

# Colour code for linear resistors

## Resistor ranges

### Standard resistors

metal film (SFR)

style	limiting voltage V (RMS)	resistance range	tolerance (%)	series (E)
SFR16S	200	1 Ω - 3 MΩ	5	24
SFR25	250	1 Ω - 10 MΩ	5	24
SFR25H	350	1 Ω - 10 MΩ	5	24

### Application Specific resistors

metal glazed high voltage (VR), low ohmic surge (LSR), non flammable/fusible (NFR) and power metal film (PR)

style	limiting voltage V (RMS)	resistance range	tolerance (%)	series (E)
VR25	1150	15 MΩ - 22 MΩ	10	12
		100 kΩ - 15 MΩ	5	24
		100 kΩ - 15 MΩ	1	24/96
VR37	2500	100 kΩ - 33 MΩ	5	24
		-	1	24/96
VR68	7000	100 kΩ - 68 MΩ	5	24
		-	1	24/96
LSR37	$\sqrt{PR}^1$	1K Ω - 10 kΩ	10,20	12
PRO1	350	1 Ω - 1 MΩ	1	96
		0.22 Ω - 1 MΩ	5	24
PRO2	500	1 Ω - 1 MΩ	1	96
		0.33 Ω - 1 MΩ	5	24
PRO3	750	1 Ω - 1 MΩ	1	96
		0.68 Ω - 1 MΩ	5	24
NFR25	250	1 Ω - 15 kΩ	5	24
NFR25H	350	1 Ω - 15 kΩ	5	24

### Precision and high-precision metal film resistors

(MRS/MR/MPR)

style	limiting voltage V (RMS)	resistance range	tolerance (%)	series (E)	temp coefficient 10 <sup>-6</sup> /K
MRS16S	200	4.99 Ω - 1 MΩ	1	24/96	50
MRS25	350	1 Ω - 10 MΩ	1	24/96	50*
MR25	250	1 Ω - 1 MΩ	0.5	192	50
MPR24	250	4.99 Ω - 1 MΩ	0.5-0.1	all	25-5
		24 Ω - 100 kΩ	0.05-0.01		

\* Below 4.99 Ω: 100x10<sup>-6</sup>/K

# Colour code for linear resistors

Metal film (SFR25)

2%, 5%

Metal film (SFR25H)

2%, 5%

Metal film (NFR25)

5%

Metal glazed (VR)

5%, 10%

Surge (LSR37)

10%, 20%

Metal film (NFR25H)

5%

Metal glazed (VR)

1%

Metal film precision (MPR)

0,1% to 0,5%

Metal film (MR+MRS)

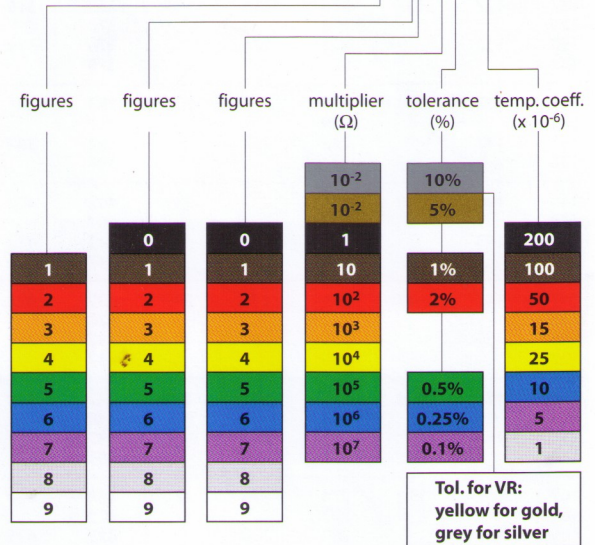
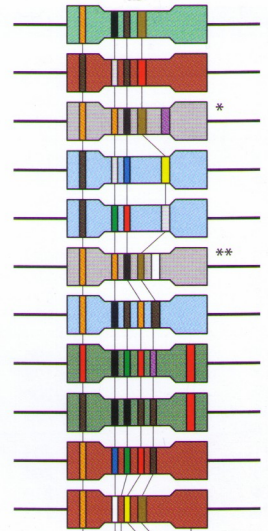
0,5%, 1%

Power metal film (PR)

1%

Power metal film (PR)

5%

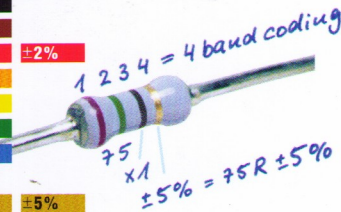


\* The violet ring on the NFR25 indicates a power of 0,33W

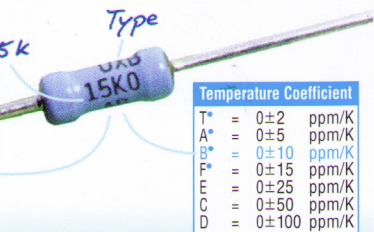
\*\* The white ring on the NFR25H indicates a power of 0,5 W

(1) LSR37 20% has no tolerance indication

1band	2band	3band	4band coding
0	0	x1	
1	1	x10	
2	2	x100	±2%
3	3	x1k	
4	4	x10k	
5	5	x100k	
6	6	x1M	
7	7		
8	8	:10	±5%
9	9	:100	±10%



Tolerance	
T*	= 0,01 %
H*	= 0,02 %
Z	= 0,025 %
A*	= 0,05 %
B*	= 0,1 %
C	= 0,25 %
D	= 0,5 %
F	= 1,0 %



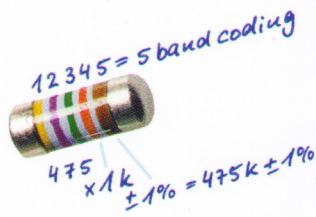
Temperature Coefficient	
T*	= 0±2 ppm/K
A*	= 0±5 ppm/K
B*	= 0±10 ppm/K
F*	= 0±15 ppm/K
E	= 0±25 ppm/K
C	= 0±50 ppm/K
D	= 0±100 ppm/K

\*Preferred BCComponents Tolerances / Temperature Coefficients.

According to IEC 60 062

MELF and Leded Resistor Products • E96 Series and E192 Series

1band	2band	3band	4band	5band coding	TC dots near the 4band or a 6band
0	0	x1		±10%	
1	1	x10		±5%	TC 200
2	2	x100		±1%	TC 100'
3	3	x1k		±0,05%	TC 50'
4	4	x10k		±0,02%	TC 15
5	5	x100k		±0,5%	TC 25
6	6	x1M		±0,25%	TC 10
7	7			±0,1%	TC 05
8	8	:10		±0,01%	
9	9	:100			



- near the 1band established reliability
- for λ <10<sup>-5</sup>/h
  - for λ <10<sup>-6</sup>/h
  - for λ <10<sup>-7</sup>/h
  - for λ <10<sup>-8</sup>/h
  - HF-version (leaded)
- near the 2band ●●● carbon film
- near the 3band ●●● HF-version (MELF)

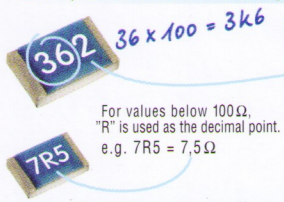
According to IEC 60 062

1 TC 100 and 50 without dot coding

BCComponents • e-mail: linearresistors@bccomponents.com • www.bccomponents.com

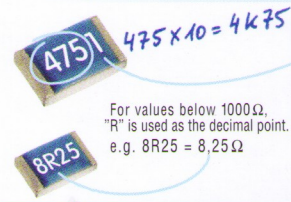


Flat Chip Resistor Products • 3 Digit Coding (E24 Series)



Code	Multiply value by
1.....	10
2.....	100
3.....	1 000
4.....	10 000
5.....	100 000
6.....	1 000 000
7.....	10 000 000
8.....	100 000 000

Flat Chip Resistor Products • 4 Digit Coding (E96+E24 Series)



Code	Multiply value by
1.....	10
2.....	100
3.....	1 000
4.....	10 000
5.....	100 000

E24	E96	E192	E24	E96	E192	E24	E96	E192	E24	E96	E192	E24	E96	E192	E24	E96	E192	E24	E96	E192
100	100	100	130	130	130	169	169	220	221	221	287	287	374	374	487	487	634	634	825	825
101	101	101	132	132	132	172	172	223	223	223	291	291	379	379	493	493	642	642	835	835
102	102	102	133	133	133	174	174	226	226	226	294	294	383	383	499	499	649	649	845	845
104	104	104	135	135	135	176	176	229	229	229	298	298	388	388	505	505	657	657	856	856
105	105	105	137	137	137	178	178	232	232	232	300	301	301	390	392	392	510	511	665	665
106	106	106	138	138	138	180	180	234	234	234	305	305	397	397	517	517	673	673	866	866
107	107	107	140	140	140	182	182	237	237	237	309	309	402	402	523	523	680	681	877	877
109	109	109	142	142	142	184	184	240	240	240	312	312	407	407	530	530	690	690	887	887
110	110	110	143	143	143	187	187	243	243	243	316	316	412	412	536	536	698	698	910	909
111	111	111	145	145	145	189	189	246	246	246	320	320	417	417	542	542	706	706	920	920
113	113	113	147	147	147	191	191	249	249	249	324	324	422	422	549	549	715	715	931	931
114	114	114	149	149	149	193	193	252	252	252	328	328	427	427	556	556	723	723	942	942
115	115	115	150	150	150	196	196	255	255	255	330	332	430	432	560	562	732	732	953	953
117	117	117	152	152	152	198	198	258	258	258	336	336	437	437	569	569	741	741	965	965
118	118	118	154	154	154	200	200	261	261	261	340	340	442	442	576	576	750	750	976	976
120	120	120	156	156	156	203	203	264	264	264	344	344	448	448	583	583	759	759	988	988
121	121	121	158	158	158	205	205	267	267	267	348	348	453	453	590	590	768	768		
123	123	123	160	160	160	208	208	271	271	271	352	352	459	459	597	597	777	777		
124	124	124	162	162	162	210	210	274	274	274	357	357	464	464	604	604	787	787		
126	126	126	164	164	164	213	213	277	277	277	361	361	470	470	612	612	796	796		
127	127	127	165	165	165	215	215	280	280	280	365	365	475	475	620	619	806	806		
129	129	129	167	167	167	218	218	284	284	284	370	370	481	481	626	626	816	816		

E24 includes the E12 series marked in blue

E96 includes the E48 series marked in blue

According to IEC 60 063

FCE 010222

