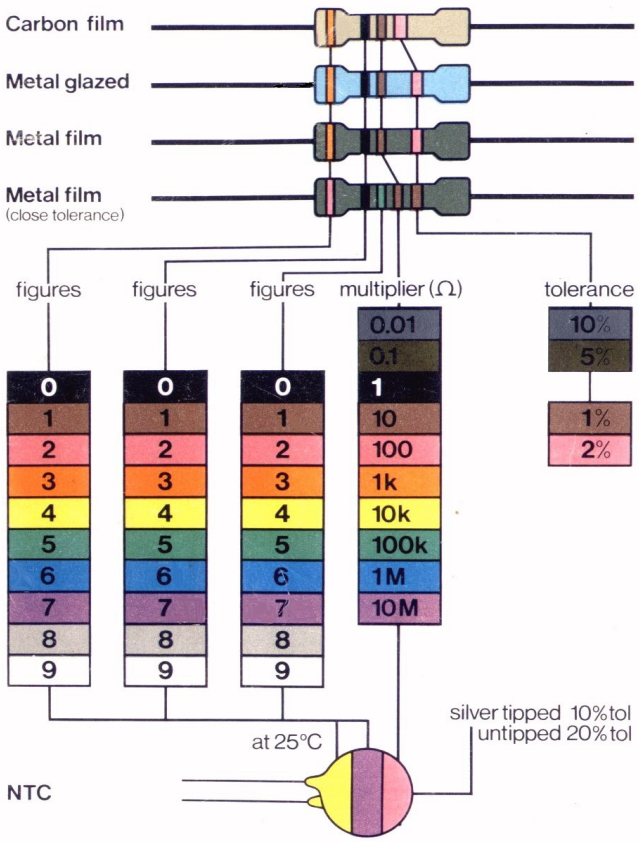
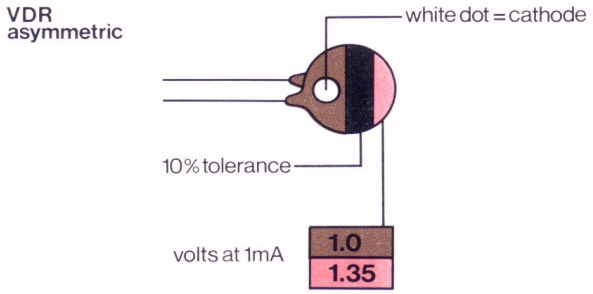
PHILIPS Electronic components and materials

Colour code

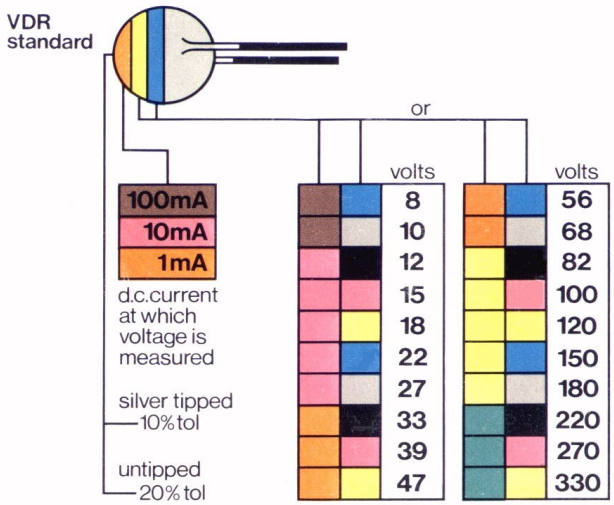
PHILIPS

Resistors





Resistors



Capacitors

Miniature ceramic plate — **Coupling-decoupling**

100-4700pF Class 2 tolerance 10%

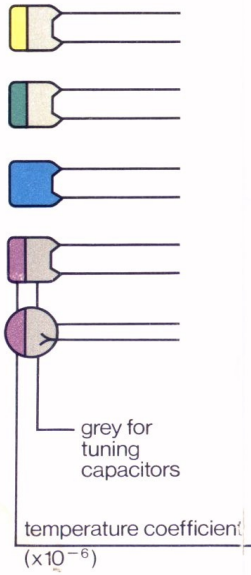
1-22nF Class 2 tolerance -20% +80%

22-100nF Class 3 tolerance -20% +80%

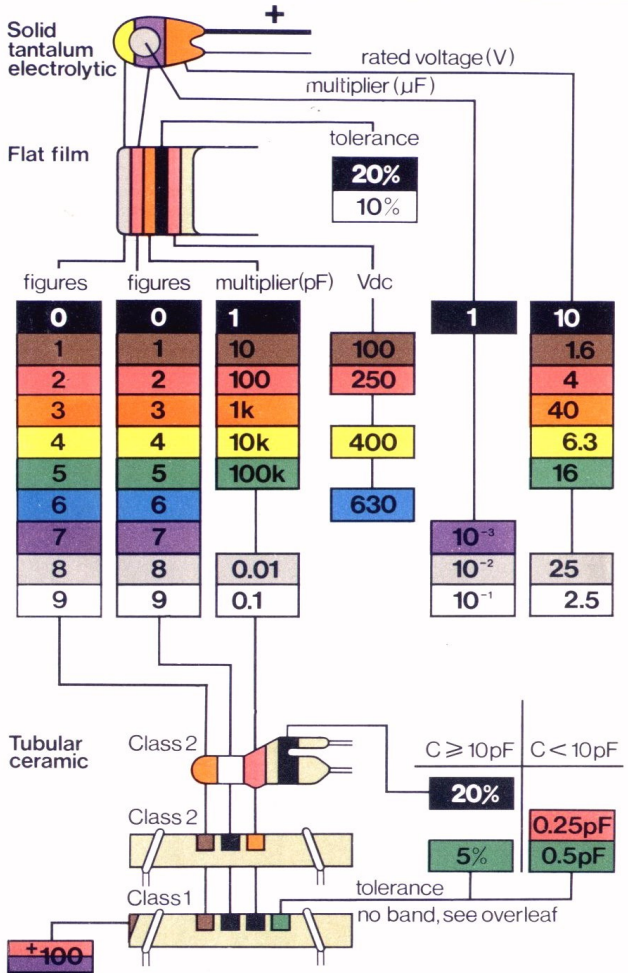
Tuning

0.47-560pF Class 1B tolerance 2%

disc 0.47-100pF Class 1B



Capacitors



Rating system for resistors

Nomograms to find style or stability

Example

What is the stability of a 1 kΩ metal film resistor, style MR25, operating at 0.33 W in an ambient of 60°C. Take a horizontal line on the nomogram from 0.33 W to where it intersects the 60°C ambient line. Then vertically down to where it intersects the 1 kΩ line and horizontally to the stability calibration column, showing a stability of 0.28 change over 1000 working hours.

Use the reverse process to find right style for a given stability

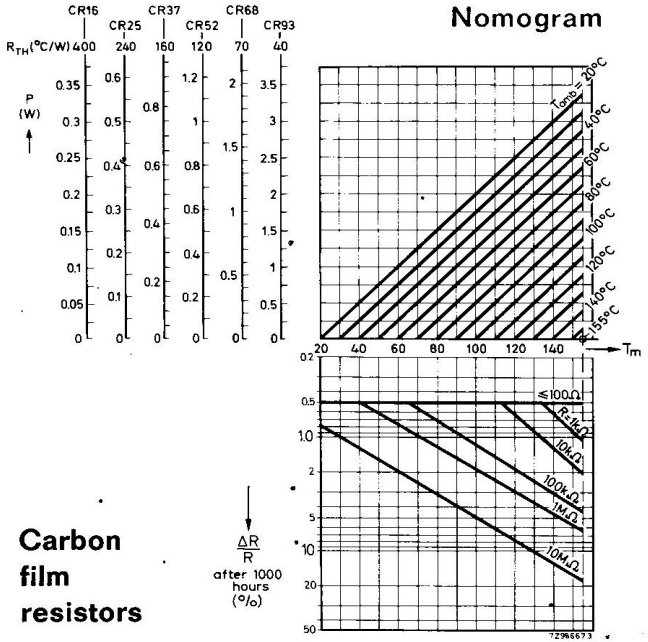
Carbon film resistors

style	limiting voltage (V)	resistance range	tolerance %	series
CR16	150	10 Ω - 220 kΩ	5	E24
		270 kΩ - 1 MΩ	10	E12
CR25	250	1 Ω - 1 MΩ	5	E24
		1.2 MΩ - 10 MΩ	10	E12
CR25A	250	1 Ω - 1 MΩ	5	E24
		10 Ω - 220 kΩ	2	E24
		1.2 MΩ - 10 MΩ	10	E12
CR37	350	1 Ω - 1 MΩ	5	E24
		1.2 MΩ - 10 MΩ	10	E12
CR52	500	1 Ω - 1 MΩ	5	E24
		1.2 MΩ - 22 MΩ	10	E12
CR68	750	1 Ω - 1.6 MΩ	5	E24
		1.8 MΩ - 22 MΩ	10	E12
CR93	1000	10 Ω - 22 MΩ	5	E24

Metal film resistors

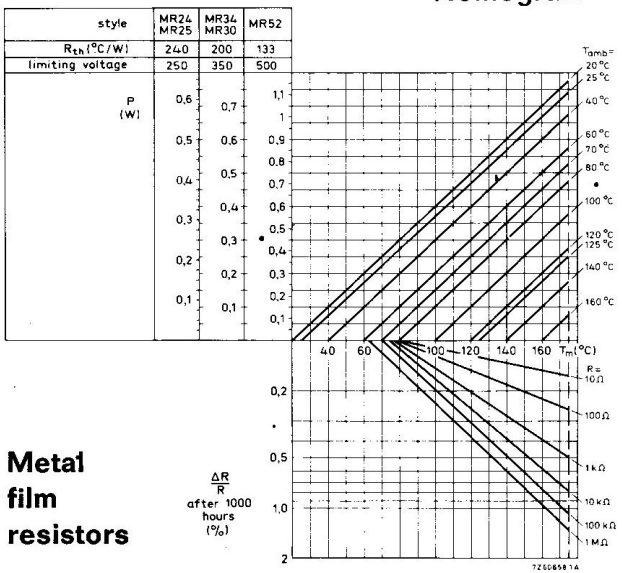
style	limiting voltage (V)	resistance range	tolerance %	series
100 ppm/°C temperature coefficient				
MR25	250	4.99 Ω - 301 kΩ	1	E96
MR25	250	5.1 Ω - 300 kΩ	2	E24
MR30	350	4.99 Ω - 1 MΩ	1	E96
MR30	350	5.1 Ω - 1 MΩ	2	E24
MR52	500	4.99 Ω - 1 MΩ	1	E96
MR52	500	5.1 Ω - 1 MΩ	2	E24
50 ppm/°C temperature coefficient				
MR24	250	49.9 Ω - 301 kΩ	1	E96
MR34	350	49.9 Ω - 681 kΩ	1	E96
MR54	500	49.9 Ω - 1 MΩ	1	E96

Nomogram



Carbon film resistors

Nomogram



Metal film resistors

Values given for each series appear in every decade.

series E12

10	12	15	18	22	27	33	39
47	56	68	82				

series E24

10	11	12	13	15	16	18	20
22	24	27	30	33	36	39	43
47	51	56	62	68	75	82	91

series E96

100	102	105	107	110	113	115	118
121	124	127	130	133	137	140	143
147	150	154	158	162	165	169	174
178	182	187	191	196	200	205	210
215	221	226	232	237	243	249	255
261	267	274	280	287	294	301	309
316	324	332	340	348	357	365	374
383	392	402	412	422	432	442	453
464	475	487	499	511	523	536	549
562	576	590	604	619	634	649	665
681	698	715	732	750	768	787	806
825	845	866	887	909	931	953	976

Letter code

Capacitance (figures & letter)	Tolerance (capital) ≤ 10 pF	> 10 pF	Voltage [1] (lower case)
p 33 0,33 pF	B ± 0,1 pF	—	a 50 V—
3 p 3 3,3 pF	C ± 0,25 pF	—	b 125 V—
33 p 33 pF	D ± 0,5 pF	± 0,5 %	c 160 V—
330 p 330 pF	F ± 1 pF	± 1 %	d 250 V—
n 33 0,33 nF	G ± 2 pF	± 2 %	e 350 V—
3 n 3 3,3 nF	H —	± 2,5 %	g 700 V—
33 n 33 nF	J —	± 5 %	h 1000 V—
330 n 330 nF	K —	± 10 %	u 250 V~
μ 33 0,33 μF	M —	± 20 %	v 350 V~
	P —	+ 100/-0 %	w 500 V~
	R —	+ 30/-20 %	
	S —	+ 50/-20 %	
	Z —	+ 80/-20 %	

[1]) No indication is given for 400 V.