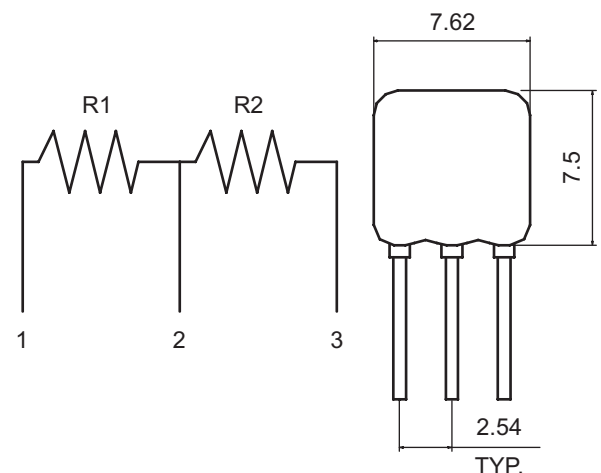
### MARKING

The resistors are marked with values, absolute tolerance and TCR for easy identification.

Any customer code can be printed on resistor depending on the space.

### ORDERING INFORMATION:

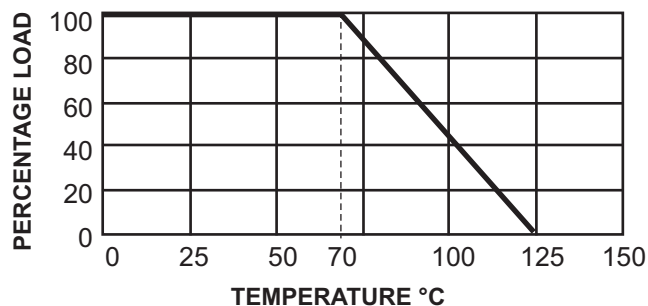
VD	1K/10K	0.1%	10ppm/ $^{\circ}\text{C}$	0.05 %	2ppm/ $^{\circ}\text{C}$
Series	Values	Abs. Tolerance	Abs. TCR	Ratio matching	TCR tracking



## STANDARD TESTING PROCEDURE FOR 100% OF OUR RESISTORS

1. Short time Overload in which 2.5 times the rated voltage (6.25 X rated power) or maximum rated overload voltage is applied for 5 seconds
2. TCR measurement done at +25°C and +75°C
3. Ageing at rated voltage done for 0.1% and 0.05% resistors to improve stability
4. Tolerance measurement on 7½ DMM at +25°C ± 2°C
5. Visual and mechanical inspection

## DERATING CURVE:



## PERFORMANCE:

Parameters	Specifications	Test Conditions
Operating Temperature Range	-55°C to +125°C	
Insulation Resistance	10,000M Ω	Apply 100 Vdc for 1 minute
Temperature Cycling	+/-0.05%	-55°C 30min, +125°C 30min, 5 cycles
Damp Heat	+/-0.1%	40 ± 2°C, 90-95%RH, DC 0.1W, 1,000 hours
Short Time Overload	+/- 0.05%	2.5 times the Rated Voltage or Max. Overload Voltage whichever is lower for 5 seconds
Load Life	+/-0.1%	Rated Power at 70°C, 90min ON, 30min OFF 1000 hours
Soldering Heat	+/- 0.03%	350°C, 3 seconds
Moisture Resistance	+/-0.1%	+65°C to -10°C, 90-100%RH, Rated Voltage, 10 cycles (240 hrs)
Solvent Test	No damage	IPA test
Solderability	Min. 95% coverage	235°C, 2 seconds
Noise	< -43dB	
Shelf Life Stability	+/- 0.03%	One year at 25°C

Reference Standards : MIL-STD-202, JSS 50401  
MIL-PRF-SS342

All product's, product specifications and other data are subject to change without notice.

# INTRON

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