Resistors

Ultra-High Value Precision Resistors

3810 Series

- Resistance range up to 100 T ohms (10¹⁴ ohms)
- Designed for low current (picoampere level) measurements
- Low voltage coefficient
- Hermetically sealed
- Leakage current minimised by hermetic sealing and guard ring





All parts are Pb-free and comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

Electrical Data									
				3810	3811		3812	2	
ľ	Resistance range	oł	ıms	3811000M to 1T	3811 100M to 1T	3812 17	to 1	00Т	
ľ	Reinisitangeelængent voltage	ohms v	olts	100М to 1 Ђ00	100M to 1T 1000	1 ⁺ to 100T	1000	þ	
	L TTCIR IT(20 4001001709103)ge	vq¢pform	/° C	500	¹⁰⁰⁰ -500 to -3500	1000			
	^T Resistance ^t tolerance	ppm/°C	%	10, 20	^{500 to -3590} , 2, 5, 10	1T to 10T; 2	., 5, 10	0 >	
ļ	Resistance tolerance	%		10, 20	1, 2, 5, E24 preferred ^{T to 10T}	; 2, 5, 10 >10T;	5,10		
	Ambient temperature range		°C		E24 preferred -40 to 100				
	Ambient temperature range	°C			40 to 100			-	

Physicableta



Construction Construction The Centretox resistive film is fired onto high quality ceramic Marking The serial number, esistance value and tolerance code are legend sThet Germetox enersistive film is fired onto thigh guality ceramicarked. The serial humbar resistance value and tolerance code a substrate e has end capsiare forced dittad to the substrate marked. The resistance value marking conforms to IEC 6

two leads them adjusted to value with a melical cut in the film Solvent Resistance

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notes, in a Product Information sheet, available on request. Terminations

MetriihationsIder-coated Dumet wire.

Svlateria The solder in coasted in Desmetter vire universe of

C 68.2.21 The terminations meet the requirements of Strength Solderability The tergeinations meet the requirements of IEC 115-1, Clause 4.17.3.2

General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

www.ttelectronics.com/resistors



3810 Series

Performance Data

			Maximum	Typical
Load at rated voltage: 1000 hours at 20°C		ΔR%	2	1
Shelf life: 12 months at room temperature		ΔR%	1	0.5
Resistance to solder heat		ΔR%	0.2	<0.1
Capacitance	3810 3811	pF pF	0.4 0.2	

Voltage coeffic	ient of resistance	,	ppm/volt	
	100Μ Ω	1T Ω	100Τ Ω	Measured at voltage
310	-20	-160		of 100 and 500 volt
811	-10	-80		
12	-10	-80	-150	

Application Notes

Each resistor is packed with a card stating nominal resistance value at 100 V applied, selection tolerance, date and serial number.

Although the glass envelope is an excellent insulant and would be adequate in a dry atmosphere, the condensation which occurs in a normal atmosphere will provide a shunt resistance which will modify the very high resistance value. To minimise this effect all units are coated with silicone, and it is essential that this coating is not damaged; any handling should be by the terminations. For the same reason solvents must not be used.

The resistors should not be used in a damp atmosphere. If moisture develops on the body the resistor should be dried for 30 minutes at 70°C and allowed to cool for a further 30 minutes in a dry atmosphere.

To avoid damage to the seal between terminations and glass, the leads must be fully supported inside the point of bending during any preforming.

Ordering Procedure

Example: 3812 at 10 teraohms and 2% tolerance -

Guard Band

For details of how to use the guard band, fitted to resistors of 100 G ohms and over, see

http://www.ttelectronics.com/themes/ttelectronics/datasheets/resistors/literature/3810_AN.pdf

Non-standard versions

Units without glass envelopes but with lacquer protection are available, but will have a limited electrical performance.

Measured values at a voltage other than 100V may be recorded.

For non-standard items contact TT Electronics.

Packaging

Each resistor is individually packed in a polythene envelope together with a card carrying measurement details and serial number (See Application Notes).

 3812 - 10TGI

 Type

 Value (use IEC62 code)

 Tolerance (use IEC62 code)

 F
 1%

 G
 2%

 K
 10%

 Packing

 I
 Individual/Bulk

 Standard

General Note

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